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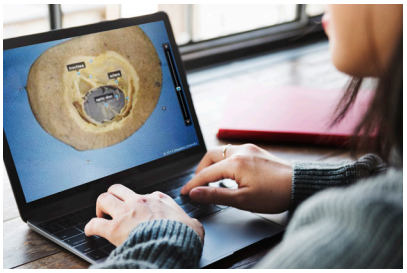
Medical
Case Study

3D Anatomy Simulation is a Game Changer for Optometry Students



The Panasonic 3D Multiview Anatomy System has allowed the State University of New York (SUNY) College of Optometry to limit its reliance on cadavers for gross anatomy education.

THE PROBLEM

The State University of New York (SUNY) College of Optometry offers a four-year program leading to the Doctor of Optometry degree. While it specializes in the eyes and visual system, the program also includes basic sciences. In the past, this gross anatomy course used actual cadavers—but now that cadavers are not an option, how can students learn gross anatomy? Drawings, textbooks, and models can only get them so far: drawings are two-dimensional representations of three-dimensional structures, and are often color-coded for easy identification. Models, while three-dimensional, are quite fragile, which limits the amount of manipulation they can endure. The students need to see anatomical features in-situ, and in detail.

THE SOLUTION

While there are many software applications for virtual gross anatomy education, most are diagrammatic. The Panasonic 3D Multiview Anatomy System is one of the few that uses real photographs of actual dissections. What makes this system so valuable as a teaching aid is that these images are not static. Students can manipulate them to view from any angle or depth, and better understand the relationship between anatomical structures.

When teaching using a cadaver, students see more superficial structures before dissecting down to deeper ones. The Panasonic 3D Multiview Anatomy System allows for virtual dissection in which students can virtually peel off more superficial layers. These superficial layers can also be overlain on top of the deeper layers to provide an X-ray view. Many structures have identification pins which link to additional information, and the search function allows students to find a structure which may be visible in many different dissections. Alternately, they can then test themselves with self-directed learning by turning off the identification pins.

THE RESULTS

The Panasonic 3D Multiview Anatomy System has helped the SUNY College of Optometry to scale their anatomy training while reducing lab costs. “It’s been a game changer. It enables anatomy to be presented in a realistic setting in which students can view and manipulate structures in a way that is not possible with diagrams, models, or even actual anatomical specimens,” says David M. Krumholz, OD, FAAO, Associate Professor. “This has allowed the gross anatomy course to limit, and eventually eliminate, its use of cadaveric specimens.”

It also means that students can study their anatomy any time they are in the lab: there is no longer any need to wait for a lab instructor to prepare the cadaver, or for students to be exposed to infections or potentially dangerous chemicals. Students can learn, practice, and even test themselves while viewing and manipulating stereoscopic three dimensional images of actual dissections.

“The 3D Multiview Anatomy System is a great resource that helped me get a better understanding of anatomical relationships without having to wait for the weekly formal lab session, which was the only time there was access to the cadaver specimens.” –Katherine Tkach, Class of 2018.

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