

CASE STUDY

World Science Festival Nurtures a Sense of Awe About the World and the Cosmos Using BlueJeans

Children are born curious. They have an insatiable need to explore and discover the world around them. So naturally, they're drawn to science. But their sense of wonder often wanes when they start going to school.

"As kids go through a formal education system, this interest gets beaten out of them through the unrelenting drive to assess what they know, to test their understanding, to kind of cram them through this one-size-fits-all educational experience," says Brian Greene, a world-renowned physicist and professor at Columbia University.

Greene believes that for someone to become an effective educator, they need to reach a child where they're coming from. "That's because the one-size-fits-all approach doesn't work for kids."

With this view in mind, Greene cofounded the World Science Festival in New York with Emmy Award-winning producer Tracy Day. Together, they organize an annual festival that brings together great minds in science and arts to produce content about scientific discoveries. But these are not your typical academic talks held in auditoriums or lecture halls. Content is delivered in the most engaging and creative way possible — featuring a range of novel production formats including theatrical presentations, orchestra works, as well as augmented and virtual reality.

Believing that science education should be thrilling and dynamic, the World Science Festival has developed a way of learning that's very different from a typical classroom experience, where science is often



Industry: Media production

Challenge: The World Science Festival wanted to show children that the wonders of science and the world go beyond what they learn in class.

Solution: It launched a virtual reality learning program and then integrated BlueJeans Meetings to make the experience accessible to many.

Results: The World Science Festival has successfully rolled out its program to more than 40 schools in the United States. More students now experience a more immersive and dynamic way of learning, helping them to appreciate science more deeply. The company is developing new learning experiences to give more people an opportunity to learn the big ideas of science in an immersive way.

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presented as simply a body of facts. “Our goal was to have people experience science as scientists do, as this exciting adventure of trying to gain a deeper understanding of ourselves and the world,” he says.

Bringing Virtual Reality Learning to More Students

This new way of learning came in the form of interactive debates among renowned thinkers, apprenticeships for kids with leading researchers, and explorations of some of the big ideas of science — from Einstein’s theory of relativity to the discovery of black holes. To bring this fresh approach to learning closer to young people, the World Science Festival launched a virtual reality learning experience for schools in partnership with Verizon.

The idea was to let middle schoolers enter different realms such as the galaxy, instead of just learning about them from a teacher or watching visuals on a flat screen. And when the students are in that realm, they can participate in the lifecycle of stars and planets, to make learning about abstract scientific concepts fun and engaging.

“We wanted to show kids that the wonder of the universe and science transcends the details they learn in class,” says Greene. “Yes, you have to learn the ideas in class

in order to grasp them more fully. But ultimately, we’re trying to give insights into some of the most exciting experiences you could imagine.”

Giving Students More Access by Integrating BlueJeans

Greene’s team first rolled out their new learning program using virtual reality headsets. But this limited the number of students who could join because not all schools have access to such headsets.

To ease access, the team integrated BlueJeans Meetings’ features and tools into their learning program using BlueJeans’ software development kit. Their goal was to make the experience available to as many students as possible by letting them join via BlueJeans instead of a virtual reality headset.

“So, by integrating BlueJeans into the experience, we can now bring more people into the virtual world,” says Greene.

Offering an Immersive Experience via BlueJeans

The integration has increased the number of students who can enjoy this new approach to learning, while creating the possibility of offering the experience in

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remote classes. The World Science Festival has rolled out the program to more than 40 schools in the United States and plans to bring it to more schools across the country, together with Verizon.

“It’s worked really well. I’ve been quite impressed with the end result,” says Greene. He adds, though, that during integration, his team wondered whether using a screen via BlueJeans instead of a headset would somehow diminish the virtual reality experience.

“It could have turned out that way, we anticipated it wouldn’t. And indeed, the experience is that it doesn’t. Even though you don’t have the same functionality as using a headset, you can transport yourself in the same way.”

To make the experience more absorbing, Greene’s team uses digital cameras that float in the virtual world and have built-in capacity to find the right angle. BlueJeans’ interface is linked to those cameras so a user can zoom in, pull out, and move around.

Teachers can enrich the experience by using BlueJeans’ whiteboard and annotation tools to share content — and can add a human touch to robot-looking avatars by switching between being on screen live and in virtual reality as an

avatar. Retaining control of their classes is easy as they don’t have to wear a headset.

“The capacity for the individual participating via BlueJeans to have this dynamic perspective — that makes all the difference in the world. It feels that you have an iconic view of the galaxy because of the roaming nature of the virtual cameras,” says Greene.

“The integration’s a pretty close approximation to what it’s like to be there in a virtual reality headset. So, it’s quite effective — as effective as one could have hoped for given the hybrid method of entering that virtual world.”

Learning Science in a Radical Way

Greene hopes that the new learning experience will give children the confidence to learn more fully in the classroom and the motivation to understand scientific concepts more deeply.

“To be able to put on a headset or enter through BlueJeans and find themselves exploring the galaxy, to understand orbital motion and how planetesimals attract all the dust and debris in the solar system to form great planets — all these experiences can give kids a radically different sense of what science is,” says Greene.

His team is now developing more virtual reality experiences. One is on the wonders of gravitational waves, and the other on Einstein's theory of special relativity, namely, what it looks like if one travels at nearly the speed of light.

"We're going to give people a sense of what that is like, and BlueJeans will be integrated into all of those experiences going forward," says Greene. He expects to complete the BlueJeans integration and to kick off the new experiences by the end of 2023.

This time, the World Science Festival is aiming the new offerings at a slightly older demographic — high school students.

But Greene was quick to point out that this kind of experience can be for anybody. "Anything that's relevant to a middle school kid or a high school kid is relevant to an adult. There's really no distinction."

ABOUT THE WORLD SCIENCE FESTIVAL

The World Science Festival is a media production company that aims to cultivate a public informed by science, inspired by its wonder, and convinced of its value. The World Science Festival has an annual live flagship event in New York, which brings together great minds in science to allow the public to immerse themselves in scientific discoveries. The week-long events have collectively attracted more than 3.2 million visitors since 2008, and the World Science Festival's online digital content has now reached a viewership of over 150 million. The company also runs education programs that let participants learn science more deeply through digital content.