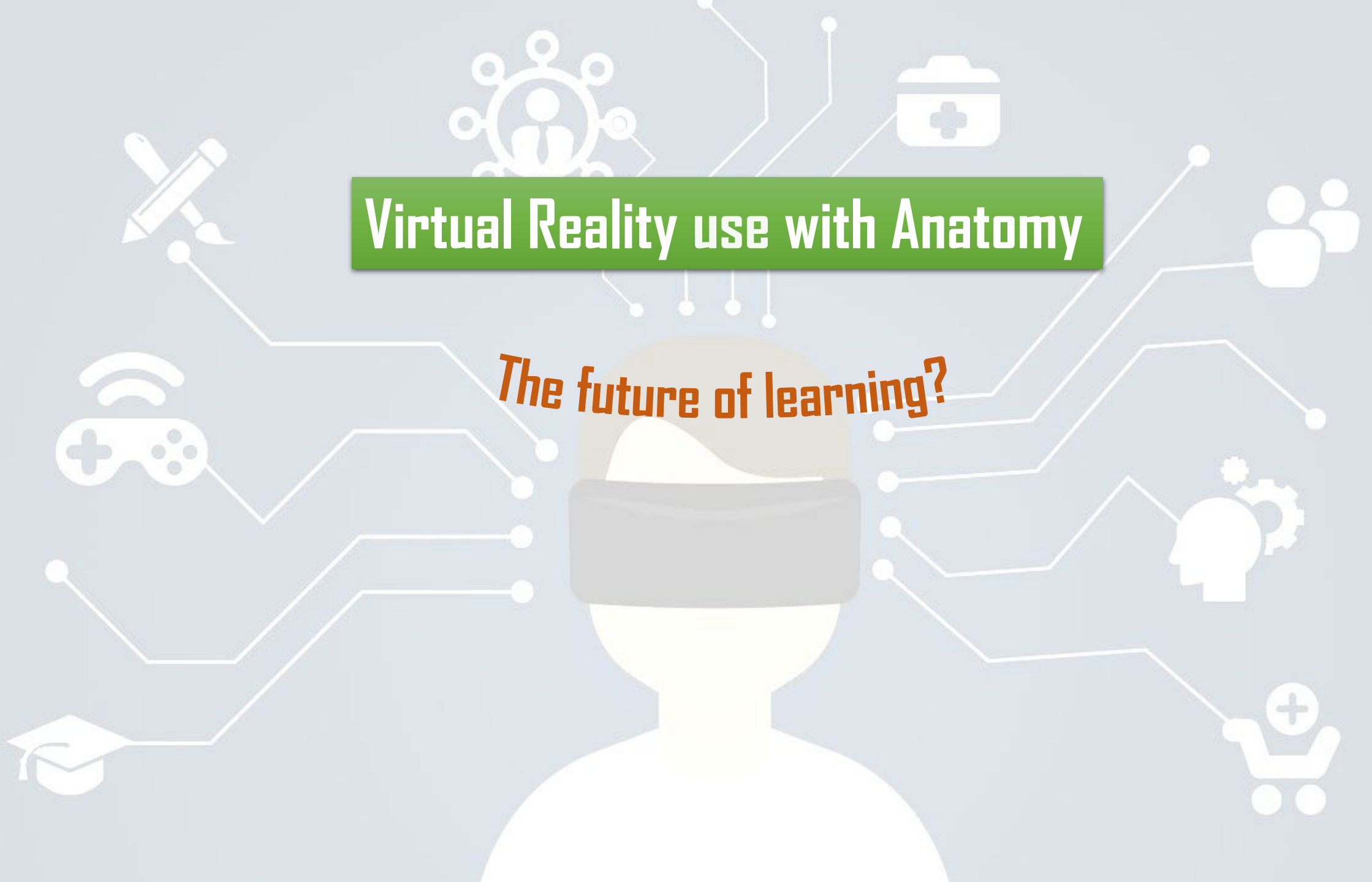


Virtual Reality use with Anatomy

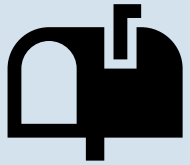
The future of learning?



Contact Information



Ashley Bondurant, PT, DPT



Ashley.Bondurant@tridenttech.edu



Towson University – Athletic Training

University of Maryland, Eastern Shore – Doctorate of Physical Therapy

University of South Carolina – M. Ed. – Educational Technology - Current



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Objectives:

The Learner Will Be Able To:



Distinguish the difference between virtual reality and augmented reality.



Understand the research that has been done with AR and VR in the classroom, specifically for anatomy based content.



Seek the best equipment and software for their particular institutions and budgetary restraints.



Discuss the current methods of teaching anatomy including the gold standard.

Virtual Reality vs. Augmented Reality

**The user is
immersed in the
Virtual world**



**Image is
superimposed on
reality**



Examples:

Pokémon Go

More recent navigation systems superimpose
the route on the live view of the road

Research:

History of technology in anatomy classrooms



Trelease (2016)

Development of PC lead to better lectures,
World Wide Web led to easier
collaboration, VR software is next frontier



Research: Cybersickness

Rebenitsch and Owen (2016)

What is cybersickness, how do we diagnose and treat it, and how can we prevent it?



Research: VR in the Anatomy Classroom

**Han, Kosaka, Seung-Chul,
Itokazu, and Kuboa (2017)**

VR in the anatomy classroom
Students greatly enjoyed using the
technology



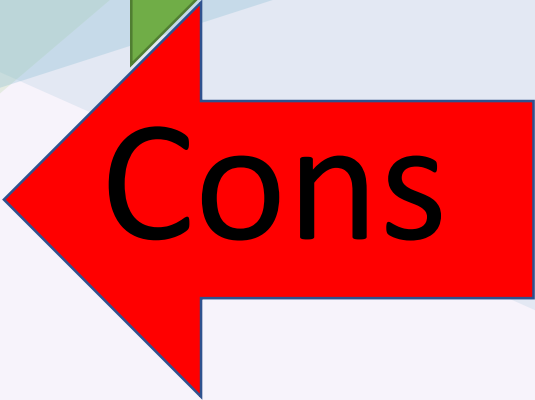
What is being used now in the classroom?

Trelease (2016):

- Cadaver dissection is still the gold standard
- Models
- 2D pictures (books, e-books)
- PowerPoints
- 3D computer images
- Mobile devices with anatomy apps
- VR



Pros



Cons

What VR products are out there?

\$

Cardboard: Many brands



Google VR Cardboard
Around \$15

\$ \$

Lower Level VR Headsets



Google Daydream



Samsung Gear VR
Around \$100

\$ \$ \$

Middle Range VR Headsets



Oculus Go



HTC VIVE Focus



Oculus Quest

All between \$200-700

\$ \$ \$ \$

High End VR Headsets



Oculus Rift S



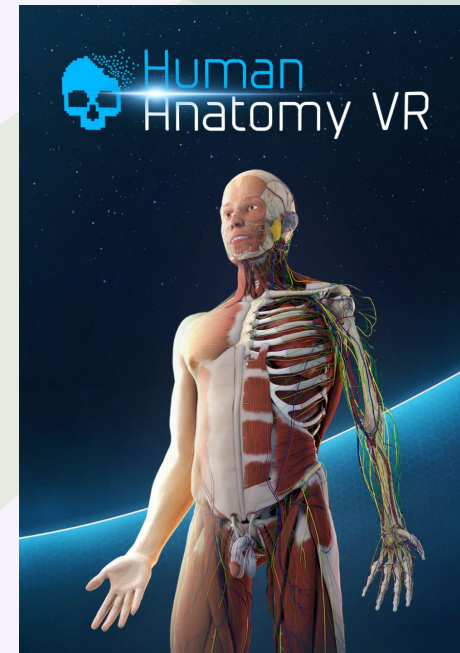
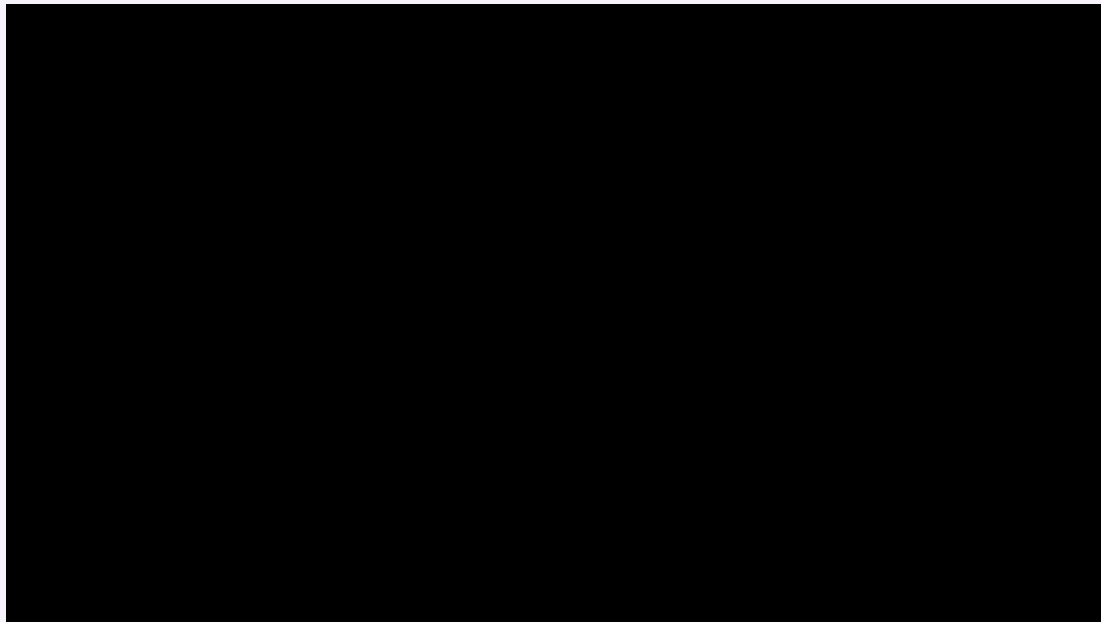
HTC VIVE Pro

\$800-1200

What apps are available?



HTC VIVE's
Oculus Rift
<https://www.youtube.com/watch?v=Q5jStFXo00M>

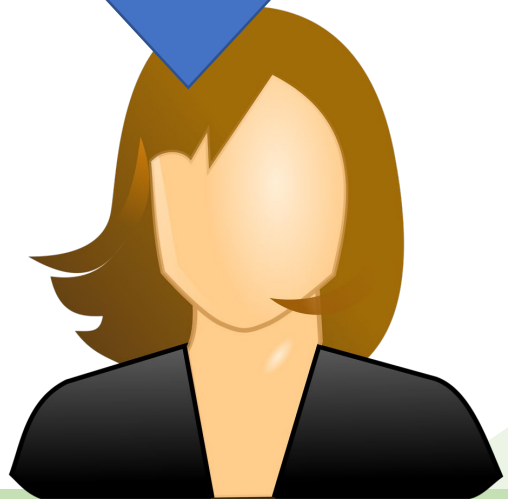


Oculus Rift
<https://www.medicinevirtual.com/>

Oculus Go

What do students think?

Colorado State University
<https://www.youtube.com/watch?v=zDrLMgYZcac>



What's next?

- Work with your institution to get the hardware and software
- Figure out what's best for your students

Bottom line



VR is still new and developing

There isn't a lot of research right now determining the effectiveness of VR

The long terms effects of using VR are still unknown

Determine if this style of teaching is right for your students:

1. Does the cost outweigh the benefit?
2. Does the headache of implementation outweigh the benefit?

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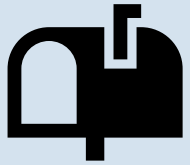
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