COMP 210 Research Journal

COMP210

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1 Papers

1.1 Hardware Interfaces for VR Applications: Evaluation on Prototypes [1]

- Recommended reading
- VR improves game experience
- VR interfaces should let the user use them spontaneously / without explanation
- A good VR system should consider:
  - The user will be provide with a full field of vision display, usually produced by the wearing of a H.M.D.
  - Tracking of the position and attitude of the participant's body
  - Computer tracking of the participant's movements and actions
  - Negligible delay in updating the display with feedback from the body's movements and actions.

- Produced two games one for xbox 1 controller other for razer hydra controller
- Razer controller very adaptable
- One game was action adventure the other was first person puzzle
- Only evaluated on 18 students - not many?? Only students in computing/computer science courses
- Xbox controller was easier to use, but both the same after tutorials - user needs to know how to use equipment
- Game using Razer controllers more fun - could be linked to motion controls
- Action game caused more motion sickness

1.2 Human factors issues in virtual environments: A review of the literature [2]

- Recommended reading

1.3 Competence-impeding electronic games and players aggressive feelings, thoughts, and behaviours [3]

- Paper about bad controls in games making players violent
- Aggression could be linked to Self-Determination Theory (SDT)
- Aggression can be linked to video games by GAM/SLT
- Bad controls make players feel lack of competence
- VR is relatively new so controls are still experimental
  - Hand tracking
  - How player moves in game
  - Whether the UI is suited to VR

1.4 Can virtual reality be better controlled by a smart phone than by a mouse and a keyboard? [4]

- I'm using a smart phone as my interface in my VR assignment
- Traditional keyboard and mouse can be restrictive in VR games
- Keyboard and mouse aren't as natural/intuitive as touch screens
- Smart phones have most of the sensors needed to be a controller
- It's not suitable for all types of game though
- Many people own smart phones so would be cheaper than buying specific controllers

1.5 Homuncular Flexibility in Virtual Reality [5]

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References

[1] M. Mentzelopoulos, F. Tarpini, A. Emanuele, and A. Protopsaltis, "Hardware interfaces for vr applications: Evaluation on prototypes," in *Computer and Information Technology; Ubiquitous Computing and Communications; Dependable, Autonomic and Secure Computing; Pervasive Intelligence and Computing (CIT/IUCC/DASC/PICOM), 2015 IEEE International Conference on*, pp. 1578–1583, Oct 2015.

[2] K. M. Stanney, R. R. Mourant, and R. S. Kennedy, "Human factors issues in virtual environments: A review of the literature," *Presence*, vol. 7, no. 4, pp. 327–351, 1998.

[3] A. K. Przybylski, E. L. Deci, C. S. Rigby, and R. M. Ryan, "Competence-impeding electronic games and players aggressive feelings,

thoughts, and behaviors.," *Journal of personality and social psychology*, vol. 106, no. 3, p. 441, 2014.

[4] A. Kovarova and M. Urbancok, "Can virtual reality be better controlled by a smart phone than by a mouse and a keyboard?," in *Proceedings of the 15th International Conference on Computer Systems and Technologies*, CompSysTech '14, (New York, NY, USA), pp. 317–324, ACM, 2014.

[5] A. S. Won, J. Bailenson, J. Lee, and J. Lanier, "Homuncular flexibility in virtual reality," *Journal of Computer-Mediated Communication*, vol. 20, no. 3, pp. 241–259, 2015.