



Sparking Student Engagement with Immersive VR/AR Experiences

Ryan McKenzie and Kim Froehler - SD5 Southeast Kootenay

OUR WONDER...

How can (will) virtual or augmented reality increase student engagement with curricular and core competencies?



1 - Ryan McKenzie with a student exploring VR using an Oculus Quest at the Design Lab in Cranbrook



2 - Professional Development Day with teachers from Elkford Secondary School



3 - Plant a Tree, Grow a Tree Crossover Growing Innovations project with Will Percy and students from Elkford Secondary School

Tour of Fording River Mine, Elkford to take 360 photos to share with students

What have we learned?

Positives: Student engagement and willingness to participate is high and increased teacher interest

More requests for VR sessions—a wide variety of classes from intermediate to high school classes. Groups have included Communications, Careers, Sciences (biology, environmental), French, Art, Student Services, Youth Care Worker groups, etc.

Negatives: Physical aspects- dizziness, headache, headset can be heavy for some. Some students are afraid of putting on the headset in front of others (found this at middle/high school level), some VR experiences take time to learn the controls, game play, etc.

Device mirroring with the Oculus Quest is troublesome and guiding student to the correct place can be difficult.

No direct teacher control over store and content, but it is manageable.

Student Feedback

Pre-VR Experience:

Student Comments:

“I would like to part of the VR stuff...I am good with computers I just want to be involved with something for once. I won't let you down...if one of my friend's gets to go then I will wish them luck and a very good time. If I do get to go, I will not be a jerk or laugh. I will just say thank you very much...”

“I am really excited for the project because it might make me get better grades, make me more interested in coding, programming, and other digital things...I will follow instructions and handle and take care of the equipment with respect.”

“I will be respectful and listen...I will be able to share what I have learned with my class in a responsible and respectful way...I will always have a good attitude because VR is something I have always been interested in.”

Post Student VR Survey Question: How willing would you be to try VR again?



4 - VR Experience Student Feedback

1	anonymous	The best - I got to go into virtual space. The worst - I felt dizzy
2	anonymous	The Best - I could float through space and grab them. I could put a box in a wall and I flew backwards. The Worst - I felt dizzy
3	anonymous	The best - gave you a good example of microgravity. The worst - the feeling of being on the ISS and not being able to put your feet on solid ground felt unsettling and I don't think I'd want to go there
4	anonymous	The best - feeling like you were really launching off of the blue bars The worst - the narration
5	anonymous	The best - probably just to be in there The worst - one point I felt dizzy
6	anonymous	The best - going up into the hatch and seeing outside - I saw earth and there was some big white thing behind me - kind of looked like you could go into it. There was a door. The worst - floating into walls!
7	anonymous	The best - getting to see the ISS as I'll probably never get to see it in real life The worst - it was feeling weird - very unsettling

5 - ISS Space Station Experience feedback

Surprises?

VR can be used as an effective communication tool –it encourages students to participate in group activities, students accurately describe their environment using descriptive language to solve puzzles, give directions, meet in virtual worlds (we'd like to explore this more)

Communication activity examples: Pictionary, Keep Talking and Nobody Explodes, Wander, etc.

Where are we going?

Delve into VR/AR development –best software to use – time required, hardware required, skills required?

Touchless controls using the Oculus Quest

AR – needs more exploration (science Jig app), making and creating AR experiences

Cospaces for VR development –FIPPA compliancy?

Core Competencies and tracking results...what are we looking for? We'll continue using Microsoft Forms to do informal tracking

More group activities – with mixture of VR and ipads