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Project 2022-2-RO01-KA210-VET-000100783

Virtual Reality in foreign languages for Special Education Needs Students in VET schools

COLLECTION OF PRACTICES

ACTIVITY A6. HANDBOOK "VR IN THE FOREIGN LANGUAGE CLASSROOM"

IMPLEMENTED BY:

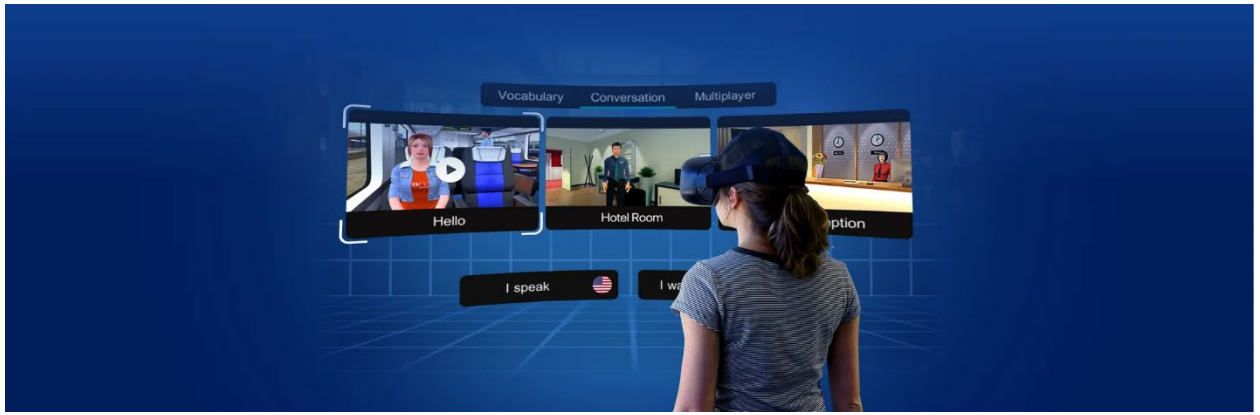
CREATIVE PROJECTS AND EVENTS ROMANIA

UN/LAB ITALY

Bucharest

1.Mondly VR

PRACTICE LANGUAGES IN VIRTUAL REALITY



DESCRIPTION:

Mondly is a company that produces educational language learning software. The freemium platform developed by Mondly includes a website and apps with free and paid courses in 41 foreign languages.

Named App of the Year by Facebook and Best New App by Apple, Mondly currently has over 110 million users worldwide.

The platform helps you learn foreign languages quickly and efficiently, using short lessons, games, real-time conversations and state-of-the-art technologies such as voice recognition. At the same time, the platform offers a series of lessons in virtual or augmented reality.

Mondly was the first language app to use speech recognition, allowing its users to practice conversation by interacting with chatbots. The VR version of the app has been available since 2017.

In a typical Mondly lesson, you'll select a setting, such as a restaurant or hotel reception area, where you'll interact with digital avatar chatbots. This allows you to practice skills like ordering in a restaurant, booking a hotel room and so on.

Mondly's biggest strength is that it offers a wide range of languages - 41 languages currently: English, Spanish, German, French, Italian, Portuguese, Russian, Dutch, Japanese, Chinese and many more.

It is currently the only VR language app that offers Turkish and Hindi for example. The downside to this is that there isn't much differentiation in the settings - you're visiting the exact same restaurant scene no matter what language you're learning.

Mondly can be used to practice useful skills like booking a hotel reservation or buying a train ticket. Mondly VR is for solo play only, so one can chat with the chatbot avatars.

Mondly VR is **the first language learning experience with chatbot and speech recognition** in the world.

The new VR app combines voice chatbot technology with speech recognition in virtual reality to create a new way to learn a new language.

- ✓ **Immersive**
- ✓ The user can experience the most advanced way to speak new languages without having to travel. He can make new friends in Barcelona, check into a hotel in Tokyo and order local food in a German.

- ✓ **Fun&Easy to use:** The user can explore new worlds and learn new languages from the comfort of his home. He just puts his headset on and enjoys the experience. The user will never struggle for the right words ever again.

- ✓ **Inovativ:** The user can step into a new, virtual world and practice conversations in realistic scenarios. He gets instant feedback on his pronunciation in virtual reality and builds the confidence to speak new languages in real life.

WEBSITE:

https://www.mondly.com/vr

2. FORDYS-VAR

FORDYS-VAR project, contract no. 2018-1-ES01-KA201-050659,
Co-funded by the ERASMUS+ Programme of the European Comission

DESCRIPTION:

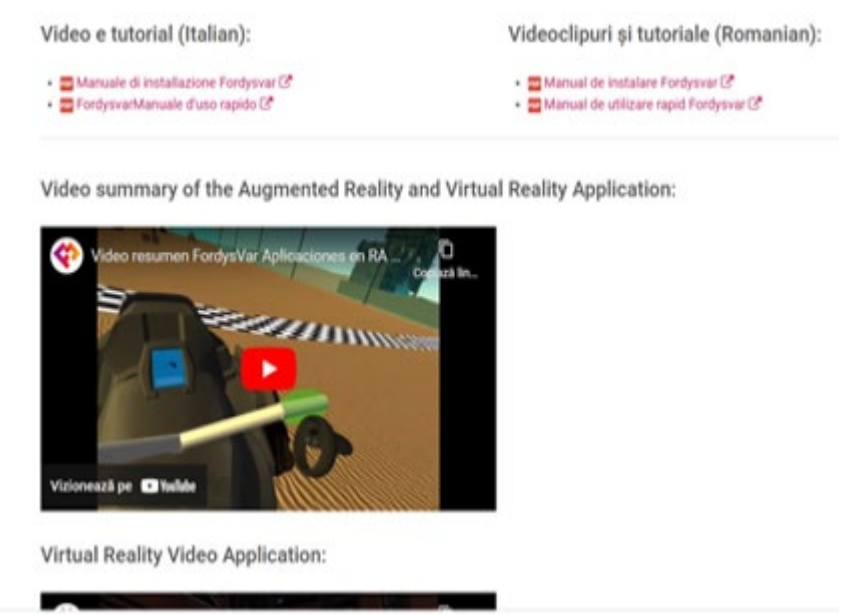
The Bucharest Association for Dyslexic Children is a non-governmental organization from Romania, founded in 1994, by a group of parents from Bucharest who faced problems related to their children's schooling in the state and private educational system. The need of these parents to offer their children a real chance for learning and training, so that they can benefit from a normal life, led to the establishment of this association, which, from its establishment until now, has carried out assistance and social solidarity activities, civil, cultural, educational, training and information related to the problems related to dyslexia.

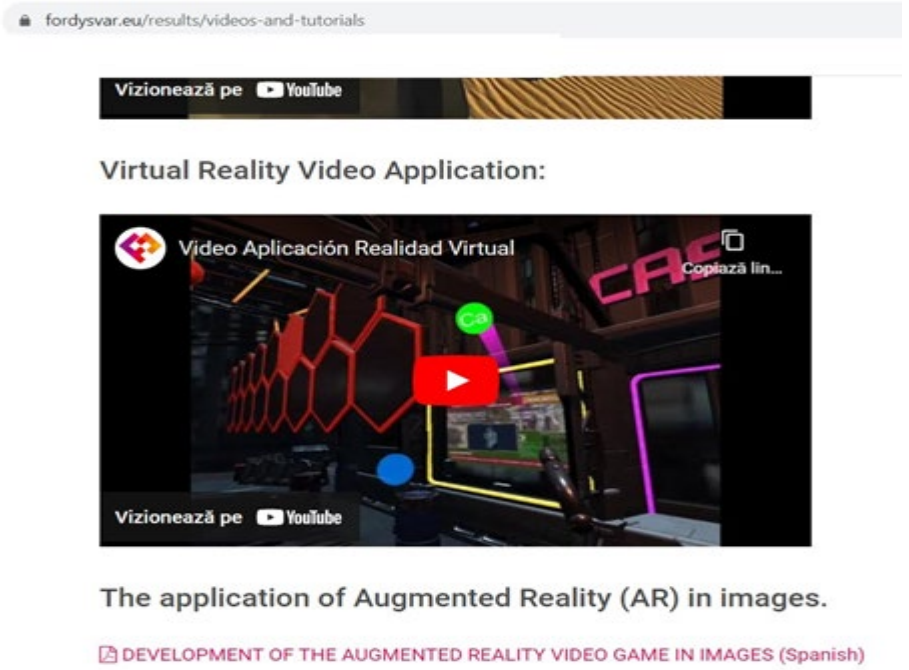
Starting from 2018, the Association implemented the FORDYS-VAR project, financed by the ERASMUS + Program, in partnership with the University of Burgos, the project activities being implemented in 3 European countries: Italy, Romania and Spain.

The **FORDYS-VAR** main objective was to provide an opportunity to improve the learning of people with dyslexia through technology, specifically Virtual Reality (VR) and Augmented Reality (AR). Introducing these technologies in the process of evaluation and intervention can become a key element to improve the effectiveness of learning and the improvement of their training experience.

Within the project, one of the results obtained consisted in creating a toolkit, including software for integrating VR and AR in educational and pedagogical settings for school children with dyslexia. Using Virtual Reality (VR) and Augmented Reality (AR) technology, information can be presented through multimedia elements (audio, text, images or videos), stored and transferred, and allows different media to be combined and transformed. This is considerably beneficial for attention to the individual needs of students and contributes to the treatment of dyslexia, to facilitate intervention in specific learning disorders of reading and writing.

These two applications were created, one using Virtual Reality (VR) and the second using Augmented Reality (AR), these technologies including immersion, presence, interaction, transduction and conceptual change, but also being safe tools and flexible, which offers the possibility to provide a multisensory approach:





WEBSITE:

https://fordysvar.eu/

3.ImmerseMe

DESCRIERE:

ImmerseMe is an online language learning tool. It enables learners to virtually step into an authentic location to learn a language and gives the opportunity to improve fluency and accuracy in a real-life like scenario. The 9 languages offered in ImmerseMe are: German, Spanish, French, English, Japanese, Chinese, Italian, Greek and Indonesian.

Immerse offers a variety of ways to learn and practice: small group classes and conversation events led by expert instructors, AI-based practice scenarios, an area to socialize and play games in the language you are learning and various features for single and multiplayer players. practice. Immersion lessons combine live instruction and practice in fully interactive, authentic settings. This means the user can learn to talk about cooking while preparing a meal with your partner, for example in a fully equipped restaurant kitchen.

What makes Immerse unique is that the user learns with real people. It is currently the only social live VR language learning app. Every user talks to in Immerse to a real person, so he actually learns to use the language to communicate with others. And live classes mean you'll never run out of learning content because you'll meet new people and have fresh conversations every time. There is also a Discord community with language channels for practicing, posting memes and sharing tips. Since launching the direct-to-consumer app in summer 2022, Immerse has introduced Spanish and French, with English and Japanese launching later in 2023.

- Content is differentiated into three levels: Beginner, Intermediate and Advanced.
- Learners are progressed through 4 scaffolded learning modes: Pronunciation > Dictation > Translation > Immersion.
- Learners can choose from over 3,000 interactive scenarios across 9 languages: German, Spanish, French, English, Japanese, Chinese, Italian, Greek and Indonesian.
- The layout of lessons can be tailored to match your scope and sequence/curriculum plan.
- Examples include: ordering a baguette in Paris, buying a bento box in Tokyo or trying tapas at a Spanish restaurant.
- ImmerseMe will prepare learners with the practical language skills they need to thrive as a global citizen.

WEBSITE:

https://immerseme.co/

4.Virtual Reality for Language Learning (VR4ALL)

**Virtual Reality for Language Learning (VR4ALL) Project,
contract 2019-1-HR01-KA204-060781
Co-funded by the ERASMUS+ Programme of the European Comission**

DESCRIPTION:

The Virtual Reality for Language Learning (VR4LL) project was carried out by English Kids Academy (EKA), in partnership with IH Split (Croatia), IH Sofia (Bulgaria) and IT experts from Spain. VR4LL aimed to enhance the learning experience of a foreign languages through innovative VR technology, the development of communication skills in foreign languages, but also the strengthening of the digital skills of foreign language teachers.

Through a series of intellectual products (deliverables), the project has developed a series of Virtual Worlds, full of language themes, offering learners a complete immersive experience. Experiential learning is based on the idea that we learn and retain something much better when we do it ourselves. Or, by total immersion in the virtual reality in which they have to perform some tasks, children and young people feel 100% involved in learning.

The benefits are of three types:

- from a cognitive point of view, the degree of memorization and acquisition of knowledge is higher (because we do, we get involved, not just assist);
- from the performance point of view, the degree of active use of English is higher (100% Anglophone reality, interaction/action exclusively in English);
- from an emotional point of view, learning English is associated with positive feelings (enthusiasm, pleasure, joy).

The project aimed at immersive, experiential learning of English using innovative VR technology by performing tasks in four virtual worlds: an international space station, a glacial world, a desert island and Ancient Rome:

- **Virtual World 1** - an International Space Station orbiting the earth with great views of our beautiful planet and the stars beyond. The Space Station is divided into several different rooms, each accessible through an electronic door: https://youtu.be/GB0EfrOyE-Q

- **Virtual World 2** - a remote, uninhibited tropical island. The idea was to create a visually appealing and colorful world, one that would encourage exploration. As any real island, it is surrounded by vast body of water on all sides, featuring clear blue skies, palm trees and mysterious caverns. The original idea for this world was to host tasks that would have the most similarity to *escape room* activities. Both tasks created through VR4LL projects were developed in escape room fashion: students must complete a series of steps in specific order and with specific outcome in order to escape the island: : https://youtu.be/o7xF8l7mBTk

- **Virtual World 3**- Virtual World 3 is an adventure into the world of the Ancient Romans. The user is immersed into the heart of the Roman Empire with impressive architecture, amphitheater entertainment and political intrigue. The Roman city is divided into several sections including a courtyard, a marketplace, a temple and even a colosseum with underground dungeons: https://youtu.be/7IhiEtbUZb8.

- **Virtual World 4-** Virtual World 4 was created as a challenge to generate spaces that are more friendly to the environment, understanding that the planet's resources are running out. The world itself presents a wide variety of pre-task opportunities and discussion topics. As students begin their journey surrounded by trees and snow having to locate the hut using the sun's positioning: https://youtu.be/Nr91aLF-xhY

Also, within the project, a training was carried out with the teachers from the partner institutions, who acquired the following skills and competences: safety issues and procedures in the use of VR, VR models in education, VR in hybrid and online teaching, practical experimentation of developed VR4LL content.

WEBSITE:

https://ih.ro/proiecte-erasmus/
https://vr4ll.com/#intoutput
https://englezacopii.ro/mai-mult-decat-engleza/proiecte-erasmus/proiecte-erasmus-vr4ll/

IMMERSIVE EXPERIENCES/ MEDIA

1. HAND Physics Lab

DESCRIPTION:

Hand Physics Lab is an experimental project created and developed by Dennys Kuhnert and created at Holonautic Studio. Using only his hands, the user can discover the unique universe of the physics laboratory where he will have to complete a variety of tasks and puzzles.

The user will go through more than 80 different puzzles and experiences to unlock more playgrounds where he will have complete freedom to draw, build and play.

Experiences the Hand Physics Lab user can encounter: finger painting eggs, building cube towers, using magnets and telekinesis, shaking hands with a clone of the user, petting a virtual cat, and more.

This game requires a VR headset in order to play.

WEBSITE:

https://sidequestvr.com/app/750/hand-physics-lab

IMMERSIVE EXPERIENCES/ MEDIA

2. H.O.L.O.CEPTION

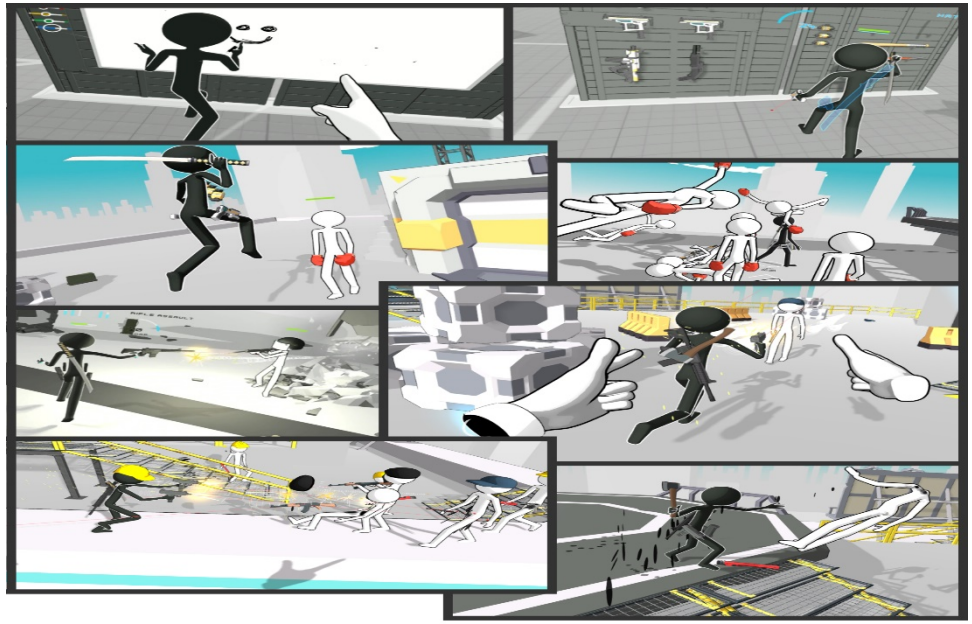
DESCRIPTION:

H.O.L.O.CEPTION introduces a unique way to interact in VR. This game explores the extraordinary capabilities of the brain to project itself into another entity and still manage to feel fully immersed. It is astonishing how quickly the brain's proprioception can adapt and make the controls feel natural.

The player incarnates and controls a small character in front of him. Using state-of-the-art IK techniques, the head and hands positions are accurately reproducing the posture of the player but in 3rd person perspective.

This allows to fully use ragdoll constraints and collisions for realistic interactions using physics.

The current game mode is an arena style combat simulator inspired by very popular movie action scenes.



WEBSITE:

https://www.holonautic.com/holoception

IMMERSIVE EXPERIENCES/ MEDIA

3. MARCO&POLO GO ROUND

DESCRIPTION:

Marco and Polo Go Round is an absurd and surreal love story in virtual reality.

A couple face challenges in their relationship as gravity turns upside down and their world literally crumbles around them.

The project features several innovative real-time approaches and technologies, including volumetric capture of actors, motion capture, as well as physics and fluids simulations.

The artistic direction, inspired in part by the style of artist David Hockney, required colossal work in modeling and textures and makes viewers feel like they are inside a three dimension, living, painting.

WEBSITE:

https://dpt.co/en/projects/marco-polo-go-round/

IMMERSIVE EXPERIENCES/ MEDIA

4. CREATE ARTWORKS

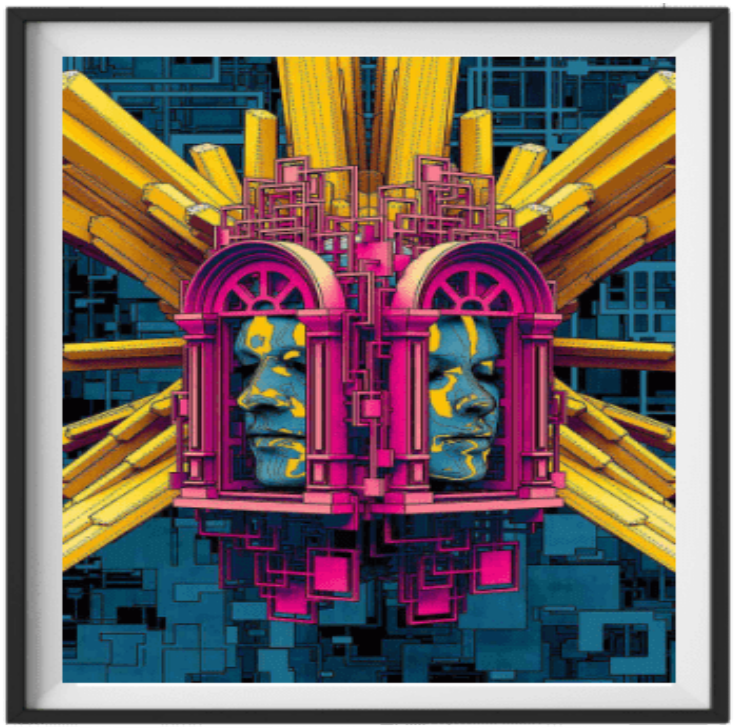
DESCRIPTION:

Artivive is a revolutionary tool that transforms the way you look at art. Artists can connect a digital layer to traditional artworks, which you can experience through this application. Simply point your phone at the artwork and watch it come to life.

The intuitive app uses augmented reality to tap into new dimensions, allowing the user to connect with art on a deeper level.

Artivive is an easy to use **augmented reality tool for art**. This new technology allows artists to create new dimensions of art by **linking classical with digital art**. This new world of possibilities can be unlocked by any smartphone or tablet and offer an extended emotional experience. Augmented reality helps artists go beyond the canvas and take advantage of the power of storytelling to create a more interactive and enhanced experience for the viewer.

It's an easy-to-use, affordable tool for creating Augmented Reality Art. Whether you are a beginner or expert, Artivive welcomes users of every artistic level.



WEBSITE:

https://artivive.com/

IMMERSIVE EXPERIENCES/ MEDIA

Tilt Brush by Google

5.

DESCRIPTION:

Tilt Brush is a room-scale 3D-painting virtual-reality application available from Google, originally developed by Skillman & Hackett. Tilt Brush lets the user to paint in 3D space with virtual reality.

Open Sourcing Tilt Brush

Tilt Brush, Google's virtual reality painting application, has collaborated with amazing creators over the years, many of whom were part of Artist in Residence Program.

Tilt Brush launched on the SteamVR platform for the HTC Vive VR headset in April 2016. It went on to help users create their artwork on every major VR platform, including the Oculus Rift, Windows Mixed Reality, Valve Index, PlayStation VR, and Oculus Quest VR headsets. Tilt Brush won dozens of awards, including the *Unity Awards 2015: Best VR Experience*, the Cannes Lions 2017 Gold Lion in Innovation, and *the Oculus Quest award for Best of 2019: VR Creativity Tool of the Year*, and was often featured on The Tonight Show Starring Jimmy Fallon.

Tilt Brush lets the users paint in 3D space with virtual reality, using creativity with three-dimensional brush strokes, stars, light, and even fire.

WEBSITE:

https://www.tiltbrush.com/

6. THE HUMAN ANATOMY VR

DESCRIPTION:

Virtual Medicine has created the most advanced, multi-award winning medical anatomy platform crossing Virtual Reality (VR), Mixed Reality (MR), and Augmented Reality (AR) for medical education. Human Anatomy VR is the only product on the market that provides full VR anatomical atlas combined with advanced 3D VR DICOM viewer.

Human Anatomy VR is the world's first fully-featured portable virtual reality anatomy platform. Over six years of development by multidisciplinary teams of doctors, artists, designers, programmers, and extensive cooperation with the Medical Faculty of Comenius University, Bratislava, brought an outstanding immersive learning opportunity.

Institutions utilizing the Virtual Medicine platform enjoy financial benefit from reduction of expenses for operating costs of anatomy wet labs.

Another benefit is the possibility of conducting remote multi-user lessons.

Utilizing mobile and tablet devices or VR headsets, this powerful technology enables augmentation or replacement of student time in a dissection room with a cadaver. The available enterprise license enables a VR shared experience between an instructor and authorized participants/students in a socially distanced format.

This is the only company in the world to offer a Virtual Classroom for secondary and medical schools. Carefully curated content is tailored for the secondary school curriculum in five different languages. Its main objective is to make the anatomy classes more attractive for students and standout as an innovative school.

With the Multi-User collaboration mode, students can simultaneously view over 5,000 precisely modelled anatomical structures with accompanying descriptions.

Human Anatomy VRS is the most advanced product yet and it can be implemented at universities to teach anatomy.

The Multi-User collaboration mode delivers a complete 3D VR anatomical atlas combined with 3D VR DICOM viewer, connects students and gives them the best chance to succeed by sharing experience in real time and using advanced features.

The Virtual Anatomy Classroom includes the Human Anatomy VR app for devices with VR, and the AR Anatomy mobile app that supports Augmented Reality for mobile phones and tablets.

WEBSITE:

https://www.medicinevirtual.com/

IMMERSIVE EXPERIENCES/ MEDIA

7. 3D ORGANON

- **EDUCAȚIE VR,** *ca instrument de dezvoltare.*

Educație prin realitate virtuală, proces de învățare

DESCRIPTION:

3D Organon is a medical & healthcare education platform for teaching and learning anatomy across virtual reality, desktop, tablet, and mobile devices. 3D Organon VR Anatomy, 3D Organon's prime solution, is the world's first fully-featured **VR anatomy software**.

With a plethora of life-like anatomy models within immersive environments and an extensive knowledge base of anatomical definitions translated into 16 languages, it transforms the challenging subject of medical anatomy into concrete knowledge readily applied to clinical practice across the world.

The 3D Organon software includes over 12.000 anatomical structures across 15 body systems, showcasing new features such as DICOM Viewer, Hand Tracking, VR Web Search, Lounge Area, 3D Organon Medverse, Ultrasound VR Simulator, images, refactored body actions, microscopic models, and a variety of VR environments among others.

3D Organon MEDVERSE

The enriched multi-user VR module provides shared anatomy learning experiences where students can interact in the same virtual space. Users can communicate with their tutors and peers in real-time through voice chat and messages, as they magnify structures of interest, and observe and manipulate 3D models from various viewpoints. This system supports various training scenarios ranging from small learning groups to classroom-size education, where students and teachers can participate in virtual reality.

Ultrasound VR Simulator

3D Organon **is the first software platform** in the world to integrate an ultrasound simulator for VR **that does not require a mannequin or other special equipment**.

WEBSITE:

https://www.3dorganon.com/

IMMERSIVE EXPERIENCES/ MEDIA

8. EDUTECH VR

DESCRIPTION:

The activities can take place in schools and afterschool, and the company offers experiences with REDBOX VR all-in-one virtual reality kits created specifically for use in the educational environment - distant places on the globe, outer space or the human body, without leaving the classroom.

SOME EXAMPLES OF LESSONS:

ADVENTURE IN THE ARCTIC REGIONS Every user can visit the remote and frigid arctic regions and observe how creatures have adapted to survival in these extreme conditions. The user can meet polar bear, arctic fox, mountain goats and musk on the journey. Every user can learn and find out what they feed on, what are their habits.	

A SAFARI IN THE AFRICAN SAVANNAH

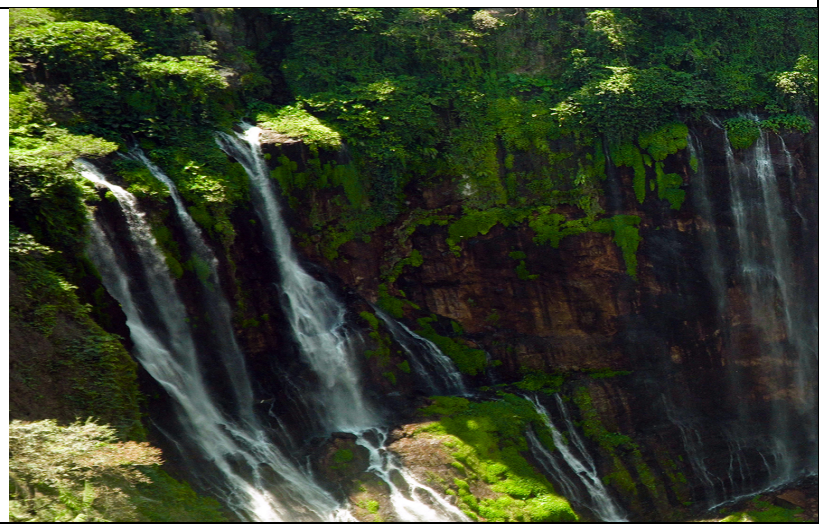
High heat, prey and game, herbivores and carnivores together, all in a cycle of life.

Using VR, every user can go on a safari through the African savanna, ready to meet lions, elephants, zebras and even mongooses.

Every user can learn about them in their habitat in the hope of drawing attention to conservation challenges.

TRAVELER THROUGH THE RAINFOREST

A sea of green, huge trees, moisture and life as it encompasses. It is a trip to the Amazon forest, where, using VR, every user will meet some famous residents: the tarantula, the yellow-striped poison frog, the sloths, as well as the cute chimpanzees.



TRAVELER IN THE ANTARCTIC

Using VR, everyone can travel to Antarctica, the southernmost continent and the coldest place on Earth, and you'll be surprised at how much life we can encounter. Prepare for extreme cold and the excitement of meeting some extremely friendly inhabitants of the region.

WEBSITE:

https://vrbrasov.com/edutech-vr/