Anatomage Table Improves Student Exam Scores In GI 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. The Table was used in gynecology, gastroenterology (GI), and ultrasound technology courses as well as oncology sectionals. Overall, faculty wanted students in these courses to gain exposure to clinical cases while engaging with 3D anatomical structures.

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 quantitative and qualitative educational research related to the advantages of the Table in imaging science courses. Multiple focus groups of students were surveyed and most of them agreed that using the Table 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).

Quantitative Investigation Of GI Course Examination Performance

Student scores from a GI course were compared between the years before and after the technology was adopted.

Variable	Year Mean $\pm$ SD		
	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
Prereq. GPA	3.57 $\pm$ 0.19	3.65 $\pm$ 0.19	3.48 $\pm$ 0.31
GI Exam 1	75.6 $\pm$ 9.7	81.7 $\pm$ 7.4	84.0 $\pm$ 7.4
GI Exam 2	77.3 $\pm$ 12.1	83.8 $\pm$ 5.6	84.0 $\pm$ 4.0
GI Exam 3	76.0 $\pm$ 10.1	82.6 $\pm$ 8.0	81.0 $\pm$ 6.8
GI Exam 4	82.5 $\pm$ 7.1	89.4 $\pm$ 3.7	89.5 $\pm$ 5.7
GI Exam 6	87.0 $\pm$ 7.1	94.1 $\pm$ 5.4	89.5 $\pm$ 5.8
Overall GI Exam	78.0 $\pm$ 7.4	84.0 $\pm$ 5.3	83.9 $\pm$ 4.3
Normal Anatomy	80.6 $\pm$ 7.1	87.3 $\pm$ 4.2	86.7 $\pm$ 3.5
Pathology	75.8 $\pm$ 8.3	81.1 $\pm$ 7.4	82.0 $\pm$ 6.4

Mean values of student scores from multiple GI course examinations and overall GPAs increased in the years after the Table was adopted. A positive trend was seen when comparing the 2013 academic year to the 2014 and 2015 years. There was about an 8-9% improvement in the overall GI, normal anatomy, and pathology average scores. The values with statistical significance supported the conclusion that the Table was a beneficial educational tool.

References

Custer, T., Michael, K. (2016). Lessons Learned with the Anatomage Table and Invivo Software [PowerPoint Presentation].

Anatomage