Online course (after class)

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listen.

Listening 2 VR and AR

Audio script

VR and AR

Hello everyone. My name is Russell McGraw and I'm a member of a team that works to design virtual reality and augmented reality products, not just games but also products with practical uses in fields like medicine, science, and even fashion. A lot of people are confused by the terms "augmented reality" and "virtual reality," so what I want to do today is define these terms, explain the similarities and differences between them and

give examples of some of their current and potential future applications.

Augmented reality and virtual reality have one major similarity, and that is that both are designed to alter our view of the world. However, the way they do it, and the technology they employ, are different.

Let me start by talking about augmented reality, or AR for short. AR has been in the news recently because of its use in the game Pokémon Go, which came out in 2016 and became a worldwide hit. To "augment" something means to add to it or increase it. For example, you can augment your income by taking a second job or working more hours. Augmented reality is a technology that layers or puts computer-generated content on top of the existing environment.

You view it through a device like a smartphone or a tablet. So, when people play Pokémon Go, they see the real environment around them, combined with artificial images of little monsters that players can interact with in all sorts of fun ways.

Now, in contrast, virtual reality is an artificial, computer-generated simulation – that means a copy – of a real-world environment. You enter the VR world via a specially designed headset like the one in this photo. The headset completely shuts out the real world and allows you to enter the virtual world. It feels real. The action takes place all around you, in 360 degrees, so you're encouraged to turn around, look around, and move around, like in the real world. The people and objects are three-dimensional and they appear life-size.

So, in short, while augmented reality places digital content in the real world, virtual reality is designed to take the viewer completely out of the real world. The two technologies are opposites in that way.

OK, until now, both technologies have been used successfully for entertainment and play. But more and more they're being used for practical purposes as well. Consider the field of aviation. Have you ever heard of a flight simulator? It's a machine for training pilots. It's designed exactly like a real airplane, and it has the ability to move in ways that simulate, or copy, the movement of an airplane as it takes off and lands, though of course it never actually leaves the ground. The pilot controls it just as he or she would a real plane. Virtual reality is used to create the landscape the pilot sees and to copy the kinds of messages and feedback that pilots normally receive. So, the simulator allows pilots to practice flying virtually in all kinds of weather, and to handle every sort of emergency safely and inexpensively.

In the medical field, augmented reality has been used to help students by layering a map of the bones and muscles onto a life-size, three-dimensional model of the human body. Also, virtual reality has been used to train surgeons in situations where it would be dangerous or difficult to operate on living people. And a very interesting use of augmented reality is in treating extreme fears called phobias. Let's say you have a person with arachnophobia, which is a fear of spiders. The normal treatment for phobias is to expose people to the thing they're afraid of in small, controlled amounts. But doctors don't usually keep jars of spiders in their offices. Virtual reality provides a practical substitute for the real thing.

Augmented reality also has many potential uses in the fashion industry. For example, today there are websites that allow you to upload a photo of yourself and then try on as many pairs of eyeglasses as you want. Soon there will be virtual dressing rooms and even virtual shopping malls. Someday soon there may be augmented

cooking lessons, or car repair, or an augmented GPS system that's part of the car's windshield, so drivers can get directions at the same time as they're looking at the road.

I see we're running out of time, so to finish I'll mention some future developments in the areas of virtual and augmented reality. One is the addition of haptic feedback to the virtual reality environment. The term "haptic" is defined as "relating to the sense of touch," for example someone touches you on the hand in your virtual world; in the real world using haptic feedback you'd actually be able to feel the touch. Amazing, right? The main development moving forward is that eventually augmented and virtual reality won't be separate experiences. Rather, they'll be combined to create a blended experience that has both real and artificial elements and that reduces the distance between real and digital worlds.

Words and expressions

augmented reality (AR) 增强现实
virtual reality (VR) 虚拟现实
simulation *n.* 模拟，仿真（尤用于试验）
aviation *n.* 航空；航空学
layer *v.* 铺一层……
phobia *n.* 恐惧(症)
arachnophobia *n.* 蜘蛛恐惧症
substitute *n.* 代替物，替代品
windshield *n.* （汽车前部的）挡风玻璃
haptic *adj.* 触觉的

Proper names

Russell McGraw 罗素·麦格劳
Pokémon Go 精灵宝可梦 Go（一款手机游戏）