Evaluating enjoyment, presence, and emulator sickness in VR games based on first- and third-person viewing perspectives

This paper presented studies on first-person and third-person perspectives when playing computer games. In the study, they determined the levels of simulator sickness, enjoyment and presence/immersion. Our project is very relevant to this paper as it conducts an experimental study on participants comparing first-person and third-person VR perspectives.

In the study, they used three different questionnaires to test the criteria mentioned above. The three questionnaires were simulator sickness (two sessions: nausea level and oculomotor issues), game experience (in-game and post-game) and immersion experience. These questionnaires can be included in our project as well. I really liked how they used an adapted version of the immersion experience questionnaire which was applied in conjunction with the game experience questionnaire. Our project involves the usage of first-person and third-person perspectives in art performance. The game questionnaire can be helpful in making our own questionnaire related to art performances. The level of enjoyment can be determined while using the immersion experience questionnaire in conjunction with our version of the art questionnaire.

In the paper, they also compared VR perspectives to a third-perspective conventional display(3PP-CD). Live art performances can be displayed on an iPad with no VR experience and can be helpful in getting comparative results. All users were given time to relax after each game, I think this is very important for our study as users may or may not be used to the VR setting while using Oculus. Another thing I liked was the thought process behind the selection of a game. We don't need to select a game, however, when we select an art performance it should be consistent across the different media we will be using.

The results of the study indicated that people felt 77.7% less sick in 3PP-VR than in 1PP-VR. However, the oculomotor session of the questionnaire had no difference in their average scores. 1PP-VR was perceived to be more immersive than 3PP-VR, however, both of them were higher than 3PP-CD. Enjoyment levels were not dependent on the immersion levels. However, results showed that greater enjoyment might lead to a greater sense of presence.

Works Cited

Monteiro, D, Liang, H-N, Xu, W, Brucker, M, Nanjappan, V, Yue, Y. Evaluating enjoyment, presence, and emulator sickness in VR games based on first- and third-person viewing perspectives. *Comput Anim Virtual Worlds*. 2018; 29:e1830. https://doi.org/10.1002/cav.1830