Opinion

A step to the practice: a hybrid approach in teaching anatomy to medical imaging students

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Opinion

Anatomy is the backbone of medical and paramedical programmes, including medical imaging, nursing, and physiotherapy. Teaching anatomy to medical imaging students is slightly different from any other programme. When teaching anatomy to medical imaging students (MIS); students may ask how much anatomical knowledge they need to learn before they go to clinical practice.
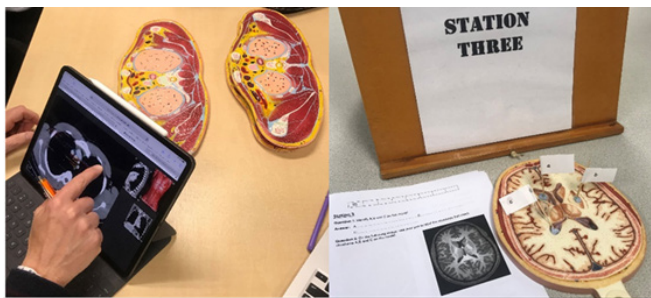
Y2 Medical imaging students study anatomy using hybrid approach (On the left-hand side) Evaluate the approach by assessing the students in the final exam of HEAL6250 (On the right-hand side)

"Anatomy is a three-dimensional subject that needs three-dimensional visualizations and traditional learning methods". It has proved that three-dimensional visualization is more effective for gaining anatomical knowledge than traditional methods. In addition, students are motivated and interested in using visualization tools to learn anatomical structures, e.g. ultrasound and cross-section anatomical models. Students also know that a good understanding of anatomical knowledge of the human body is fundamental in clinical practice, particularly in radiology and surgery. We believe that medical imaging students require the highest priority in learning anatomy among healthcare learners, as competent and efficient radiographers should have a comprehensive knowledge of anatomy. To increase their clinical capabilities, students must learn to read, examine and comprehend CT and MRI images during their clinical blocks by practising cross-sectional models and radiologic anatomy in the academic block.

Introducing cross-sectional anatomical models helps teach anatomy to Unitec MI students and significantly impacts their progress in studying and understanding anatomy in a three-dimensional way. Moreover, cross-sectional anatomical models provide a visual medium to facilitate understanding of the structural organization of the human body.

Cross-sectional anatomical models also facilitate the reading of CT/MRI. Therefore, students can easily correlate the structures of the cross-sectional image to the CT/MRI. We considered supporting MIS students in learning anatomy. Combined cross-section and CT/MRI (hybrid approach) is infrequently practised. We would like to know whether medical imaging students could be encouraged to use a hybrid learning approach of cross-section and CT/MRI and whether this would impact learning anatomy.

We are considering improving and developing anatomy learning by linking clinical practice and academic blocks to improve students' learning. We started to use anatomical cross-sectional models in transverse and sagittal sections side by side with CT/MRI in a team. We discussed the value of the hybrid approach in learning radiographic anatomy with our students. This hybrid tool can help our students understand, label and correlate the anatomical relationships and radiographic images.

Moreover, it creates an atmosphere of reality related to their clinical practice. We evaluated the effectiveness of this approach in teaching anatomy to medical imaging students by introducing a short survey. They evaluated the experience positively, remarking on how the combined approach was a more productive way to learn than the single one; students certainly understand this relevance to their clinical practice. Students commented that combining cross-sections and CT/MRI images is a robust learning tool; it is a form of repetition and a beneficial study tool that complements traditional teaching methods. Students also felt strongly that this learning tool "reinforced knowledge of anatomical structures". They reported that this approach helped them visually relate to and understand CT/MRI images during their clinical practice and helped them to compare sections with each other and see how they changed. By challenging our students to identify and understand anatomy through transverse and sagittal sections, they could better interpret multiple functional aspects and anatomical relationships. Reflecting on their exam, students showed significant improvement and could confidently label structures on CT models combined with sectional anatomy models. Overall, this approach would increase students' confidence in understanding anatomy within the context of clinical practice.

Acknowledgments

None.

Conflicts of interest

There is no conflicts of interest.