How Bentley University uses interactive 360° VR to immerse learners in field experiences

Bentley, a private, not-for-profit university and one of the USA's top business schools, is a place for successful leaders who set out to create positive change in society. Driven by a desire to do business and do good at the same time, Bentley prepares students to be a force for positive change from the classroom to the boardroom. Since engaging in scientific discovery outside the classroom can be an effective teaching tool, the university engages in active research and works with students on exploring anthropogenic activities and their influence on community and ecosystem dynamics.

Challenge

Coastal marine ecosystems (corals, seagrasses, mangroves, etc.) are taking a hit from climate change. If we experience connection to these systems (by understanding the role that humans play, and ways we can mitigate potential effects on these ecosystems) — it makes it just a little easier to want to take action. Students need to learn about underwater life, but until recently they had to do with traditional methods like presentations. As it is too expensive and not sustainable to visit marine environments in person, a new method was needed.

Solution

Most teachers were not open to new ways of learning, but certain curriculums would achieve better results if portrayed in a more immersive and engaging way. With VR, students get to experience underwater worlds first-hand in a fun and interactive way, that improves retention.

In partnership with Florida International University and Louisiana Universities Marine Consortium (LUMCON), Bentley developed groundbreaking, immersive 360° virtual reality experiences designed to immerse learners in field experiences. While these videos are accessible to learners of any age, they are targeted towards those in high school or college (designed for STEAM and non-STEAM majors alike).

The Coastal Marine Ecoystem Experience is funded by the National Science Foundation and provides a series of immersive VR experiences using 360° video focused on understanding coastal ecosystems and their threats.

Through these videos, learners can explore subtropical seagrasses, mangrove and hard-bottom ecosystems while learning why these ecosystems are crucial for the health of our planet, and for the services they provide to our coastal communities.

Interactive 360° videos were used instead of animation for an improved feeling of realism. The immersive videos can be played for free on either VR headsets or any computer, laptop, tablet or smartphone with an internet browser — ensuring the ecosystem experience is as accessible as possible for everyone.

The team recorded the videos themselves in South Florida and the Bahamas and used Warp VR to easily convert these into immersive VR experiences.

"Warp VR is exactly what we were looking for in an interactive 360° VR platform. It's easy to work with, the flow editor is extremely helpful and useful, and it allows us to add functionality to the videos that we otherwise wouldn't be able to achieve. The support we've received from Warp VR has been incredible and second to none. From setting up the platform to begin with, to walking us through various scenarios, to answering every question I've asked or concern I've had, to setting up follow up meetings and calls, they've been there with us every step of the way."

Steve Salina, Principal Instructional and Research Media Production and Infrastructure Engineer, Bentley

Results

The ecosystem experience has been implemented into several classes already (at Florida University, LUMCON, and others). Experiences from the first classes were positive, with students evaluating the experience as (a lot) more immersive and engaging than traditional learning methods. Based on further results from the classes (in terms of perceived quality, feelings, and retention), the team plans to extend the experience with virtual tours, add a VR lab to the Bentley Academic Technology Center (with 20-30 VR headsets, turning chairs, manuals, etc.), and apply for a new grant to further explore the use of VR as a replacement for field-based courses.