

Gaming (2) Interactivity and Engagement Lab

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“Part A

Please go to Google Expeditions and browse the website until you are fully familiar with it. Then you need to get the kit, which you can either purchase or construct by yourself (they give directions). There is no extra credit given for constructing yourself, so if you are able to purchase the kit, then please do so. Then you will need to create a “field trip” to somewhere in the US or World. you will need to decide where your class will go on a field trip. Then you need to consider the grade level of your class. This is not going to probably be effective for very young children, and so, we would prefer you consider an imaginary class no younger than Middle School, and with no upper age limit or educational limit at the upper end. On the other hand, for those of you who may be Kindergarten teachers or elementary teachers, if you think this kind of thing makes sense for them, we will not deter you, but we prefer at least Middle School but not necessary-up to you. Your outline for the field trip should include a brief description of your class, the purpose of the field trip, where you are going and why that location was chosen, what you hope your class will learn or take away from the experience. Once your outline is assembled, you will have to give consideration to how you will narrate the entire experience beginning to end, understanding that a summary of the experience must be included in a video for Part B.”

(Wilson, 2017)

Class Description

I took several different classes on a Haunted House field trip the week before Halloween. The students ranged in age from seven through ten years old and with disabilities that impact their ability to learn grade-appropriate content. While everyone enjoyed the lesson, the two classes that included nine- and ten-years old verbal students were best able to ask appropriate

questions and to explain what they learned. Sometimes, just getting students to attend to task, remain in their seats, and/or remain awake and alert is a struggle. This lesson appeared to engage all of my students, regardless of the severity of their disabilities. Because some of my students are quite young and/or have seizure conditions, the amount of time each student used the virtual reality (VR) goggles varied from one to five minutes at a time, depending on the age and health of each student. Classes with younger and more medically fragile students passed around the goggles several times so that each student could see the three main sections of this expedition. The older and healthier students could tolerate the three-dimensional goggles long enough to consecutively see all three scenes; my most advanced classes even saw a fourth scene.

Purpose of the Field Trip

My school had a Fall Festival the last day of October. Teachers were invited to weave autumn themes into our lessons to prepare the students. For many of my students, an important autumn theme is Halloween. One of my classes decided to visit a virtual Haunted House, so I adapted that lesson for my other classes. I had to find a [Google Expedition](#) (Google, 2017c) that did not actually include aspects of Halloween that might be too scary or against anyone's religion, so we explored two castles and a historic American Museum *sans* ghosts and goblins, while those who were capable pretended that the buildings were haunted. Some of my classes also experienced a virtual reality experience that was specifically designed to work with [Google Cardboard mobile apps](#) (Google, 2017b).

A major goal for my students is to engage in on-topic discussions (verbally; with a communication board; or through eye contact, facial expressions, and gestures – depending on the communication level of each student). I turned our virtual expedition into a communication

lesson where students had to interact with each other and with staff members. All of my students have expressive communication delays and communication is one of the school's primary focuses.

I added aspects of history to the lesson by also having students look at a governor's home from early colonial America and an old one-room schoolhouse. These two experiences were shorter for most of my classes because the students were less interested in the underlying academic concepts. Many of my students do not understand money or time, but through exposure to these concepts the students' knowledge increases. As with the "Haunted Houses" expedition, the over-riding objective was to encourage the students to increase their appropriate communication interactions.

Where and Why

We visited the "Edinburgh Castle" Google Expedition first because it gave students a chance to learn to look at the goggles in a static and less threatening environment. I toured this castle myself a few years ago, so I was particularly interested in seeing which rooms were in the 3D virtual tour. The first scene we visited was a section of the grounds. The students learned to hold the goggles to their eyes (a few required assistance) and to turn around to look in all directions. This expedition only has one room of the inside of the castle, but each student saw that as well. One student even noticed the Christmas tree that looked funny in a Halloween tour. It was interesting to me that this student was able to see and express what did not belong without any prompting. We pretended that there were ghosts and other Halloween characters in and around the castle. This type of imagination play is great for my students who often have difficulty distinguishing between real and make-believe. We discussed those concepts as we

explored the castle in our pretend Halloween Haunted House.

The second Google Expedition we visited was “Governor’s Faire House” in the “Salem in 1630, Pioneer Village” expedition. This loosely tied into our Halloween theme because of the Salem Witch Trials, but that connection was lost on the majority of my students (and I did not want to focus too much attention on imprisonment and death with such young children). Our imaginations brought in Halloween themes. We discussed how the apartments they live in differ from what they were viewing. We also discussed the differences between how the governor lived and how the poor people of the time lived. Comparisons such as same verses different are included in many of my students’ speech and language individual goals. The more advanced students took language to a higher level and were able to describe why they would rather live in their modern apartments instead of the colonial governor’s cottage (no electricity or central heating, for example).

The third Google Expedition stop along our tour was “Blaise Castle House Museum(’s)” “Victorian Schoolroom.” In particular, we compared the furniture in the old school to the desks, tables, and chairs of today. One of my students asked, “Where are the computers?” Each classroom in my school has at least one computer, many have two computers, and her class has a laptop cart with at least eight laptop computers (old by today’s standards but still basically working). That nine-year-old girl could not imagine a classroom without any computers at all! Here, we again discussed past versus present. For instance, in the past students of all ages might be in the same classroom, while now we do not have young students in the same class as teenagers. In the past the desks and chairs looked much different than today’s desks and chairs, but students could still sit at those desks to do their work. Of course, in the past there were no computers (amazing!). This did not tie in with our Halloween theme, but it related nicely with

the historical aspects of the Edinburgh Castle and the Salem Governor's house and allowed for additional communication experiences. One girl even got up and tried to walk as if she was in the schoolroom herself. I kept a close eye to make sure that she did not hurt herself, but she automatically put out her hands to avoid bumping into obstacles. Several of her classmates also tried to walk around the virtual schoolroom.

My most advanced classes took a self-guided three-dimensional tour of a virtual reality smart phone app that specifically states that it works with Google Cardboard, "[Mansion Tour Inn VR](#)" (Kaan Karasoy, 2017). This was their favorite experience because I let the students explore and discuss any topic that occurred to them. I introduced the mansion by saying that it might be haunted, thus bringing the students back to the Halloween theme. They could move around the mansion-inn by holding the goggles still and looking in the direction of where they wanted to go. The experience even let users climb up a flight of stairs to explore the upper floor and look over a balcony at the lower floor. I did not let anyone get up because this particular experience is more intense, and I did not want anyone to get dizzy and disoriented. The app was designed to prevent students from walking through obstacles or falling over the balcony railing, so students had to learn to avoid objects as they explored.

I only have one phone, so asking and answering questions to the best of their abilities involved students who were not engaged in the virtual reality exploration with the goggles. This kept the party-like atmosphere alive, but the volume was turned down low enough for the students and staff in the room to easily participate in the conversations.

Aspects of My Narration

We have been studying autumn this month. Today, we are taking a pretend (or "virtual,"

for more advanced classes) trip to a haunted house and a few other places. All of you will have a turn looking at these special goggles. I am putting my phone inside and using the iPad to control what the phone sees. You can see the pictures in the phone with the special goggles.

Our first stop is our haunted house. This is Edinburgh castle in Scotland. Look around the outside first. You can pretend that a ghost flies by. Here is an inside room. Be careful, there may be a zombie (or any other Halloween creature) in here. What do you see? What can you pretend to see? Are there really zombies in the castle? Is it fun to make-believe sometimes?

Our second stop is a governor's house in colonial Plymouth, Massachusetts, way back in 1620. This was a very long time ago. Who knows, you might even see a Halloween witch here. You can tell that someone with money lives here because of the fancy rug on the table and the glass in the windows. Some poor people way back then did not even have wood floors. Their houses just had dirt for floors. What can you see here that is different from where you live? Would you rather live in this house or where you live now? Why (for some classes, add why not)?

Now, we are going to look at a Victorian Era schoolhouse. This was over a hundred years ago. That is not as long ago as the ancient castle, or even the colonial governor's house, but it was still way before any of us were born. Look at their desks with the chairs attached. How are these different from our desks and chairs? What else do you see that is different? In some schools at this time, students of all ages are in the same room together, but they are learning different things. How would you feel if you had teenagers in class with you?

(for just a few classes) Last, we are going to look at a special mansion. Who knows, it may even be haunted! I need the headset back so that I can set it up. This mansion is not controlled by the iPad; you get to move around it just by looking at where you want to go and

holding your head still. I want you to stay in your seats for this. It makes many people a little dizzy. Take off the goggles if your head or your stomach starts bothering you. If you want to move left, look left. If you want to move right, look right. If something is in your way, you must go around it. You can even go through the doors to see what's in the other rooms. If you find the stairs, you can go up the stairs by looking at them and tilting your head up a little bit. There is a balcony somewhere that you can find then look over the railing to the room below. You have to tilt your head down to go down the stairs and return to the ground floor. Take a minute or two to explore the mansion. What kind of Halloween items could you find here in your imagination? What would a Halloween party look like in this mansion? Would you like to go to a Halloween party in this mansion? Why or why not?

What Students Learned

The primary thing that the students learned was how to use the virtual reality goggles. I will be using them again at the end of December and I expect to have to provide less instruction in how to use the goggles at that time. The students also used their language skills in a new activity. This could be simple communication skills such as looking at the speaker, touching a picture or answering a yes/no question. For a few students, current communication practice includes answering and asking higher-level questions as well as applying new knowledge to their own situations and evaluating how they would feel in novel situations. I do not expect most of my students to remember the intricacies of our journeys into the past, but I do expect them to improve their receptive and expressive language skills gradually and consistently.

A few students in several different classes did not participate because they have seizures brought on by visual over-stimulation or because they kept closing their eyes when the goggles

got near their faces. These students looked at my iPad as I directed the expeditions. My students with low vision tried on the goggles, but I have no idea if these students saw the three-dimensional images. The students enjoyed the experience and participated with their classmates to the best of their abilities. That class only has one verbal student, so all of their lessons are highly adapted on a regular basis.

I think that my more advanced students will remember the differences between the Victorian era schoolhouse and their modern school. While many of my students cannot afford computers at home, the idea of a school without computers was completely foreign to them. I am not as confident that they will remember the other differences, but some of the students may remember different aspects of our trip into the past.

What the Teacher Learned

Learning, for my students, is a process that requires information and exploration in a wide variety of formats. I now have one new tool that I can use to help the students experience educational content. I think that part of the reason the students were so engaged in the lesson is that it was something new. I would not want to use VR goggles more than once a month with my students. I very rarely show movies because many of the students do not attend to the screen. They look out the window, talk with each other, engage in vocal play (speak to themselves without using real words), or fall asleep. Even when I stop the video every few minutes to ask questions or have the students do an activity, I cannot engage the students as fully as my administration would like. The goggles kept the students more engaged. I still need to do more to engage the students before and after their turns with the goggles, but I am happy with this first experience.

In general, I have difficulty engaging my students in any activity that requires turn taking. The administration often complains that my “Smart Board” lessons have too much down time. The students are passive learners unless it is their turn at the board. Yes, they are watching, listening to, and possibly asking and answering questions about the activity, but they are not consonantly physically involved in the lesson. I much prefer it when the students are engaged in independent work on the computers or on iPads, but some of the students are not yet ready to work independently and I do not have enough assistants to help everyone who requires assistance. There are also sometimes that the concepts that I want to teach are not easily learned through independent work. Most of my students have extreme difficulty departing from the normal routines; I like to create a teaching moment by purposefully changing the routine once every month or two to help my students to learn to become more flexible. I learned that lessons with VR goggles can accomplish many of my objectives, but the old issue of down time or passive learning creeps in.

I was unable to find a pair of goggles that fully met my needs. I settled on using the [Merge](#) goggles with an iPod touch. I liked the three-dimensional effect better with my larger phone if I was using anything other than the cardboard goggles, but my students drop things and I feel like the Merge goggles offered the best protection. I saw double vision with both the [I Am Cardboard](#) goggles and the official [Google Cardboard](#) goggles. I do not know definitely if the double vision difficulties were because of my eyes or an incompatibility with my phone, but I tend to think that the issue is a combination of my phone, the cardboard goggles, and my eyes because some people saw the Google Expedition content fine while other people did not. Nowhere on the [Google Cardboard website](#) (Google, 2017a) does it say that the goggles are compatible with [Google Expedition](#) (Google, 2017c) even though an image of the Google

Cardboard goggles can be seen if you scroll down just a little on the [Google Expedition](#) website (Google, 2017c). The other virtual reality (VR) goggles that I tried were the [Discovery Kids VR goggles](#), the [BlitzWolf VR headset](#), the [StarryBay VR headset](#) and the [BNext VR headset](#). The StarryBay and BNext goggles are not in my video because they were similar to the BlitzWolf goggles; I did not want to extend the length of my video. In an ideal world, I would purchase several sets of goggles because my seven-year-old students have different head sizes and needs than my eleven-year-old students (many of whom are taller than me). I learned that virtual reality goggles are not one size fits all despite some advertisements that claim they work with children and adults, but I am unwilling to invest in additional sets unless I will be using virtual reality experiences in my lessons several times a year.

I have come to believe that using virtual reality in education is still an emerging field. The goggles seem to be quickly improving, with some companies apparently producing new models annually. [Discovery Education](#) (Discovery Education, 2017) has joined [Google Expeditions](#) (Google, 2017c) in offering educational 3D content. I expect that over the next few years both the technology and the educational content will continue to increase in usability and functionality to better provide teachers with a fully integrated tool in our virtual toolbox.

The Hypothetical Middle/High School Class

I know that my school district uses virtual reality lessons with teenagers who have disabilities. Our classes are smaller, and engagement is a constant effort. I think that if I were to use VR in a general education class, I would need to divide students into small groups and have enough goggles for one set per group. Having one set per student is a financial impossibility. In fact, having multiple sets of goggles and mobile devices would not be possible unless I was able

to obtain a grant to fund the supplies. At one time in my teaching career, having a computer in each class was financially prohibitive, but now I am able to write grants that supply computers to the classrooms and my computer lab. Who knows? If the educational community and the funders think that VR is a worthwhile teaching mechanism, it could become available in more schools. It will be interesting to see what transpires over the next ten years.

“Part B

Please create a video of your experience with Google Expeditions, including step by step instructions or summary of how you put the kit together (or purchased it), what the kit contains and why. Your video narration should include the elements of your outline. The video should detail your overall experience with Expeditions and your overall rating and/or opinion about it. Please also add your conclusions about what age or education level Expeditions is best suited for and why. The video should be uploaded to YouTube, and we leave the titling to you. You are free to use any video production capability you have (following last term’s course on Video in Education). Also, any format may be used such as yourself just narrating the experience, possibly handling the head piece etc.

Grading will be based on:

- a. your formulation of the kit (do not forget, you may purchase the kit)
- b. your outline and narrative
- c. content of your field trip
- d. skill level in creating the video and uploading it (technical skills)
- e. content of the video (subjective review of content as to whether helpful or not to others).”

(Wilson, 2017)

My Video

I created the twenty-five-minute video “[Jeanne Stork's Virtual Reality Exploration](#)” (Stork, 2017) reviewing my introductory experience in using virtual reality with my classes. The video has several basic sections and begins with my conclusions, “What We Learned.” Most of my efforts to find the perfect virtual reality goggles to fit the various needs of my students are chronicled beginning at time 02:25. At time mark 10:53, I demonstrate how I set up the system for my students then I show some of what the expeditions looked like beginning at 17:00. I did not actually record this video in three-dimensions, so the viewer will not be able to experience everything that my students saw, but I give a general idea of my lesson highlights.

References

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- Stork, J. (2017). Jeanne Stork's Virtual Reality Exploration. Retrieved December 4, 2017 from <https://youtu.be/sS7WJJYZeOw>

Wilson, G. (2017). Ed Tech 8: Open Instructional Design Lab [New Name: Gaming (2) Interactivity and Engagement Lab]. Retrieved October 9, 2017 from <https://bluemarbleuniversity.com/ed-tech-11-2017-open-instructional-design-lab-september-term/>

Internet URLs for Goggles that I Tested

(ordered as mentioned in this paper)

Merge goggles: <https://mergevr.com>

Merge goggles: https://www.amazon.com/Merge-Goggles-Augmented-Adjustable-Comfortable/dp/B015CD6NVE/ref=sr_1_3?ie=UTF8&qid=1512435724&sr=8-3&keywords=merge+vr+goggles

I Am Cardboard goggles: <https://www.imcardboard.com/cardboard-vr-v2-black.html>

Google Cardboard goggles:

https://store.google.com/product/google_cardboard?utm_source=google-cardboard&utm_medium=MS&utm_campaign=Google_Cardboard

Google Cardboard goggles: https://www.amazon.com/Google-87002822-01-Official-Cardboard/dp/B01L92Z8D6/ref=sr_1_3?ie=UTF8&qid=1512435810&sr=8-3&keywords=google+cardboard

Discovery Kids goggles: https://www.amazon.com/Discovery-Kids-Pair-VR-Goggles/dp/B074CN2JMZ/ref=sr_1_1?ie=UTF8&qid=1511713856&sr=8-1&keywords=discovery+vr+headset

BlitzWolf headset: <https://www.blitzwolf.com/BlitzWolf-Virtual-Reality-3D-Movies-Games-Glasses-Google-Cardboard-Upgraded-Version-for-3.5-to-6.0-inch-Android-Samsung->

[Galaxy-Note,-IOS-iPhone-6-6s-Plus-p-41.html](#)

StarryBay headset: https://www.amazon.com/Ultra-light-Immersive-Virtual-Aspherical-Children/dp/B075FSS6B3/ref=sr_1_6?ie=UTF8&qid=1511713701&sr=8-6&keywords=smart+team+vr+headset

BNext headset: https://www.amazon.com/Headset-Samsung-Android-Virtual-Reality/dp/B01HA72TB8/ref=sr_1_3?ie=UTF8&qid=1511714789&sr=8-3&keywords=bnext+vr+headset

The general Amazon links are provided instead of the Amazon Smile links that I used to make purchases because only members of Amazon Smile can access those links. Amazon Smile is a program whereby Amazon gives a very small percent of sales income to not-for-profit organizations that have registered with Amazon. I am not in any way associated with Amazon.com or Amazon Smile or any other sales site to which I have provided links and I receive absolutely nothing from the use of these links. Merchandising links are provided in case anyone wants additional information about the products that I mentioned in the video and in this paper. They are not an endorsement of those products.