



# VIRTUAL DISSECTION FOR SUPPLEMENTING LEARNING OF ANATOMY

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# HOW VIRTUAL DISSECTION CAN EXPAND ANATOMICAL UNDERSTANDING AND MAXIMIZE THE IMPACT OF CADAVERIC DISSECTION





# TRADITIONAL CADAVERIC DISSECTION

Current Gold Standard for Anatomical Learning

Common Drawbacks:

Expensive

Limited Accessibility

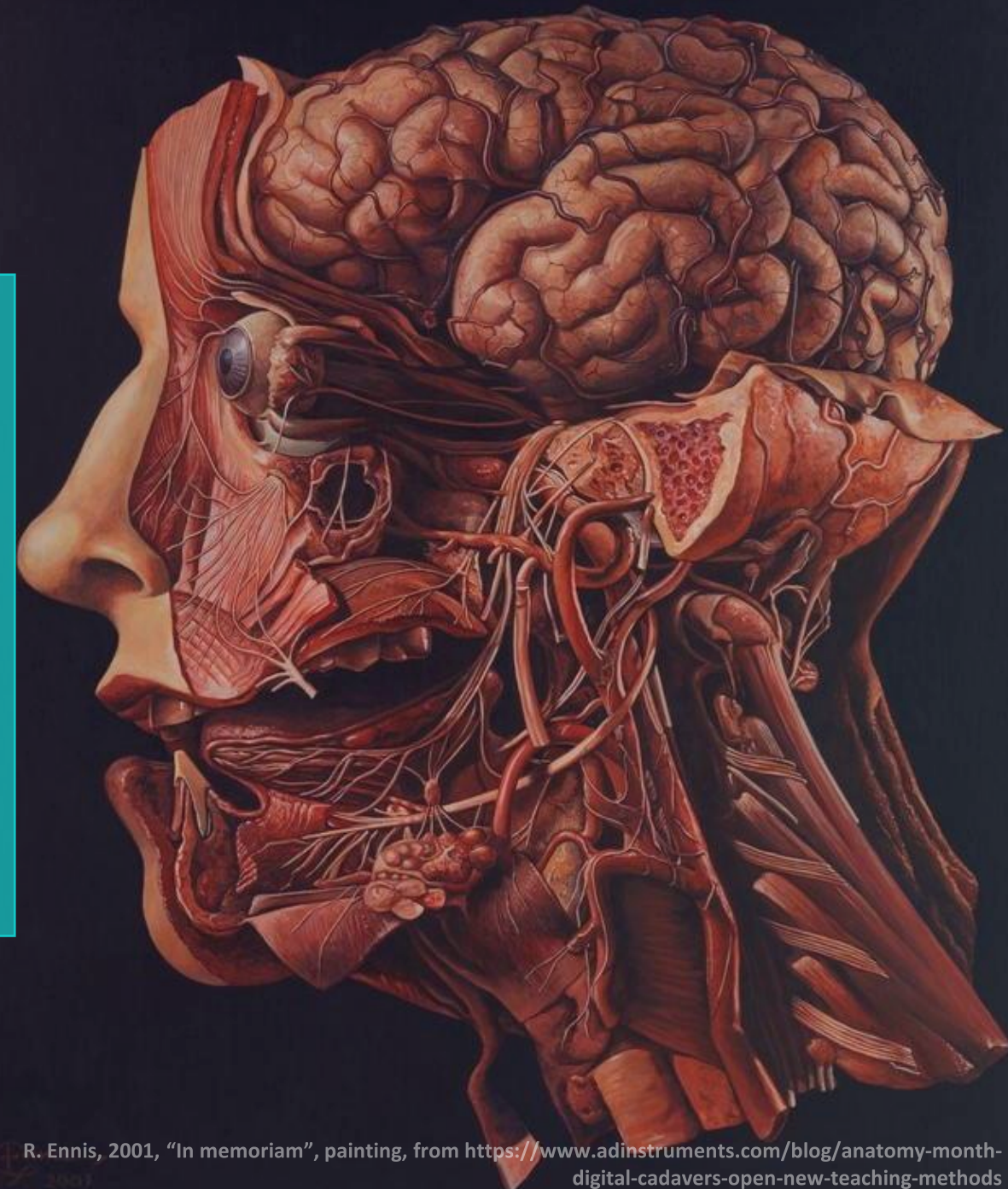
Ethical Concerns

Advanced Age of Specimens

Lab Environment Risks

Time Inefficient

Educational Limitations



R. Ennis, 2001, "In memoriam", painting, from <https://www.adinstruments.com/blog/anatomy-month-digital-cadavers-open-new-teaching-methods>

# 3 METHODS OF VIRTUAL DISSECTION DELIVERY



## COMPUTER BASED

Online or Software Based  
Simulations of Anatomy



## VIRTUAL OR AUGMENTED REALITY

3D Simulations in a Virtual  
Reality or Superimposed  
into the Real World



## ANATOMAGE TABLE

Advanced Technology that  
can Simulate a Range of  
Anatomical Scenarios



## COMPUTER BASED

- Downloadable or free to use online
- Used in lower-level undergraduate anatomy learning
- Establish a basic understanding of 3D anatomical relationship
- Ex. Anatomy 3D Atlas or Zygote Body



Source:  
<https://anatomy3datlas.com/>



# AUGMENTED AND VIRTUAL REALITY



Source: <https://todaysveterinarypractice.com/news/virtual-reality-brings-dogs-anatomy-to-life-for-veterinary-students/>

## Benefits

- More accurate Scale than Computer Based
- Can be used for practice and simulations

## Drawbacks

- Can be expensive

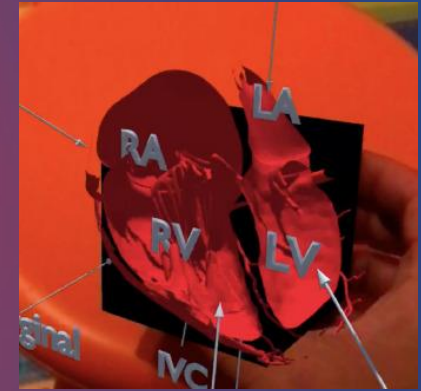
Often used in Medical Education

## Virtual Reality (VR)

- Brings user into a simulated environment
- Controlled by remote or keyboard

## Augmented Reality (AR)

- Superimposes 3D images into your environment
- Allows interactions with your environment



(Uribe et al., 2023)



Source: <https://www.atsu.edu/news/atsu-soma-anatomy-department-introduces-augmented-reality-learning-for-first-year-students>

(Ujiie et al., 2021)  
(Bölek et al., 2021)  
(Uribe et al., 2023)

# ANATOMAGE TABLE



Video from: <https://anatomage.com/table/>

(Kavvadia et al., 2023)



# WHY VIRTUAL DISSECTION SHOULD BE ADOPTED

## BENEFITS

- Students gain a better understanding of Anatomical Relationships
- Allows students to break down and isolate systems or layers
- Helps students engage and feel confident in their learning
- Helps develop better understanding of cross-sectional anatomy
- Can simulate tissue changes and variations
- Can allow for practice of surgical techniques

## DRAWBACKS

- Lack of tactile/haptic elements
- Can be expensive
- Access to technology could be limited
- Resolution may decrease accuracy
- Keyboard and remote control have limitations



# SUMMARY

Helps students advance their understanding of anatomy

Allow students to expand on the learning cadaveric dissection offers

Help students become more confident in their abilities





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