Augmented Reality- Getting Started

When you look around you right now, that is pure reality. (We're going to completely ignore any existentialism, quantum mechanics, philosophy, and psychological discussions). Today, there are 2 different types of computer generated realities that we will be exploring: augmented reality, and virtual reality.

What is Augmented Reality (AR)?

Augmented Reality is an enhanced version of reality created by the use of technology to overlay digital information on an image of something being viewed through a device (as a smartphone camera). (Webster Dictionary). Augmented reality is normally generated as you hold your phone camera over an enabled paper, card, or poster. You will need to access the Augmented Reality through specialized apps.

If you're looking through a screen and a computer is adding something to that physical space that is NOT there when you move your eyes from the screen, THAT is augmented reality. Let's use the most popular (and best) use of this technology right now.

This picture does a good job of establishing a couple of principles to keep in mind with Augmented reality:

- The user's perspective is still grounded in the real world.
- The device only generates a portion of the environment on the screen – in this case, an electric rat
- The interactive component here is the pokeball and the pokemon, both of which respond to user input

What is Virtual Reality (VR)?

Virtual Reality is defined as the computer-generated simulation of a three-dimensional image or environment that can be interacted with in a seemingly real or physical way by a person using special electronic equipment, such as a helmet with a screen inside or gloves fitted with sensors. (Webster Dictionary). Virtual Reality uses images (either real or computer generated)

usually presented in a panoramic view to portray the effect of being in a three-dimensional world. You do need specific apps and equipment in order to use this technology.

Virtual Reality, ditches the first two principles of AR. Here, the user's perspective is NOT grounded in the real world and instead of just a portion of the screen displaying a computer generated image, now that image is full screen.

Let's switch AR off in Pokemon Go. You'll notice the background is not making use of the device's camera. Everything is supplied by computing power, and the user's perspective is not grounded in their real location.

This is virtual reality at its most basic: a world created completely by a computer that you are either a passive viewer in or an active participant.

Most references to VR include not just a computer generated world, but immersion in these worlds. This is done by fully engaging your sense of sight, sound, and sometimes touch, through the use of a headset, goggles, etc. This fully removes the aspect of your perspective being determined by anything that actually exists.

To participate in an AR experience, you will need:
- An iPod, iPad, or Smartphone with a camera and internet connection

This is needed so that you can hold the device over an image to activate the Augmented Reality scenario.

- Apps with Augmented Reality components built into them.
- An image that triggers the Augmented Reality apps to activate.
- An internet connection

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Recommended Devices for AR

iPod/iPad
As long as your iPod has a built in camera and can run the latest iOS, you will be able to use it for VR and AR. An iPad will work for AR, but is too big to fit in the VR headsets.

iPhone
The Apple App Store tends to have the widest selection of VR and AR apps

Android Smartphone
Google first developed its VR applications for Android devices, including its Google Expeditions for education. If you do have an Android device there are several options of high quality VR and AR aps.

Explore some AR apps that we love!

Aurasma- This is a product that you can use to create your own AR experiences. Use a computer for creation, then a mobile device to activate your Aura. https://www.aurasma.com/

Layar (Android, iOS) – This product also allows you to create your own AR experiences in print sources such as posters, papers, advertisements, and more. This tool allows you to bring print to life by adding videos, web links, and an alternative view of the print. https://www.layar.com/

Star Chart- When Star Chart is opened on your Android or iOS device and pointed at the sky, the app will inform you of what stars or planets you're currently facing, even during the day when the stars are at their hardest to see. It does it all in real-time, too. https://itunes.apple.com/us/app/star-chart/id345542655?mt=8

Quiver and Quiver Education- Color the downloadable pages and bring your drawings to life! Sign up for their education portal which is a work in progress. http://www.quivervision.com/

Elements 4D- Chemistry blocks that help you learn. Element 4D helps students learn the Periodic Table by using a set of interactive blocks. This app shows the students how elements can combine to make chemical substances. http://elements4d.daqri.com/

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Viewmaster - The modern version of your favorite childhood toy. The viewmaster apps are sold much like traditional software: you buy a content package compatible with the viewmaster hardwate that focuses on specific activities and locales. Current packs include visits to space, the African Sahara, underwater shipwrecks, and dinosaur herds. http://www.view-master.com/en-us

Discovery VR – Hosted by the Discovery Channel, this app allows you to get an immersive, first-hand look at real life events, scenarios, and locations by dropping you into panoramic videos. Updated regularly, many of the featured scenarios align with Discovery Channel programming and coverage of things like Shark Week, Mythbusters and, of course, the Puppy Bowl. http://www.discoveryvr.com/

NY Times VR and ABC News VR- Like other offerings on this list, the NY Times and ABC News apps features panormamic videos and pictures to drop the user into eye-catching and moving experience. Where these app differ from those above their focus on world events, with many of the VR offerins mirroring major stories and headlines. http://www.nytimes.com/marketing/nytvr/

http://abcnews.go.com/US/fullpage/abc-news-vr-virtual-reality-news-stories-33768357

Google Expeditions – One of the most exciting apps, in our opition, Google expeditions allows you to simply and easily lead a troop of explorers on virtual expidentions to various places of cultural and historical significance and provides key pieces of information about eese places right within the app. The best feature here – and what sets it apart from the others – is the ability of the leader to point to various places in the panoramas and see exactly where students are looking, all in real time.

https://www.google.com/edu/expeditions/