Promoting Spatial & Conceptual Learning Of Anatomy In Biology Courses

Technology & Biology Instruction At Prairie View A&M University
Prairie View A&M University chose the Anatomage Table to improve conceptual and spatial understanding of anatomy in their biology and physiology courses. It also presented as a solution for Texas regulations and course time constraints which made obtaining cadavers difficult. The Table was fully integrated into Prairie View's Anatomical Visualization and Simulation Center.
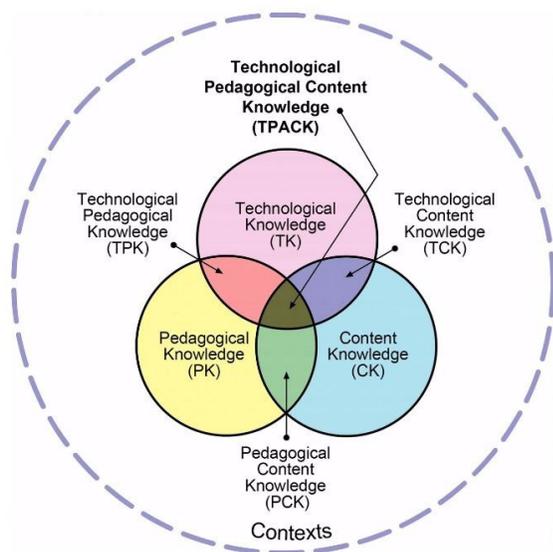
The Table's Framework For Curriculum
The curriculum structure was reorganized to take advantage of the way student's currently interact with technology. Integrating the Table into current coursework involved not only using its dissection features, but its radiology cases as well. Since technology is a native part of many students' everyday activities, designing a more technology-oriented environment was meant to drive engagement with content. Aligning curriculum with effective technology would make instruction more student-centered and interactive.

Sequence Identification & Terminology Exposure With Quiz Tools
The Table was used to teach traditional anatomy and physiology curriculum for gross and structure-specific anatomy. Quiz tools on the Table were used to boost class participation, promote sequence identification, and effectively demonstrate cutting planes.

Students would work on an activity that would have them compare a normal skull structure to a fractured one. They would use the Table to label the normal skull and then discuss the fractured structures in groups. Instructors also focused classes on sequence identification by using the removal and labeling features. They would have students work to identify structures that have to be removed to reach other structures. Students would use the removal icon to remove muscles in order to reach a specific structure. They would simultaneously use the labeling pins to label structures as they removed muscle groups. Using the labeling pins in conjunction with dissection tools was also beneficial in teaching students directional terminology for specific cutting planes.

Exposure To Radiology Imaging In Anatomy Courses
A unique aspect of utilizing the Table in anatomy courses is having students gain exposure to radiology imaging analysis. Students were able to view clinical cases via X-rays, CT, and MRI scans. Prairie View's radiology technician course used the Table to provide real-time X-ray visualization. Specifically, they used the Table's features to view 3D landmark alignments. Students then begin to work with and analyze imaging types they'll see for the rest of their careers.
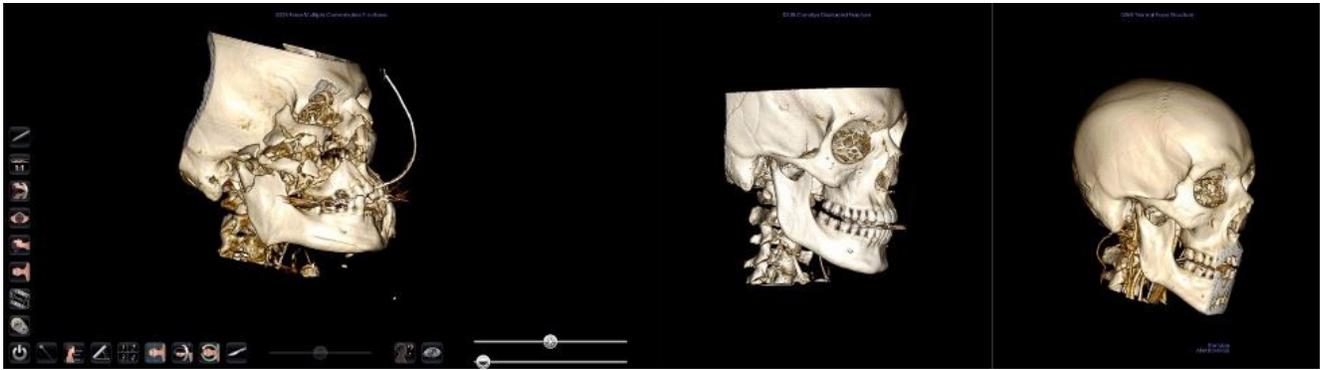
Curriculum Goals & Outreach Opportunities
By having students interact with virtual technology, the main learning goals center around building active and collaborative environments. Having the Table has also created the opportunity for Prairie View to host community outreach initiatives. Demonstrations are available for local community college advisors, faculty, and students. Middle and high schools students also have the opportunity to interact with 3D anatomy and medical practices at Prairie View summer camps.

Student Response To Table's Clinical Resources
Beyond considering the faculty's response to the Table, Prairie View also collected student responses and opinions to virtual dissection. Overall, students have had positive reactions to using the Table during class. They felt that the virtual dissection features as well as the content on the Table were valuable educational tools. Adopting the Table has driven them to actively engage with anatomy and radiology material while also providing them with clinical resources to prepare them for their futures in medicine.

References

Ledbetter, M. L. S. (2012). *Vision and Change in Undergraduate Biology Education: A Call to Action* Presentation to Faculty for Undergraduate Neuroscience, July 2011. *Journal of Undergraduate Neuroscience Education*, *11*(1), A22–A26.