

VR in Education: the new age of learning

In the wake of what might be the pinnacle of learning from experience, behold: Experiential Training is coming and here stay...

By [Dr Lohyd Terrier](#) ^{3 May 2019}



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Using new technologies for pedagogical purposes is more than just a fad. It seems to be quickly imposing itself as the future of education. In fact, most professionals working in training and education are already well-versed in various fields such as augmented reality, virtual reality, e-learning and blended learning.

Although still quite expensive to implement, there is every reason to believe that the costs will come down quickly and the high-tech classroom will continue to develop. To get there, however, the internet giants – Apple, Microsoft, Facebook, and Google – are investing massively in virtual reality R&D, which could durably modify the way we approach training and education.

Experience through training

Integrating new technologies in training is part of a broader movement to help learners gain experience. The goal is clear: challenge pedagogical techniques to develop a more experiential way of learning. Of course this idea has been around for some time. The so-called learning-by-doing approach could be seen as the forerunner of experiential learning.

Knowledge can be acquired from books...but the experience cannot. Learning the fundamentals is one thing, applying them to theoretical situations is another - applying them to real-life situations is harder still.

According to Patrick Ogheard, Associate Dean of Practical Arts at Ecole hôtelière de Lausanne, "the Swiss dual education system upholds the firm belief that theory and practice go hand in hand. This is particularly true in hospitality management. Our biggest pedagogical challenge is not only to leverage but also transmit the strong heritage hospitality is grounded in all while ensuring we keep up with the changing world. Teaching must evolve to reflect the what and the how that best serves our students, and bringing technology into the equation is no longer a fun addition, but a necessity".



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The goal of experiential learning is to help students apply knowledge and to create an experience during the training session. Indeed, virtual reality tools enable students to come into contact with a more dynamic representation of reality than a traditional case study. Dynamic role play, or situational learning, could enhance teaching by requiring students to problem solve in an immersive environment. One in which the consequences of each action could be tested on a trial-and-error basis.

May I have your attention please...

Any educator or trainer will tell you: it's hard to get students' attention...with distractions coming from cell phones, computers and other devices. Consequently, a war is being waged in classrooms around the world.

The rules of the game have changed; students just aren't the same; the teachers of tomorrow can either fight technology...or use it to their advantage. These technologies have many advantages. They foster a great deal of curiosity so why not use them to get students' attention and get them involved in class? Explaining a student what a production line looks like is one thing; being able to show him or her - via a virtual reality headset - is a whole different kettle of fish.



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Maintaining students attention is related to another, more pedagogical, goal. Here, the immersive and experiential aspect of learning could enable learners to permanently encode information via new learning channels. Students think, see and test their ideas and knowledge immediately. The goal is to move closer to real-life work situations, which involve an emotional component that is often missing from traditional learning contexts.

Moreover, these new tools enable learners to engage in highly-specific situations because they do not come with the same time and cost constraints. For instance, students could switch from one environment to the next (fundraising initiative, conflict with a customer, etc.) without having to get out their chair.

The other important element is the fact that using new technologies reduces the risk linked to errors in a real life situation. Obviously, the negative and positive consequences of virtual reality games, as realistic as they may be, are only virtual. Consequently, users can try and test new strategies in a risk-free environment.

Gamification in education

Our students have grown up with video games where tasks, levels, challenges and immediate feedback are the rules. Those rules are completed with rewards, competition, rankings and interaction with other gamers. When they were children, they probably had the impression that school was much more boring than playing with their friends.

"Gamification is the best way to attract and retain our students' attention in a real or virtual classroom. The

technologies that are available today offer a wide range of opportunities to motivate and to engage our students, and above all to help them become active learners. Gamification is also a challenge for the faculty members since it is not just about games. We have to know our students, their skills and we have to set the learning objectives as in a more traditional approach. The content has to be there, gamification and technology are just new ways to deliver it", suggests Ana-Maria Nogareda, director of Academic & Student Affairs at Ecole hôtelière de Lausanne.



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Custom-designed training

Immersion is a fantastic learning opportunity but another advantage of these tools is the fact that they can be personalised. The benefits of tailoring teaching to the individual learner are well-established; however, implementing bespoke solutions remains difficult.

Professors are already pulled in many different directions. Personalisation is often limited to a group-by-group basis. How can teachers tailor their course to individuals when there are 40 students in each class? New technologies could make this type of personalisation possible while increasing class sizes on a massive scale.

In addition, the progress of each student could be measured, enabling students to learn at their own pace. The avenues in terms of personalisation are multiple: it could be possible to match teaching methods with learning styles even when class sizes are daunting. Performance tracking of this sort could allow educators to adapt teaching techniques and learning speeds on the fly.

Challenges ahead

New technologies seem to offer a variety of advantages but it would be unwise to see them as a cure to all our woes and the problems they raise should be dealt with head-on.

The first is linked to the danger that immersion could significantly reduce interaction between individuals, particularly between students. Interacting with another human being is far more enriching than interacting with an avatar.

Likewise, interactions with a screen will never durably replace real interactions. Student-teacher interaction must be maintained at all costs. A balance must be found between tech-delivered content and regular classroom teaching. The other limitation is related to the cost of these resources. Indeed, schools need substantial IT and WIFI infrastructure to support the simultaneous use of these bandwidth-hungry tools.

Lastly, investing in these new technologies (even though costs are dropping fast) is financially onerous for training and education organisations.

EHL's first-ever VR course

The Housekeeping Virtual Reality course started with the February 2019 intake. We have created a serious game where a team of five students work together. Only one student wears the Oculus glasses, the others

see what he/she is seeing on a screen. We have received excellent feedback from the students who appreciate the use of technology in the class. The whole student team is involved from the start of the experience and they can quickly see the benefits of working as a team to succeed in the game.

For the future, we need to introduce more gamification and experience-based learning into our curriculum. We are currently looking at augmented (AR) and mixed reality (MR) technology, as well as more VR possibilities. The next serious game will allow each student to participate “inside the game” either sharing the VR experience by all being in the same virtual environment or by using AR or MR so that all players can see the same objects.

Holographic images may also play a part in our future education, bringing celebrities to life who can share their knowledge without physically being on site, notes Julia Aymonier, chief information officer, EHL Group.

Tomorrow’s challenge may well be to train professors, teachers, trainers and other educators so they can become more tech-savvy...or to convince them of the usefulness of implementing such tools. While the future of education is bright, more scientific studies measuring the effectiveness of these new methods need to be conducted before a definitive conclusion can be drawn regarding the relevance of developing such solutions in teaching.

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