



Diversity & Inclusion

Breaking Down Barriers With Virtual Reality

The Office of Diversity and Inclusion at Embry-Riddle Aeronautical University (ERAU) is setting the bar high as it works towards accomplishing the mission of challenging students' abilities to adapt to diverse, inclusive environments, engage in creative, productive and meaningful activities, and understand how their behaviors impact others.



Students are leading the charge in studying, working, and living abroad learning first-hand how to bridge inevitable cultural and social gaps. One world-class university has chosen to break down barriers by integrating virtual reality within its core curriculum. Through their virtual simulation lab, students are immersed in real-world environments to develop, practice, and improve upon their interpersonal skills. The goal is to provide a place where 3D learning and simulated immersive environments bring diverse communities alive!



Bold Innovation at Embry Riddle Aeronautical University

In 2013, the Office of Diversity and Inclusion at ERAU, created a virtual reality simulation lab called Pre-Board. Dr. Robin Roberts put forth an innovative initiative to build a virtual reality lab after realizing that many of the University's Global Engagement Students (Study Abroad) were experiencing severe culture shock. ERAU immersed students in simulated, foreign environments, thereby reducing their fears resulting in increased confidence.

Over the past two years, Pre-Board's applications have evolved and expanded under the direction of Kenneth Hunt, Director the Office of Diversity and Inclusion at ERAU. Embry-Riddle students and faculty are now able to practice and implement core skills in preparation for becoming professionals after graduation. According to Mr. Hunt, *"I have been fortunate enough to be involved in the creation and expansion of the VR lab and its effect campus wide. Participation has resulted in a stronger bond between students, faculty and staff who have shared the experience together".*

To date, the Office of Diversity and Inclusion technologists, have created 9 simulated environments.

These are 4 of their most outstanding simulations to date:



Study Abroad Simulation—
Collaborating with the Global Engagement Office, students experience real world scenarios in foreign countries via an immersive VR environment.



Simulated Job Interviews—
Using immersive simulation in 3D, they integrate human factors to enable the user to experience what a real life interview might feel like.



Conference Simulation—
Offers students, faculty, and staff an opportunity to speak in front of large audiences for the purpose of presenting individual or group research and projects.



NextGen—
Contracting with the FAA and using Pre-Board, technologists build various VR simulation modules to help students, researchers, industry and government stakeholders visualize the benefits to be gained through a modernized air traffic system.

VR Completes The Vision

The Office of Diversity and Inclusions realizes that traditional classroom environments may be enhanced with a sense of reality and depth by the use of virtual reality simulations.

ERAU's engineering and computer science students utilized Worldviz products to build the Pre-Board lab. WorldViz stood out because its products were both economically and technologically better than any other system they researched. Not only is Vizard™ based on Python programming, which syncs up perfectly with what the student programmers could do, it is also

compatible with existing modeling software (3DS Max). The student's head position is tracked using a motion tracking system called Precision Position Tracking (PPT). This ensures the most realistic simulation experience possible, garnering accurate and genuine interactions and reactions. According to their lead programmer, Dynamite Obinna, *"The process of planning and implementing a project here has been very easy. This is because everyone involved in one aspect or another is passionate about what we are able to create using Vizard."*

Highlighting Pre-Board's Successes

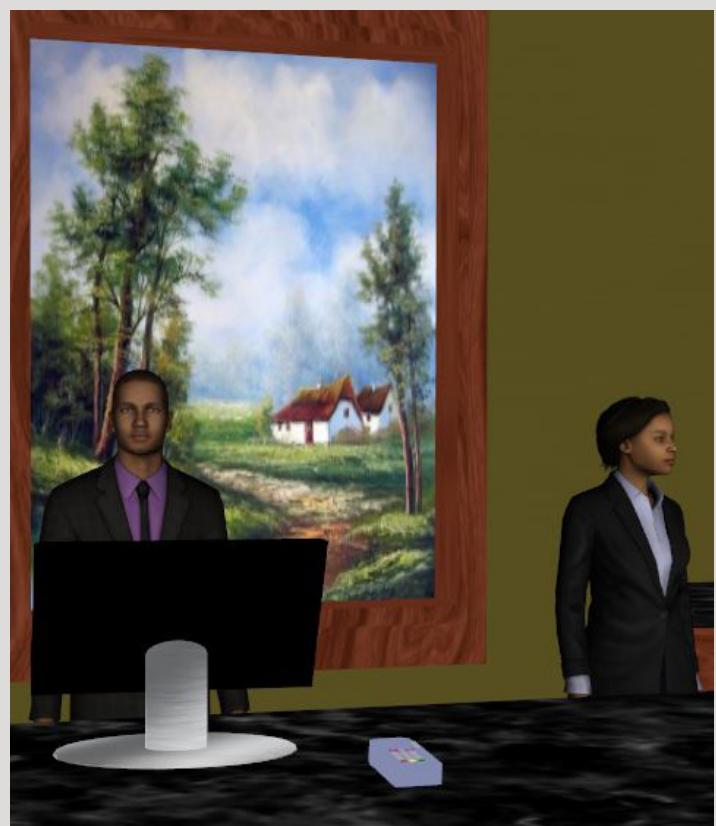
The Office of Diversity and Inclusion has had considerable success in its integration of virtual reality simulation. The Office built a simulated German environment where students encounter a fast food restaurant and train station, check into a hotel, drift through a shop where they can pick up objects, or visit a park or museum.

They also experience avatars who speak to them in German. Students learn how to have a conversation and also how to make the correct change using foreign currency. Additionally, the Office created a simulated environment for England, which includes a cathedral, a pub, a museum, etc.

Another area where they've had ongoing success is with their Interview Simulations. The key to feeling presence and immersion is in the details: the placement of plants, a large window, a clock, a phone ringing, or a person coughing.

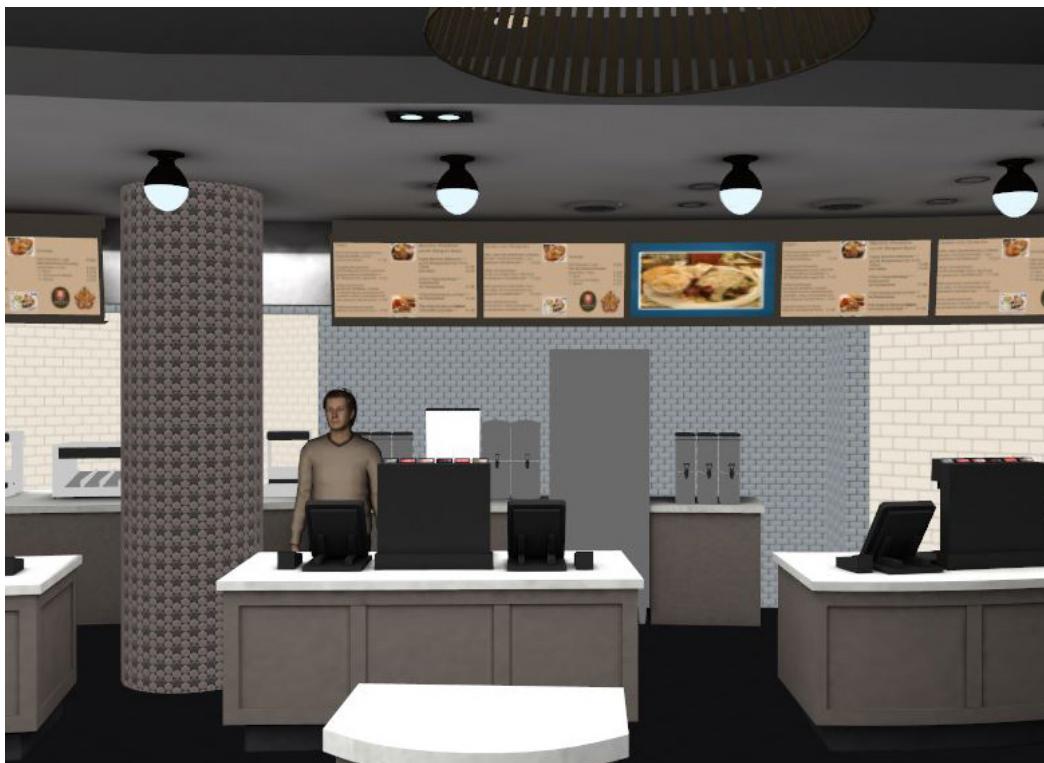
Using a spatialized sound system, voices of the avatars are consistent with their location in the environment, e.g., if the avatar is sitting on the left side of the room in the simulation, the voice of the avatar will come from the left side of the lab. Avatars engage the student with questions, which are both straightforward and sometimes very challenging.

As a result of state of the art rendering and acoustics, the room comes to life! Collab rating with the University's Office of Career Services, interview questions can be assembled for any of the simulations.



The Gold Standard Model

As the workplace becomes increasingly diverse, the need to prepare students for any number of situations has never been more apparent. The use VR is a testament to the University's inventive student population and the potential for WorldViz VR to drive innovation across a broad range of technical applications, impacting many fields such as: sales, compliance, and soft skills training. As a model for universities interested in following suit, immersive "real world" environments have been highly effective at ERAU, receiving campus-wide praise, *"Visitors who come to our lab are always blown away by what they see and experience. WorldViz certainly provided the value and quality we were expecting."* (Dynamite Obinna)



Relationship/ Customer Service

When asked about the relationship between WorldViz and Embry-Riddle's HUB, Dynamite Obinna explains, *"Our relationship has been great! Their representatives are always just a call or email away when support is needed. What's more, they know us individually by name, which is rare. We absolutely cherish our long standing relationship."*

About WorldViz

WorldViz is the industry leader in immersion-ready virtual reality (VR) solutions. WorldViz's patent-pending interactive visualization and simulation technologies are deployed across 1500+ Fortune 500 companies, academic institutions and government agencies.

WorldViz's core products are Vizard, the premier development platform for professional VR application design, and VizMove, the world's only enterprise-class VR software and hardware solution. WorldViz also offers PPT, a high-precision wide-area motion tracking system, as well as professional consulting and content creation services. WorldViz technology enables users to replace physical processes with immersive virtual methods. Applications range from design visualization and industrial training to interactive education and scientific research.

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