

THE VIRTUAL WEEK

Jose stood by a broad window in his shared apartment building. The trees outside across the street were receiving the yellow rays of the sun. *I would like to study at an open air place today*, Jose thought as he stretched and took a sip of his coffee. After showering and making another pot of coffee, Jose walked to the window, pushed it open, and stuck his arm out into the sunshine. The warmth of the sun made the hair on his arm stand up, it was too nice outside to ride a bus to the university only to sit inside another building for the whole day, he decided. He shoved his equipment into his backpack with his headphones, slipped on his sneakers, and peeked his head into Roberto's room, who lived with him at the apartment. Roberto was laying in bed, headphones on, eyes closed, snoring. Not surprising, Jose thought and closed the door quietly. He moved on to the next room and found Karl, his other other roommate, upright, working on a project for his mathematics course. □

"Hey man, I'm going to go to the park to take my class, do you want to join?"

"Yeah, maybe later, I'm finishing up something right now, but text me where you are so I can find you if I come," Karl replied, not looking up from his tablet.

"Good deal."

Jose poured some coffee into a travel mug and ran down seven flights of stairs and out the door of his building. The sun had fully emerged now and was lighting up the sidewalks and roads, and the clouds were drifting away to the south.

He crossed the street, entered the Millenium park, and began to follow the sidewalk toward the center of the park, where there was a small pond and comfortable seats for everyone. However, when he reached the pond area, he found almost all seats occupied by students from universities around the city who had all had the same idea as him and were attending their classes in the sunshine. He continued to walk, searching for a nice patch of ground where he could lounge in the grass during his class. Finally, he found a spot on a small hill and he sat himself where he could look out on the rest of the park as he took his class.

He pulled a special paper out of his backpack, this was digital paper, thin as a normal sheet of paper but able to display all kinds of digital content, then he selected a lecture from his Environmental Protection and Sustainability course. Jose preferred sometimes to learn this way, sitting in the grass, surrounded by trees that towered far above his head, while learning about protecting and sustaining the environment. Here he could also pause the lecture if he wanted to reflect practically about what was being spoken, and if he had questions, he could ask for assistance at any moment by going to the virtual assistance center accessible to all students at any time. Each university had virtual instructors developed with artificial intelligence that were able to solve a lot of students questions, and in case of more specialized assistance, a student could always reach out to a professor that would help them out.

A hologram of his instructor popped up from his paper, and as the professor began to lecture, Jose put on his headphones so that he would not disturb other students that studied near him. "Today's course will be focused on civilization and human history, and how choices

that people have made in the past have significantly affected their own chances of survival because of the ways they have drastically damaged the environment around them..." As the instructor continued to lecture, Jose moved the hologram to the side of the tablet and began to skim the lecture notes and images provided that corresponded with the topic. "Think about the development of public transport - and the means of transport that you take daily!" the instructor suddenly exclaimed and continued to discuss the transportation industry's impact on the environment.

As he listened to the professor, his mind drifted to a project he had been working on with other classmates and was almost ready to be presented next Friday. The project was for EduX 2049, a worldwide conference held annually whose goal was to show and explore different projects that students from universities all over the world had built. In each university, a group of professors guided the students that chose to participate through the process of designing and implementation and advised them on their progress. Jose and his classmates had chosen the topic of his program months before, but the closer that he came to the due date, the more anxious he began to feel.

Jose woke up early on Tuesday morning and thought about what he had to accomplish that day. He had agreed to meet two of his classmates at the city zoo to take a class together on Animal Behavior, but he still had some work to complete on his project for the EduX conference on Friday. Within an hour, he was sprinting out the door to catch the bus that had just pulled up outside his apartment that went past the zoo.

When he arrived, he found his classmates waiting outside for him, and they all entered together to begin their class at the same time. They each pulled out their 3D VR headset, a device of widespread use in academic institutions for higher learning. The headsets allowed students to see and explore more information as they interacted with 3D virtual content they came across in their path, according to a preloaded database of information.

As they walked around the zoo and stopped by stations of different animal species, general information about the species and more specific facts concerning the genetics, breeding and behavior of the animals displayed in front of their eyes so that they could learn as they interacted with the learning subject. The headsets included a built-in camera that allowed users to see the surroundings as if they were not using the headsets, so Jose and his classmates could easily walk throughout the zoo wearing their 3D headset, reading and learning information about each species.

Back at his apartment he joined with his project's classmates to finish up some details of the project that they were presenting on Friday. They were hoping that his project would be able to meet all the expectations of the attendees.

Wednesday came and Jose woke up with a desire to hike and learn about the environment. So he decided he would go hiking and take a class on Environmental Energy Resources at the same time. He got everything ready, he prepared his equipment and off he went to a nearby hiking trail where he began to trek on the path and as he was walking he put on his 3D VR headset for getting ready for a game-like virtual scenario.

There were different places in the city where you could do this, as universities had created different virtual scenarios for different locations in the city, so Jose could choose anywhere he liked to go and explore them. The game consisted on overcoming certain challenges along the path while finding certain tokens hidden along the way, which could be under a rock or a cave, or hidden inside trees, or moving along with an animal, and for acquiring them you needed to be close enough to reveal the token and get it. Jose was easily able to move along with his 3D VR headset on, as it happened at the zoo, because the built-in cameras on his headset allowed him to clearly see the surroundings.

The challenges were tailored according to the subject chosen by students so as to learn as they solve them. Each challenge was designed with specific information and relevant problems to solve about a given topic, and according to the solution given by the student a certain score is accrued to his general score. The game finishes after a certain amount of challenges have been completed and the student will get an overall score at the end displaying the strengths and weaknesses of his learning.

So Jose set up everything, chose the game mode and difficulty level he wanted to complete and began to tackle all the challenges presented to him. He got engaged solving the challenges and exploring all over the place to find the tokens and was eventually able to finish the game, learning about the different energy resources that are available in the environment and how they are used for human civilization. When he finished the game he also thought about the project he had developed with his classmates for the EduConX 2049 conference, would participants also get engaged with it? Would participants find it interesting?

On Thursday morning Jose went to a class called Geoscience, the Earth and its Resources where nearly 300 hundreds students attended a lecture by professor Williams. Students enjoyed this class because of its interactive experience. As professor Williams explained the content, students would have some time to answer questions on a response pad and they accumulated a certain score according to the quality of their answers, which are evaluated by an artificial intelligence instructor. Then they could see their score on a class leader board and see how they were doing against other students in real time.

The classroom was also designed for interactivity. On the walls, the roof and the floor were interactive screens that would display all types of data and could be set to display any kind of scenario so students could visualize and manipulate things in different ways, whether by being outsiders or insiders of a particular setting.

During the lecture, Professor Williams set the classroom scenario for students to decode a puzzle at the end of the lecture. She used music, images, videos, 3D effects and her words to give hints for students to solve the puzzle. Students needed to focus on all these elements so that at the end of the lecture they could provide their solutions to the puzzle. Each of these puzzles were part of a virtual game scenario where students had to give their best to advance as far as they could get as they completed all the challenges. This game was meticulously designed for students to solve problems and apply different strategies, collaboration and creativity, and it would finish at the end of the semester. Students liked this because they felt they were playing against each other, gathering up clues all along the lectures to eventually solve many riddles at the end and be the winners of this game-like feature of the course, and as

they focused they would also learn a lot because all the clues were related to the topic they were studying. They could also form alliances or establish agreements with other students to cooperate and get help to solve each puzzle. At the end of the course the students who managed to advance farthest in the game would receive a bonus for their final grades.

The night before presentation Jose and his classmates gathered again to try out the project and check that everything was working according to their design and specifications. The test went smoothly, and they were ready and eager to participate at the EduX 2049 Conference the next day.

Friday arrived, and everyone was ready to present their project on the EduX 2049 conference. Jose was excited for everyone to see what he and his partners had been working on. For months, they had been working hard together to create a virtual learning scenario where children from all over the world would be able to receive high quality of education, for they thought that education was a right to all people, and that it should not depend on whether you could pay for it or not. They hoped that their model would be replicated and improved by other students all around the world.

People from all over the world attended the conference, although they didn't need to be physically present because they could interact with the virtual scenarios by putting on their 3D virtual reality equipment from anywhere in the world. So he and his partners presented their idea to the audience and then let everyone try it.

Every person who was a participant in this virtual scenario was able to engage and explore different settings and levels for learning about environmental conservation and earth sustainability, which was the topic Jose and his classmates had been working on, and as participants went through the different stages of the virtual scenario they also felt privileged that anyone around the world could join and have free access to education so that everyone would learn how to take care of the planet and create local solutions for local problems, by improving their knowledge of the world, by training their skills to have better performance in jobs and contribute to build a more sustainable world. Jose and his classmate were very excited to see their project receiving positive reviews from participants all over the world and were glad they had worked hard on it for others to learn.

Other students also brought all kinds of projects, some brought virtual scenarios of what it would be like if humans started to live in other planets like mars, or planets in distant galaxies, or deep down in the ocean, or even proposing scenarios for what it would look like to be inside black holes. Others brought scenarios for participants to play the role of an ancient world character so that students could learn about history and human sciences, etc.

Everyone participated actively with each project that students brought for the EduX 2049 Conference and got inspired to keep exploring and developing ideas for education and human progress for the future.