



# No ocean? No problem! VR offers experiences when real life doesn't

By Brian Seymour 2/15/2017

For students in Ohio, going to the beach is no easy outing. Those with means can fly to the east or west coast during summer vacation. But many will never see the ocean up close.

So what's a teacher to do when the curriculum map has you teaching a lesson about the oceans and marine animals for a three-week unit? The answer for Pickerington Local Schools, where I am the director of instructional technology, is virtual reality.

Third-grade teacher Matt Smith used the new technology to take his students on a field trip to the ocean. Using virtual reality headgear and apps, our landlocked students were able to walk on the beach, go snorkeling and experience the inside of a shark cage.

Smith teaches at Tussing Elementary, where 58 percent of students receive free or reduced-price lunch and more than 25 languages are spoken at home. Only one of his 26 students had ever been to the ocean. He knew even before starting the marine unit that the lack of experience would leave students disengaged with the material. So he set out to try something revolutionary.

## Getting started

It was at the Ohio Education Technology Conference where some of our staff first had a chance to play around with Google Cardboard and Expeditions. We were hooked. We purchased about 10 different kinds of VR goggles to test, from cardboard ones to plastic ones, with straps and without.

Some were too heavy for the kids heads and some became grimy really quickly. Since we wanted the goggles to last, our team decided that the ViewMaster VR Goggles were the best fit for students of all ages. Also, most of the VR goggles are only for viewing and very few have a button to interact with the app. That was one of the major reasons we picked the ViewMaster VR Goggles for our kits and purchased enough goggles and iPod touches to create four classroom sets of 28 each. The district invested about \$7,000 per kit.

After we got the hardware, we needed to think about apps. Because the technology is so new, the selection is still limited. Fortunately, new apps are becoming available all the time.

The staff started downloading apps at the district office and played around to see which would apply to the subjects teachers needed to cover. We even enlisted the help of a teacher's teenage son to help determine what was age appropriate.

Meanwhile, Smith was two weeks into covering his nine week module about the ocean. As he began to work through the marine unit, he noticed a lack of engagement. He read books to his students, showed them pictures, but the writing prompts fell flat. Something was still missing.

Then he asked the question, "How many of you have ever been to the ocean?" One hand went up. That was the problem! Most students had no experience with the subject matter. Smith knew he had to make a change, and Vicki Cooper, Tussing Elementary School's instructional coach, had a solution. Cooper showed Smith the VR goggles the district had purchased and after a 20-minute training session, Smith and Cooper decided to use the ViewMaster Ocean app and virtually take the students to the oceans.





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## The lesson

The first time through, Smith and I set up all the goggles while the kids were at lunch. We placed the iPods inside the goggles, and the app was ready to go. When the kids came back, we gave them about three minutes of instruction and then they were off exploring. The three adults in the room were needed only to make sure students stayed in their seats so they wouldn't bump into each other.

The adults walked around the room, asked some questions and prodded the kids to remember to experience all 360 degrees, look up and down, as well as side to side. The great thing about most VR apps is they are not just viewing a picture or video, but the kids can interact with the environment. With the ViewMaster oceans app, there is a little white dot that viewers trigger to learn more information.

As these students ventured under the sea, they went on a treasure hunt to find different parts of the ocean habitat and see an array of marine animals. After getting used to the goggles, we switched to a different experience in that same app. We circulated around the room as the students were in the shark cage or scuba diving.

## Engaged learning

The kids were having so much fun that from the outside, it might have appeared that they were just playing with toys. But in reality, important learning was happening.

"These glasses could be used for fun, but right now the students get to experience something that goes along with our curriculum," Smith said. "We can't go underwater, but we can experience it in virtual reality and look around as if they were there."

Smith and Cooper decided for the second virtual trip to adopt more of a blended learning approach and have half of the students on the VR goggles and half of the students reading a story related to their VR experience. The class was easier to facilitate with only half of the students on the VR goggles at any one time.

Students were able to go snorkeling near the Great Barrier Reef and see fish of all kinds and colors, such as sharks and rays. Some were so immersed in their environment, they screamed as a great white shark swam past their cages. One student said the experience of being under the ocean and surrounded by hungry sharks was "kinda creepy."

But most found it thrilling as they swam down into a sunken pirate ship looking at the habitat that it created. Others went in search of Nemo and Dory along their journey under the ocean.

Before the VR experience, class conversations about the marine world were lacking because the students had never been to the ocean. Afterward, you'd hardly know that they'd never experienced a day at the beach. They excitedly talked about sharks bumping them and described the drop off between the continental slope and shelf. They were far more willing to share ideas and talk about the things they saw.





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## Lasting effects

The 30-minute virtual trip had a lasting effect on most students. They constantly referred back to things they saw, heard or learned during their virtual trips, and their writing was more vivid and detailed.

"These virtual reality glasses allow them to experience the things we are talking about in a more realistic way," Smith said. "Right now, we're learning about why a person would want to explore the sea. Virtual reality allows them to see what would be exciting about going down there."

The kits have since traveled around the district, taking students from the oceans to Mt. Rushmore, outer space and the inside of a cell or the human body. The nice thing about VR is that once you have the equipment, most of the apps are free and more expeditions are being added everyday.

## Closing the achievement gap

Educators around the world are looking for ways to close the achievement gap that exists between privileged students and disadvantaged kids. The gap is widened when some children have more learning opportunities and experiences than others. The virtual reality kits do a fantastic job of allowing students to virtually have experiences they might not have had otherwise.

For those students who do not have the means or ability to go on trips or have unique experiences, I really believe that virtual reality is a positive way to increase students knowledge about the world around them.

*Brian Seymour is the director of instructional technology for Pickerington Local School District in Ohio. He was recently named the ITIP Ohio Outstanding Technology Using Administrator for 2017 and named the Ohio representative for the 2017 Making It Happen award. He is currently leading Pickerington Schools through an edtech transformation with 1:1 devices and the adoption of blended learning pedagogy. Learn more about virtual reality at Pickerington Schools.*

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