ELEARNINGNEWS ARTICLE

Year 6 - number 192 Wednesday 2 March 2022

Virtual reality in companies and schools: studies and cases

This article explores how virtual reality is used in corporate and academic training and considers cases and studies done in companies and schools to understand benefits of this technology

Virtual reality, or virtual reality (VR), has been used for decades in training for jobs such as surgeon, astronaut, and soldier because you can recreate situations realistically that would not be possible in the real world. People learn best when they can put their skills into practice and when they receive targeted feedback on what and how to improve, actions that VR is able to take with great efficiency and precision.

Virtual reality is not a recent technology, it has been talked about since the 1950s and prototypes similar to today's VR glasses have started to be seen since the late 1980s . The determining factor in exploding the popularity of virtual reality is the lowering of the prices of this technology. The prices of virtual reality tools have plummeted in recent years, which has allowed this technology to spread across various industries including learning.

Companies in the retail, customer service, and logistics industries now use this tool to train their employees. Even in **schools**, virtual reality is gaining momentum. But what is this technology and more importantly how is it used for learning? This article tries to answer this question by considering cases and studies of companies and universities that have adopted this technology.

What is virtual reality?

VR is a virtual simulation of an environment in which the subject can interact with other objects. One can have a virtual reality experience through simulators, which are commonly called 'virtual reality goggles'. These goggles have 360-degree screens instead of lenses, and by wearing them, you can interact with virtual objects researched through specific software. There are other types of much more complex virtual reality tools that are used in specific fields, but they are less common.

Simulators can offer three types of experiences:

- **Non-immersive**
  This type of virtual reality does not involve the use of VR glasses, but a video game console. The simulation is recreated on a computer screen and interaction with objects is done through a controller. So subjects can interact with their surroundings.
- **Semi-immersive**
  In this case the subjects are partially detached from the environment that surrounds them. An example to understand this type of reality are flight simulators for pilot training. They are located in an environment that recreates the cabin of an aircraft, but the interaction with virtual reality is always through screens and controllers.
- **Immersive**
  In this case, subjects wear VR goggles and are completely detached from their surroundings. In some cases there is equipment to allow subjects to reproduce more complex movements such as running.

What benefits does VR offer to corporate training?

The benefits offered by VR to training are attracting many companies since they allow employees to be trained faster, more efficiently and less expensively.
Below we explore three cases of three large companies that have integrated VR for corporate training to understand the benefits brought by this technology. These cases are reported in a Harvard Business Review article.

- **The Walmart case**
  The Walmart case shows that VR can very significantly **reduce the cost and time of corporate training**. Some time ago, Walmart introduced VR to train trainees on how to use the "Pickup Tower," which is the locker system that allows

customers to pick up merchandise at various locations around the city. Prior to the use of VR, each trainee had to spend an entire day in purpose-built training buildings where they received part hands-on and part online training. Using VR allows the same actions to be simulated without using all the staff, machinery and tools of a real simulation, allowing the same action to be performed in any building. In addition, the company's data shows that it has reduced the time it takes to train each trainee from 8 hours to less than a half hour, without reducing the effectiveness of the training. This case testifies that, in some cases such as repetitive jobs, the application of VR in training can be very useful in reducing costs and time.

- **The Verizon case**
  VR is proving to be effective not only for training for repetitive jobs but also for **improving soft skills**. These skills are increasingly important in companies to improve customer service and management skills.
  Verizon, a U.S. multinational company, has introduced the use of VR to train **call-center employees**. VR allows you to recreate different situations and makes the simulation more realistic than a simulation with another human being. In fact, according to company data, the introduction of this technology has improved the consistency and effectiveness of training, as well as reduced training time from 10 hours to 30 minutes. Employees also said that simulation allows them to experience more different situations, being able to prepare for more scenarios.
- **The Sprouts Farmer Market case.**
  One of the key practices for a company is to train its employees in **company culture**. Sprouts Farmers Market is a supermarket company that relies on company culture to distinguish the brand. Some of the values embraced by the company are "respect and serve others" and "embrace healthy living." To select and train new employees in this culture, the company used VR to recreate these values in a virtual simulation. They created scenarios where a mother is in the grocery store and is anxious because she has to shop for her son who just found out he is allergic to gluten. Another scenario involves being able to help an elderly customer take a watermelon home to raise awareness of customer needs.
  This company also tested about 300 employees on their understanding of company values. Two groups were formed: one group was given a course on company values through powerpoint presentations, another through VR tools. Participants had to learn six values and 48% of those who used VR remembered all six while only 3% of those who did the powerpoint course remembered all six.

The three cases testify to the fact that VR can bring savings in time and money, but also that this technology offers more application possibilities than previously thought. All of these benefits make VR a very useful medium for corporate training. The Walmart case proves that VR can very significantly reduce the cost and time of corporate training. the Verizon case proves that VR is not only effective for training repetitive jobs but also for improving soft skills. The Sprouts Farmer Market case, on the other hand, proves that VR can help train its employees in corporate culture.

VR for education in schools and universities

VR is starting to be used within **schools** as well, and it seems to have many positives.
As we saw above, the use of VR is effective for recruiting and training staff, and teachers are no exception. The ability to recreate a realistic virtual environment with students interacting in different situations allows for education and teachers to learn how to react appropriately.
On the other hand, as far as students are concerned, virtual reality allows them to learn certain subjects faster and more efficiently because it offers an immersive experience in which the subject, by interacting with the objects they have at their disposal, can put into practice the theory they have studied.
There are several studies that demonstrate the application that VR can have and the positive impact of this technology:

- **Virtual Labs**
  Eastern Michigan University, in the United States, has introduced VR in its courses with very satisfactory results. Students are more engaged in their studies, and they report that they are able to understand in a more fun and interactive way. Professors are pleased because it **increases safety and decreases costs**. When students lecture in the lab, objects are often broken. Not to mention the consumption of the various disposable devices for safety and hygiene or the reagents needed to perform the activities. Since the costs of maintaining labs are high, use is not always possible. VR allows you to "go to the lab" whenever you want, without the hassle of safety and the use of expensive equipment that might break down.
- **School Trips**
  One study examined some students' response to virtual field trips. The study looked at a field trip on the topic of climate change and showed that those who took a virtual field trip were able to learn more and better about the content. The study shows that face-to-face interaction, even if it is virtual, can significantly improve the way we learn. Not because a

computer is able to teach better than a professor, but because virtual reality generates an immersive learning experience in which our brains can learn faster and remember longer.

- **Language Learning**
  Research conducted by Portuguese researchers in several universities testifies to the positive impact of VR for language learning. Indeed, VR allows to recreate the perfect learning environments and to interact with avatars. This last possibility is very useful for language learning because interaction is one of the key elements to learn new ones. Also, when the experience is fully immersive, it is easier for our brain to focus on learning a new language.

Based on the findings of the studies, it is possible to conclude that the benefits of using VR in schools are several. It offers a new learning space where students are immersed in a context where they are more ready to learn and can interact with their surroundings, which allows them to better understand the content of the lessons.

Pupils can **learn by doing**: instead of just reading and repeating, they can learn and practice the notions acquired through a simulated experience.
Teachers can also be tested and trained more fully. In addition, teachers can easily recreate different immersive experiences that emotionally engage students through virtual reality. This is beneficial to learning because it helps the student remember better and longer.

Another benefit of VR is that it offers more accessible hands-on education. With VR, educators can recreate virtual labs of any subject. This cuts costs and increases safety and accessibility.

The benefits of virtual reality are many and applicable for both corporate and educational training. it is too early to conclude that VR will be applied more and more for education, but it is also clear that this technology offers many advantages. For this reason, VR is one of the technologies that could change the way we learn and become much more common than they are.

Translated with www.DeepL.com/Translator