

Title: The Virtual University

Topic: Future Universities

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The general trend of distance learning and teaching could be seen even before the short-term necessity given by the Covid-19 crisis but is now more present than ever. Digital environments play a huge role in the virtualization of education at university level, since they allow for more independence of space and time. The University of the Future is an at least partly **Virtual University**. It makes use of Extended Reality(=XR¹) technologies to connect students and teachers from everywhere in the world!

Everyday life of students from the Virtual University

Students meet, work, learn and interact at the Virtual Open Campus – a single shared virtual space for all students, teachers, researchers and visitors.

Using remote free roam multiuser VR-AR environments, students work together in the same virtual space – no matter where they are physically located. Students, teachers and researchers collaborate on projects in 3D virtual workspaces. This fosters international partnerships and the exchange of different (cultural) perspectives. Furthermore, collaboration using new technologies supports an ideal utilization of the capacities of the universities by reaching a potentially much broader audience.

Students of the Virtual University not only visit lectures from one university but can choose from a broad range of courses from different international universities. Using XR, they not only *watch* these lectures but can also participate in interactive learning sessions.

Why does the University of the Future not stick to videoconferencing?

Virtual environments offer one major advantage compared to standard videoconferencing: spatial context. Virtual 3-dimensional spaces give people the feeling of really being there and working side by side. They simulate the experience of in-person meetings and collaboration. Virtual spaces also allow users to generate, manipulate and experience content in 3D. This helps visualizing information and conveying context and meaning and therefore enhances the learning experience.

The Virtual University offers remote workshops and laboratory classes which are especially important for technical studies and engineering. In these virtual workshops students learn through hands-on experience.

A further advantage of using new technologies is that they already spark interest among students and therefore increases students' engagement, making it easier for teachers to convey content.

What can we do NOW to make this happen?

We want to provide an infrastructure that enables students and teachers to access XR technologies, thereby fostering the development of innovative usage scenarios. We want to grant students and teachers access to XR equipment that is easily available and ready to use without cumbersome technical set-up that requires a lot of time, knowledge and energy. Just like computer labs are seen as standard today, we want to realize a so-called "XR lab".

¹ *Extended Reality (abbreviated XR) describes immersive technologies that combine the real and the virtual world meaning Augmented, Virtual, Mixed Reality and possible future technologies.

Apart from teaching, the XR Lab will also be used to showcase student and research projects offering everyone the possibility to explore what is being worked on at the university.

In the future, trained staff needs to be available to help teachers plan their classes using XR. We want to offer training and support, so that teachers can plan and conduct their lessons with ease. In the future, we want to provide content management capabilities in VR-AR environments for teachers and instructors that can be used without advanced knowledge in IT and development. To respect traditional technologies, VR 3D content will be merged in traditional learning management systems that will also provide multi-platform capabilities.

Universities supporting universities

Participating partner universities need a compatible equipment infrastructure in order to work together. We support each other with the implementation of new technologies in education and exchange experiences and best practices. Experienced universities in the E³UDRES² network such as the UAS St. Pölten and Vidzeme UAS can support other interested universities by helping to establish the required infrastructure.

Don't wait for it - The Virtual University starts now!

