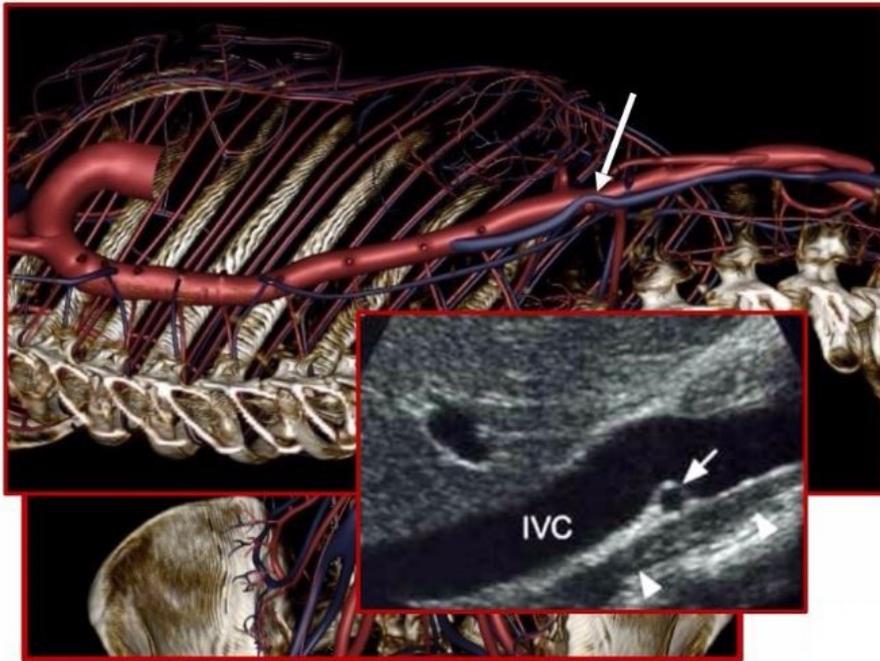


Investigating The Efficacy Of The Table In Medical Imaging Courses

Learning Objectives For Radiation Therapy & Medical Physicist Students

Educators at the University of Nebraska Medical Center aimed to promote active learning with the introduction of the Anatomage Table in medical imaging courses. Their learning objectives centered around promoting collaborative problem solving and evidence-based decision making. The Table was used in gynecology, gastroenterology, and ultrasound technology courses as well as oncology sectionals. Overall, faculty wanted students in these courses to gain exposure to clinical cases while also actively engaging with 3D material.

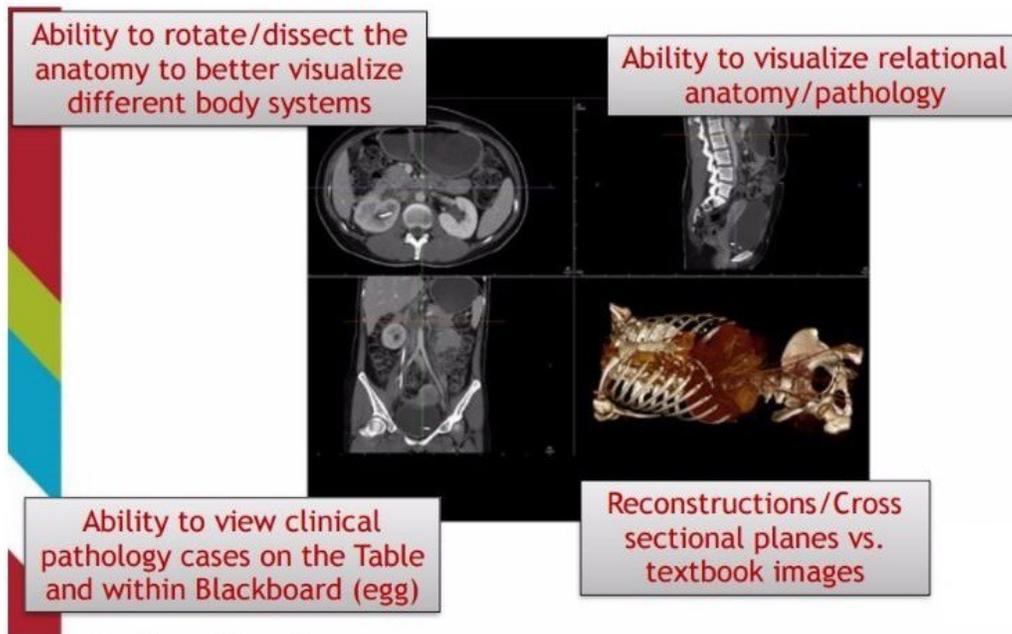


Clinical Case Presentations In Radiation Therapy Courses

The Table was initially integrated into the curriculum design of an oncology sectional course. The goal of utilizing the Table was to reinforce understanding of clinical cases and unique case studies. Presentations were reinforced by using the Table to allow for a complete understanding of the lecture material. Students were given the opportunity to lead case presentations of the material by using the Table's note-taking, quiz, drill, and practice functions.

Focus Group Analysis Of Beneficial Table Features

Faculty conducted specific educational research related to the advantages of the Table in imaging science courses. The purpose of the study was to investigate the quantitative benefit of virtual dissection on student performance while also exploring student perception of the Table. Multiple focus groups of students were surveyed and most of them agreed that using the Table in an educational setting has better prepared them to enter health care professions. The ability to rotate and dissect anatomy in 3D was advantageous in better visualizing body systems as well as relational pathology. Faculty used the Table's ability to load real patient data from DICOM files to create case studies from computed tomography (CT) and magnetic resonance images (MRI). Students had the ability to dissect reconstructions and cross-sectional planes of clinical cases that were imported or featured in the Table's library. Overall, data gathered from the focus groups trended positive as students felt they benefited from the Table's features.



Quantitative Investigation Of GI Course Examination Performance

Student scores from a gastroenterology (GI) course were compared between the years before and after the technology was adopted. All exams were computerized and statistical analysis were conducted to obtain the mean and standard deviation values of each exam for all the academic years that were being considered. Refer to the chart below for the obtained p-values for each of the examinations. The values with statistical significance supported the idea that the Table was a beneficial educational tool. The mean values for examination scores improved in 2014 and 2015 after the course had implemented the Table. This positive trend can be seen for multiple GI examinations throughout the year as well as student grade point averages (GPAs).

Variable	Year Mean \pm SD			Overall p-value
	2013 N=7	2014 N=8	2015 N=10	
X-Ray GPA	3.74 \pm 0.18	3.76 \pm 0.30	3.79 \pm 0.16	0.8962
Prereq. GPA	3.57 \pm 0.19	3.65 \pm 0.19	3.48 \pm 0.31	0.3679
GI Exam 1	75.6 \pm 9.7	81.7 \pm 7.4	84.0 \pm 7.4	0.1276
GI Exam 2	77.3 \pm 12.2	83.8 \pm 5.6	84.0 \pm 4.0	0.1702
GI Exam 3	76.0 \pm 10.1	82.6 \pm 8.0	81.0 \pm 6.8	0.2924
GI Exam 4	82.5 \pm 7.1	89.4 \pm 3.7	89.5 \pm 5.7	0.0350
GI Exam 6	87.0 \pm 7.1	94.1 \pm 5.4	89.5 \pm 5.8	0.0858
Overall GI Exam	78.0 \pm 7.4	84.0 \pm 5.3	83.9 \pm 4.3	0.0773
Normal Anatomy	80.6 \pm 7.1	87.3 \pm 4.2	86.7 \pm 3.5	0.0279
Pathology	75.8 \pm 8.3	81.1 \pm 7.4	82.0 \pm 6.4	0.2185

Perception & Performance With Virtual Dissection Technology

The faculty at the University of Nebraska Medical Center found that student performance in response to adopting the Table in imaging science courses was positive. There was an increase in both engagement with lecture material as well as improvement in examination scores. Integrating the Table into imaging science programs like the oncology sectional and GI course gave students an advanced visualization tool. Beyond reinforcing their anatomy education, they interacted with 3D dissection features while also gaining a complete clinical understanding of patient pathologies. Manipulating the virtual cadaver, regional, and cross-sectional structures allowed them to better understand relational anatomy.

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