Erzin Vocational and Technical Anatolian High School
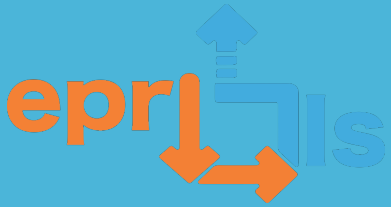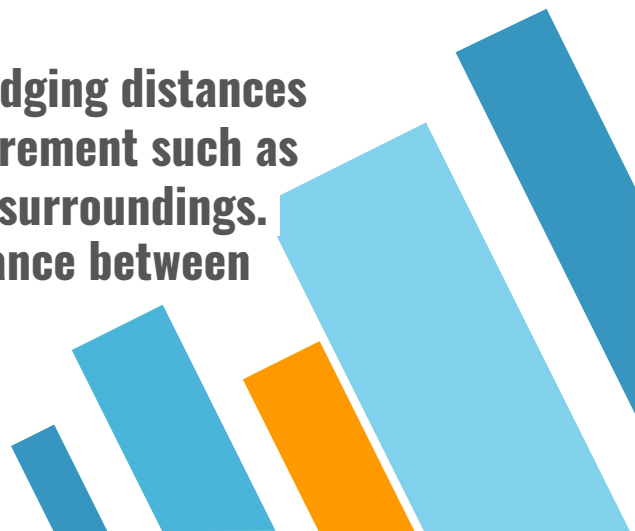
The educational landscape is shifting and Augmented Reality (AR) is gaining traction as a way to engage students, even though it took some time to be accepted as a disruptive technology in the market.

According to Analytics Insight,today, thanks to lower prices of headsets and social distancing, this discipline is more likely to gather momentum, especially in the post-COVID-19 world. The same article provides an overview of some of the most relevant AR-based education apps, including the following interesting ones:
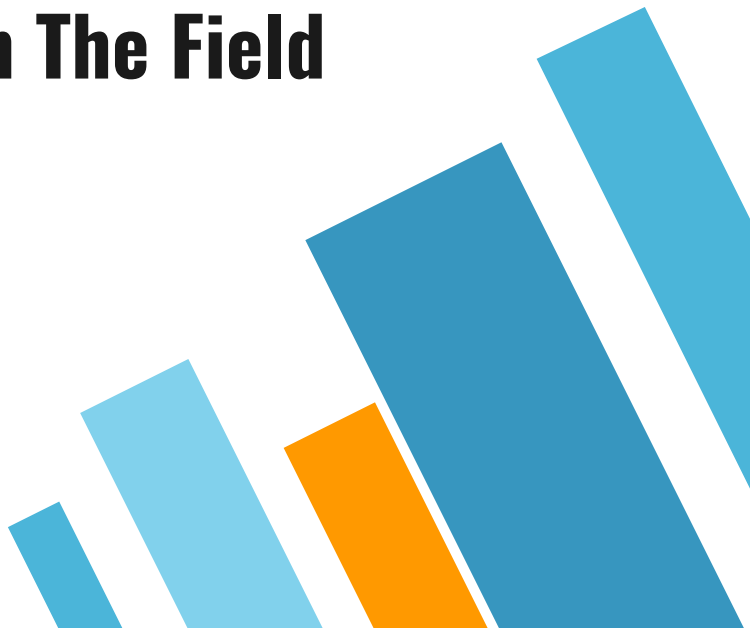
Google Expeditions offers a mix between AR and VR and allows a teacher to guide students through 360° scenes and 3D objects, pointing out interesting sites and artifacts along the way. Expeditions aims to inspire students' creativity and imagination by helping them visualise information in a new way.

GeoGoggle helps students master geography skills and in judging distances to specific destinations. They can learn geographical measurement such as latitude and longitude by applying GeoGoggle to real-world surroundings. Furthermore, it can teach to calculate altitude and the distance between two points using a 3D compass.

Understanding The Current Demand For AR-Based Education And Top Apps In The Field

In a swiftly changing world, where cities expand their territory into empty spaces, technology too evolves in a blink of an eye. However, for augmented reality (AR), it took a huge amount of time to be accepted as a disruptive technology in the market. Today, thanks to lower prices of headsets, social distancing, this discipline are more likely to gain traction, especially in the post-COVID-19 world. As students around the world are busy getting educated from online classes, AR can enhance their learning experience by blurring the line between physical and digital worlds.

For instance: students can learn about ancient Egypt by virtually visiting the world, maybe shake hands with the pharaohs of the past, and learn about their culture. They do not have to wonder about the sound a tiger makes when they can hear it roar at the comfort of their homes. Hence AR promises will bring more registrations for distance learning at lower costs and prevent them from missing out on the benefits of learning in a collaborative environment. Here are some of the apps; teachers can use to bring AR-based education experience for the students.

1. Google Expeditions: This offers a mix between AR and VR and allows a teacher to guide students through 360° scenes and 3D objects, pointing out interesting sites and artifacts along the way. This augmented reality app is available for IOS and Android. After downloading the free Expeditions AR app, one can take tours from the Smithsonian or view a life-sized human skeleton on a classroom desk by choosing from hundreds of such courses.

2. FETCH! Lunch Rush: Developed by PBS KIDS, this is an AR app that can be used to teach math skills to elementary students through the use of visualization. Designed in 3D, the app uses a smartphone camera to place graphics on one's camera over real-world surroundings. The app then teaches elementary students to add and subtract using real-world scenarios which allow for visualization while solving math problems. It is available for iPhone, iPod Touch and iPad and for free at the App Store.

3. Catchy Words AR: It is an AR-based word game designed for elementary school student who will enjoy this free word game that combines learning with movement. Without touching the screen, students walk around "catching" letters with their devices to solve word puzzles. This app will be immensely helpful to kids who have difficulty in learning words.

4. Anatomy 4D: This is best suitable for medical students. From the skeletal system to the muscular and digestive systems, those interested in anatomy will have information about various human systems on their fingertips. By scanning printed targets, the application shows 3D models of a human body and allows to interact with it. Users may change and adjust any part of the human body, learn more about parts, joints, functions etc. It is available for iPhone and Android.

5. GeoGoggle: This app, helps students master geography skills and in judging distances to specific destinations. They can learn geographical measurement such as latitude and longitude by applying GeoGoggle to real-world surroundings. Further, it can teach to calculate altitude and the distance between two points using a 3D compass.

6. CoSpaces Edu: This allows students to build their 3D creations out of a library of content, create infographics animate the creations with code, and and tell stories through virtual exhibits and tours. Students can also project their virtual creations onto any surface in the real world in AR. The app promises to improve digital literacy skills, enhance creativity, and promote creative collaboration.

7. EKID: It is a beautifully designed AR app that enables children up to 8 years of age to explore the world around them by using augmented flash cards. This is a smart educational tool that is compliant with the COPPA (Children's Online Privacy Protection) rule and is designed to be used at home or within the classroom. The application explores animals, mammals, creatures, insects and various modes of transport. The application is free from in-app adverts. However, there are in-app purchases for further flashcard content. It is available for iPhone and iPad.

8. Freedom Stories: This was developed by Harriet Tubman Institute for Research on the Global Migrations of African Peoples and the Augmented Reality Lab York University, Toronto. Teachers can use this AR app to teach students about the historical incidents of bygone times.

9. Elements 4D: Made by DAQRI, this AR app lets students combine different elements to see chemistry in action. The app features a collection of 4D cubes that can be prepared by printing the special element blocks on a letter-sized paper and then, cutting them out and folding them. The blocks can then be held in front of any device camera to see the elements in augmented reality. Students can use the cubes to learn about 36 different elements, along with detailed information such as atomic weight, fun facts and trivia about each.

10.Exoplanet: It is a fun interactive tool that helps students discover planets. It also features a sky map and a high-quality visual model of our Solar System. The developers of this application update it quite regularly. Thus, the information and facts presented in it remain relevant. This is much similar to Google

VR: The Perfect Medium For Scenario-Based Learning

Scenario-based learning in VR training combines two powerful and effective Instructional Design techniques: practice that's as close to the real world as possible and storytelling. Scenarios allow us to move beyond knowledge transfer into judgment-making, critical thinking, and decision-making, all of which can lead to better application of what's learned back on the job.

As technology-enabled learning has advanced, more and more tools have become available to Instructional Designers to create scenario-based learning.

VR training is a perfect medium for scenario-based learning for many reasons:

- **Immersion**

When learners put on a headset, they are transported to a virtual world in which the scenario takes place. Unlike in eLearning and other modalities, they are completely focused on the experience and scenario they are in, capturing their full attention.

- **Presence**

Beyond simply attention, there's an emotional component to VR— learners *feel* they are in the scenario. Research is showing the identification and feeling of presence within VR are evidenced in the brain, which can help lead to feelings of empathy.Combined with authentic and relatable storytelling, this makes VR training a powerful tool for creating an emotional connection with the learner, which helps increase retention.

▪ **Data tracking and feedback**

What if you could track learners' body movements, voice tone, and emotion in scenario-based learning? [It's all possible with VR training](#)**. Learners can get real-time feedback on their choices and actions within the scenario-based learning in VR.**

▪ **Multi-learner experiences**

As we look for better alternatives to in-person training, VR training again comes into focus, allowing for multiple learners to share the same virtual world experience. And, instructors can take control and trigger changes to the scenario in real time, keeping learners on their toes!

Let's take a look at 3 examples of how different organizations and industries have implemented scenario-based learning in VR training programs to achieve very different objectives.

1. Customer Service VR Training Using Learning Scenarios

The key to hospitality and exceptional service is having empathy for guests, and a global travel company had tried to teach empathy with traditional role plays for years. It wasn't working. Working together, we found a new way to elicit understanding and build empathy—with VR.

We could have simply converted the role play from face-to-face to within VR; the technology exists to do so. But we discovered a better way: have the learner actually experience what it's like to be a guest.

2. Education-Based Marketing VR Training For Sales Associates Using Scenarios

Car and truck technology does not necessarily evoke a memorable and emotional connection in sales associates. Traditionally, introduction to new products happens via a sales sheet—a static paper with a list of features, benefits, and target customer profiles.

Working with a top player in the automotive space, we created a VR program for a new product launch that brings the technology and specs to life. Learners enter a virtual world: a vast expanse of road that's wet from recent rain. Three trucks come barreling toward them—will they stop in time? One will, showcasing the amazing stopping power of this truck!

Sellers have now experienced this critical feature in a way they never could by

3. Safety VR Training Using Scenario-Based Learning In Healthcare

Healthcare workers face dangerous situations and aggressive behavior every day, and critical skills are needed to de-escalate these situations. A healthcare worker's words, tone of voice, body language, and facial expressions can impact the way a person under stress will respond. But how can you train someone to be in a dangerous situation without actually placing them in danger?

You need a training solution that creates an emotional impact, induces empathy, and encourages a behavioral shift in how a person communicates and presents themselves.

Not A One-Size-Fits-All Solution

The potential for VR training is seemingly limitless. As these 3 use cases demonstrate, there is an enormous breadth of learning experiences that VR can effectively support. It's important to remember that each organization was facing industry- and learner-specific training challenges. In each case, VR training proved to be a viable solution, enabling L&D pioneers at these organizations to create something new and uniquely effective for their audiences.

Thanks For Your Attention...