‘You Get to See for Yourself’

Immersive Media Facilitate Observation and Engagement in Remote Schooling via Student Focus, Control, and Interest

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Thank you to the students and teacher who contributed their time and energy to make this project possible, and to Tanya Manchanda for her invaluable research assistance.
It is not well known in what ways immersive media may impact engagement or learning in a fully remote high school model

- Students in this school reported feeling it is “harder to learn” online, difficulty focusing, lack of time to engage with teachers, peers and materials—aligning with findings from other contexts

- Low levels of engagement in remote schooling put students at risk of dropping out and learning loss

- Immersive media may increase student focus and motivation to learn via a sense of “being there” in a different place

- Engagement is a broad construct with behavioral, emotional, and cognitive elements

How do students experience 360 videos in remote high school classes?

To what extent and in what ways do they find them engaging?

To what extent and in what ways do they relate to challenges they face in remote learning?
360 videos used in class. Left: Aerospace Engineer Tiera Fletcher’s Career (Google). Right: Immerse: Journey into the Deep Sea (The Hydrous)

**Intervention**
- Google Cardboard VR Viewers and 360-degree videos
- 5 students: initial pilot in a one-on-one virtual interview
- All students: whole class activities to watch videos and participate in Zoom breakout discussions and partner activities

**Participants**
- Two engineering classes, 10-12th graders
- Public charter high school (Students: 100% eligible for free/reduced price lunch, 87% Black or Hispanic)
- 16 of 30 students participated in the research (3 female-identifying, 14 whose parents were born outside the U.S.)

**Methods**
- Semi-structured interviews and in-class focus groups recorded and transcribed
- Flexible coding procedure indexed “big picture” themes related to engagement and learning
- Emergent themes reported here as work-in-progress

Students described 360 videos as “more engaging” (Nora) than other remote learning materials.

<table>
<thead>
<tr>
<th>Increased Focus and Attention</th>
<th>“you can’t take your eyes off of it…you have to give your complete attention to it” (Diana)</th>
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<tbody>
<tr>
<td>Sense of Control</td>
<td>It feels “interactive… you can control it, and there’s multiple stuff to look at” (Matthew)</td>
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<td>Enjoyment and Interests</td>
<td>“Seeing the beauty of the ocean [and wildlife]…I was surprised at how engaged I was” (Logan)</td>
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<td>Opportunity to Observe</td>
<td>“I mainly [picked] these videos to observe… I want to observe about these things [we are learning about]” (Jack)</td>
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<td>Notice Details</td>
<td>“gives you more vivid detail of what you think a place is” (Marc)</td>
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<td>Observe Context and “surroundings” (Michael)</td>
<td>“you get to see how many people were [working with Tiera Fletcher] on the team… and all the machines she is using” (Maya)</td>
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<td>Addressing Lack of Experiences due to COVID</td>
<td>“especially now that we can’t [travel], this is like the next best thing.” (Maya)</td>
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Gaining consent, distributing materials, setting up lessons, troubleshooting technology, and ensuring data is collected is more time consuming than in in-person contexts, while synchronous learning time is more limited.

Students’ experiences shine light on mechanisms through which immersive media may address challenges of remote schooling.

Engagement: Some behavioral elements (attention and focus) and some emotional elements (control and interest) of engagement (Fredricks et al., 2004)

Learning: Opportunity for observational learning, which is particularly scarce in remote contexts, via media (Bandura, 2002)

Research will require significant time and resources to better understand learning in remote schooling contexts.

Gaining consent, distributing materials, setting up lessons, troubleshooting technology, and ensuring data is collected is more time consuming than in in-person contexts, while synchronous learning time is more limited.

Further research should more rigorously test mechanisms through which VR influences student engagement and learning outcomes.

Emergent findings about student perceptions reported here, further work should test a framework of engagement and assess learning outcomes.

The sample of students was not representative due to the classes studied and the difficulties of gaining consent and data collection challenges.
