Detailed Exploration Of 3D Structures In Virtual Anatomy Labs

Virtual Dissection For All Anatomy Courses

Towards the end of 2015, anatomy classes at Life University officially switched from traditional cadaver labs to virtual anatomy labs. Life University's curriculum mainly focuses on chiropractic curriculum as well as nutrition, dietetics, and athletic education. At the time, the university integrated more Anatomage Table's into their courses than any other institution. Life's Virtual Anatomy Lab includes eight Anatomage Tables for students to utilize in head and neck, visceral, and musculoskeletal anatomy courses.

Mastering Material With Virtual Anatomy Lab Time

The decision to equip anatomy labs with virtual dissection technology was motivated by wanting to improve the curriculum design and increase student collaboration. Having the Table available in classrooms allowed for all students to partake in lessons, which was previously more challenging with cadaver labs due to student sensitivity to chemicals. Besides lecture time, every week students have two hours in the Virtual Anatomy Lab to review the week's material as well as 12 hours of open lab time.

Animation & Highlighting Features For Full Body Cadaver Structures

Both educators and students benefited from the Table's curriculum-based features. One factor they took advantage of was the “undo” button which applies to any dissection feature. Resetting their work allowed for students to be more independent and explore the virtual cadaver's anatomy without losing the integrity of the structure. The goal of using virtual technology in anatomy courses was to promote exploration without fear of students losing their work.

Anatomy courses mainly utilized the labeling and animation features to highlight specific structures on the full body cadavers. Once the students highlighted the structure, they were able to see the anatomical name. From there, they were able to remove superficial to deeply embedded structures layer-by-layer to understand their physical relationships. They also took advantage of the ability to rotate each structure in 3D to see the spatial relationship for all listed anatomy in the course.

Layered Visualization To Understand 3D Structural Relationships

Another aspect of the Table that was integrated into each anatomy course was the ability to view computerized tomography (CT) scans. When time permitted, students were able to view and study imaging on CT scans as well. The 3D multi-layered visualization options for the cadavers and regional structures allowed for students to have a detailed understanding of body systems. Digitally peeling away various tissues and organs allowed for students in anatomy labs to learn at their own pace while recreating 3D structural relationships.

Most of the courses created in-class activities for students based on the Table's features and case library. Students were able to actively collaborate with instructors, teach each other in class, and share methodologies with their classmates.

Reflection Of Anatomy Course Material & Objectives

The Virtual Anatomy Lab at Life syncs learning with technology, focusing on giving health science students a hands-on and active learning experience. Beyond integrating the Table into lectures and group learning exercises, the Table allows for later study and reflection of anatomy course material. The Table's features were used to teach anatomy courses that collectively covered the entire body to ensure that students mastered course objectives.

References

Life University. (2015). *Life University Students Switch to Virtual Anatomy Tables—University Possesses Largest Collection of Anatomage Tables on the Planet* [Press release]. Retrieved from http://www.life.edu/../LifeUniversitySwitchestoVirtualAnatomyTables091015.pdf