

ABOUT THE VR SCHOOL RESEARCH HEALTH AND SAFETY SCREENING SURVEY

The screening survey on page 2 of this document was designed as a precautionary tool to identify if high school students participating in the study might have an adverse reaction in highly immersive virtual reality (VR). Our simplified definition of highly immersive VR is: A VR experience mediated through the use of a head mounted display [HMD] (we have chosen to use the plain English term 'headset') where users experience intense feelings of presence or 'being there', and where they may have the potential for navigation and interaction within the environment. To identify potential adverse reactions a review of the literature was conducted and the safety and regulatory guides produced by manufacturers were reviewed.

Before using highly immersive VR, schools should read the safety and regulatory guides provided by manufacturers on their websites. These recommend minimum age of use requirements and outline potential adverse reactions including, but not limited to, such things as photosensitivity, and other physical and psychological impacts. It should be noted that current commercial HMDs are not designed for the size of children's heads in terms of fit and lens distance for alignment with the eyes of the user. The research literature most commonly documents cybersickness, a type of motion sickness, as an adverse effect of VR.

In our study, students were given an information pack to take home to their parents/carers. The pack comprised a participant information statement, a parent consent/child assent form and the Health and Safety Survey. The screening survey consisted of:

- Demographics (questions 1-3)
- Previous use of VR and experience of sickness (questions 4-5)
- Items on motion sickness (questions 6-7) - Question 6 was adapted from the Motion Sickness Susceptibility Questionnaire Short-form (MSSQ-Short) (Golding 2006)
- Experience or diagnosis of conditions specified in the Oculus Rift guidelines (question 8)
- Open ended question for parent/carers and their child to provide other information (question 9)

The VR School Research Team designed the survey in order to screen for potential adverse reactions and minimise risk of harm to students and disruption to learning. For example, a student with moderate or severe cybersickness would have a recovery time that impacted not only the lessons in which they were using VR, but into the school day. The survey and the accompanying information statement were also educational tools for parents, carers and students so that they were properly informed about the potential health and safety risks. The study received University's Human Research Ethics Committee Approval (No. H-2017-0229) and the NSW Department of Education State Education Research Applications Process (SERAP) Approval (No. 2017396).

All students in the project had the option of using desktop VR. If the parent/carer answered that their child 'sometimes or frequently felt sick' for questions 5-7 of the survey, or ticked any of the options in question 8, the child was exempted from using immersive VR with HMD (in this case the Oculus Rift). Parents/carers were informed about the exemption decision by the school and discussed this with their child.

To reference this screening tool use the following:

Southgate, E., Scevak, J, Smith, S.P. & Buchanan, R. (2017). VR School Health and Safety Survey. Newcastle, Australia: Digital Identity and Curation (DICE) Research Network.

References

Golding, J. F. (2006b). Predicting individual differences in motion sickness susceptibility by questionnaire. *Personality and Individual Differences*, 41, 237–248. doi:10.1016/j.paid.2006.01.012

http://downloads.bbc.co.uk/scotland/tv/trustme/motion_sickness_susceptibility_questionnaire.pdf

Oculus Rift (n.d.). *Oculus Health & Safety*. Retrieved 8 September, 2017, from

<https://static.oculus.com/documents/health-and-safety-warnings.pdf>



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Virtual Reality School Health and Safety Survey

This survey is designed to find out if your child could have a negative reaction in virtual reality (VR) when using a headset. Please fill this survey out with your child. The information will be kept confidential by the school and researchers and will be used to decide if your child should use a virtual reality headset in the classroom.

1. Name of child

2. Age of child years

3. Sex Male Female

4. How many times has your child tried virtual reality (VR) using a headset? (number)

5. Has your child felt sick during or straight after using a VR headset (tick box)?

Never tried VR with a headset	Never felt sick	Rarely felt sick	Sometimes felt sick	Frequently felt sick

6. Before the age of 12 how often did your child feel sick, nauseated or vomited from the types of transport or entertainment listed below? Tick the box that best describes your child's reaction.*

	Never applicable/ never travelled	Never felt sick	Rarely felt sick	Sometimes felt sick	Frequently felt sick
Cars					
Buses, coaches, trains					
Aircraft					
Small boats					
Ships, ferries					
Playground swings or roundabouts					
Rollercoasters, funfair rides					

7. Since turning 12, has your child experienced motion sickness?

Never felt sick	Rarely felt sick	Sometimes felt sick	Frequently felt sick

8. Has your child experienced or been diagnosed with any of the following (tick which apply):

- Epileptic seizures, blackouts, dizziness or loss of awareness triggered by light flashes or patterns
- Sensitivity to light or migraines
- Heart condition
- Other serious medical condition (please specify)

9. Please write down anything else that you think we should know. You can use the back of the page.