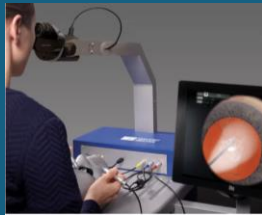


The Impact of a Virtual Reality Simulator on Students' Understanding of Ophthalmology Surgery

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Introduction

Ophthalmology is a specialised field of medicine that require precise surgical skills. Despite this, exposure to ophthalmology surgery is often limited with only one morning or afternoon in theatre being offered to students at Dundee Medical School during their surgical specialties block. To increase exposure to ophthalmology surgery a clinical teaching session was developed using the Eyesi Virtual Reality (VR) surgical simulator^[1] for students.



This poster aims to review the impact of a VR surgical simulator on students understanding of Ophthalmology surgery.

Method

71 students attended a 2-hour workshop in groups of 4-8. Student were mix of 4th year MBChB or 3rd year Scotgem students enrolled at Dundee University.

The workshop was developed and delivered by the ophthalmology clinical teaching fellow. The session covered five activities which aimed to develop microscope handling, anti-tremor skills, spatial orientation, bi-manual skills, and use of forceps.

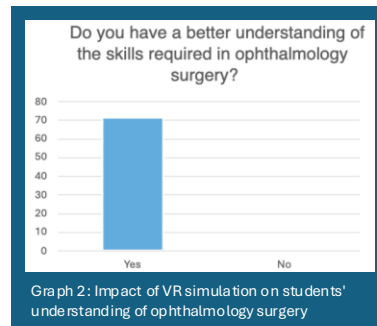
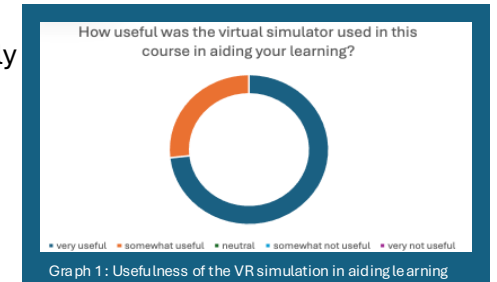
Post session students were asked to complete an online survey accessible via QR code or email

Results and Discussion

The survey had a 100% response rate with 71 responses. The high response rate was likely due to students being provided with two options (email or QR code) to access the survey.

When asked "Did you enjoy the session?" 69 students (97%) answered yes, with two students (3%), answering not sure. No students answered no. This demonstrates that sessions which make use of VR technology can be enjoyed by students.

When asked to rate how useful they found the virtual simulator in aiding their learning 52 students (73%) stated "extremely useful", and 19 students (27%) stated "somewhat useful". No students picked the neutral or not useful options. This is demonstrated in graph 1. This highlights that student view VR as a tool that can strongly aid in their learning within medical



When asked if they had a better understanding of the skills required in ophthalmology surgery all 71 students (100%) answered yes. This is visualised in graph 2. This demonstrates the positive impact VR can have on students' understanding of real-life surgical skills which is particularly useful in specialities such as ophthalmology where students may not get the chance to experience a full day in theatre due to space or time constraints.

Students were asked to state the "best bit of the session", 37 comments included the term "simulator" or "machine", and 16 comments mentioned "practical skills". This highlights that students enjoyed the VR simulator itself and were able to connect it to real life surgical skills.

When asked to suggest improvements students highlighted issues with finding the session room and the room size. No criticisms of the use of the VR were mentioned.

Students were also asked if there was any additional comments they would like to make, 29 student (41%) answered with 7 students using the word "enjoy[ed]", and 5 using the word "great".

Conclusion

All students reported that the VR simulator increased their understanding of ophthalmology surgery and that the VR simulator was a useful learning aid. Therefore, VR simulators may be useful in increasing medical students' understanding of ophthalmology.

References

1. Haag-Streit. (n.d). <https://uk.haag-streit.com/products/categories/simulators-training/training-simulators/eyes-direct> (picture 1)

