Virtual, Mixed and Augmented Reality in Veterinary Education

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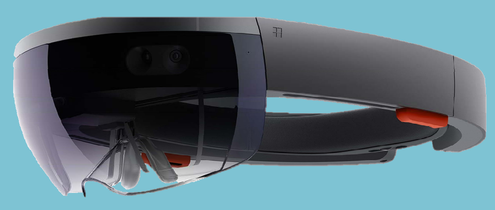
What is Virtual Reality?

Virtual reality (VR) is a 3D immersive, computer-generated simulation that allows you to experience a different environment as if you were there. VR has become very popular in gaming and entertainment, but it also has tremendous potential for applications in medicine and education.

What is Augmented Reality?

Augmented reality (AR) adds a computer-generated layer of **holograms** on top of what you see in real life. Rather than being completely immersed in an artificial environment, the two worlds become blended (mixed) together. The AR overlays can be used to convey additional information or interact with digital content in new ways. The most popular AR device currently is the **Microsoft HoloLens**.



How do I Create VR/AR Content?

There are many different ways to create content that can be used in VR and AR.

CT and MR data can be **reconstructed** to create 3D models for teaching anatomy and surgery.

Cameras such as the **Samsung Gear 360** and the **Ricoh Theta S** can capture immersive, 360-degree still images and video clips, creating a completely new viewing experience.

How Do I Get Started with VR?

There are many VR devices available on the market, depending on your price range:

Google Cardboard is the least expensive ($10) option and works with just about any Android phone or iPhone.

Samsung Gear VR works with several Samsung Galaxy devices and costs about $100. Your phone plugs directly into the Gear VR and provides the computational power.

Higher-end devices, such as the **HTC Vive** and **Oculus Rift** cost $400 - $800 and need to be attached to a computer. The **Sony PlayStation VR** is a great option for gamers.

What Are Some Applications of VR/AR?

VR and AR can be used for **teaching anatomy**, **surgical planning** and creating **surgery** and **exam room** simulations.

3D models can be delivered using sites such as **Sketchfab**. **YouTube 3D-VR-360** can now stream immersive video for VR devices.