Combining physical and digital resources in teaching Anatomy and Physiology

Three examples:
1. Cadavers
2. Leech Neurons
3. Compendium Reviews
A very different model of human dissection occurs in Thailand...Thai culture deeply respects teachers “to an extent unfamiliar to Westerners,” and every Thai donor is granted the highly esteemed status of ajarn yai meaning “great teacher.” In the dedication ceremony, Buddhist monks and family members of the deceased join students and faculty members in the dissecting room to chant and pray. The names of the donors are read aloud as the title of ajarn is conferred, and each cadaver is presented a bouquet of flowers. The students always refer to the body as “great teacher” and never as sop, the Thai word for “cadaver.” They sometimes bring flowers to the bodies, greet them with traditional bows, and pray for their ajarn yai at the temples. In contrast to the American tendency to depersonalize the cadavers with anonymity, covered hands and faces, humor, even rationalization regarding the inanimate nature of the bodies...[Thai] students are expected to know the names of their donor when asked and to retain memory of the name as they practice medicine.
Cadaver becomes digital

• Dissection work on cadaver is great opportunity for advanced students
• Video and photos of dissection makes it available digitally
• Dissected cadaver is physical resource for classroom students
Use of digital cadaver requires physical presence?

- Is it responsible to publish online images of cadaver with no filter for viewer?
- Value and power of the cadaver gift requires physical presence to orient viewer.
- Discussion and reflection time before viewing cadaver.
Two weeks in 20 minutes

- Neuron recording labs routinely done in Upper Division Neurobiology courses—takes two weeks of lab-work
- Virtual leech neuron lab can be done in 20 minutes
- Effective only when instructor guides student through lab…combined physical/virtual experience
- Classroom or screen-grab voice-over of instructor guiding lab might also be effective.
Physical versus Digital Compendium Notebook

- Students are one of our best resources
- Students are asked to assemble their best study guide synthesis for that section of the course
- Can be physical or digital…

Example 3. Compendium Reviews

16th century astronomical compendium summarizes all knowledge of moon, stars, planets
Physical compendium

• Written and drawn by hand
• Reviewed personally in class before exam
• Advantages
  – Kinesthetic learning from hand-writing/drawing
  – In-person feedback
  – Tools easily mastered by most students
  – Liberates artistic sensibility

Sample page from Head Section of Anatomy and Physiology student, Pat Castillo
Digital compendium

• Assembled in online blog portfolio
• Reviewed by video feedback
• Advantages
  – Develops use and analysis of internet resources
  – Video feedback provides reviewable comments on each section of portfolio
  – Tools are useful in many educational and work settings
  – Liberates digital artistic sensibility

Sample page from Cellular Basis of Life section of Human Biology, student Rowan Rain, using Ning online social network blog

Sample page from Cell Model Project in Human Biology, student Brian Espau using Ning online social network blog

Video feedback using Jing
CONCLUSION

- Neither physical or digital environment is perfect—each has its advantages
- Most important is using every resource to its fullest
- Combining physical and digital resources is key to quality education now and in future

Three examples:
1. Cadavers
2. Heart dissection
3. Compendium Reviews

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