Virtual Peer Teaching in the Anatomy Lab

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Background

Previously, each class of first year medical students (N=124) at the Larner College of Medicine were split into dissection teams (N=20 with 6/7 students per team) for their anatomy dissections as part of the Foundations of Clinical Sciences (FoCS) curriculum. With this strategy, students performed only half of the course dissections. To transfer knowledge gained in the dissections in which they didn't participate, the 3/4 students who completed the dissection would teach their teammates about the anatomical structures they identified as well as information to assist in future recognition and pertinent facts about those structures (see figure below). Overall, this strategy enabled direct peer-to-peer teaching and provided an opportunity for students to learn from one another.

Team Blue Teaches Team Red

Team Red Teaches Team Blue

Motivation

Historical benefits of this approach included:
* An opportunity to teach/review the information reinforces the learning
* No single student feels overwhelmed by the requirement to teach others;
* Use of teams (blue/red) provides opportunities to work on team skills.

Historical drawbacks to this approach include:
* Lack of engagement of some students;
* Crowded and often noisy in the lab;
* Difficulty for faculty/TAs to visit all student groups to clarify any questions.

Due to the need to move the curriculum to a hybrid learning environment as a result of COVID-19, a virtual learning approach was developed for students to receive some of the benefits of peer teaching.

Peer Teaching

Peer teaching is defined as "the development of knowledge and skill through explicit active helping and supporting among status equals or matched companions, with the deliberate intent to help others with their learning goals" (1).
Utilizing a similar rationale, a peer-to-peer virtual teaching approach was established in which first year medical students were expected to share their anatomical knowledge with their fellow classmates.

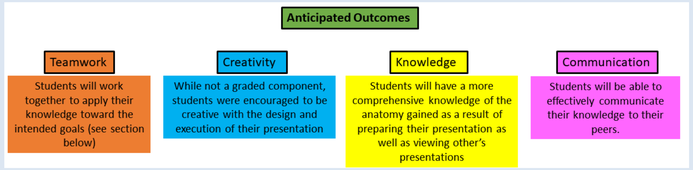
References and Acknowledgments

The author would like to gratefully thank Dr. Kathryn Huggett for advice on the project as well as leading the student focus group. The author would also like to gratefully thank Dr. Stephen Everse, the director of FoCS, for providing guidance on the setup of this new learning approach. Finally, the author would like to thank Dr. Eileen Cichoski-Kelly and Dr. Stephen Everse for critical review of this poster.

1. Topping K, Ehly S. Peer assisted learning: a framework for consultation. *J Educ Psychol Consult.* 2001, (12): 2113–2132.

Goals and Anticipated Outcomes

Establish a more effective and efficient means for students to teach and learn from one another.



Methods

Overview of Virtual Peer Teaching Setup

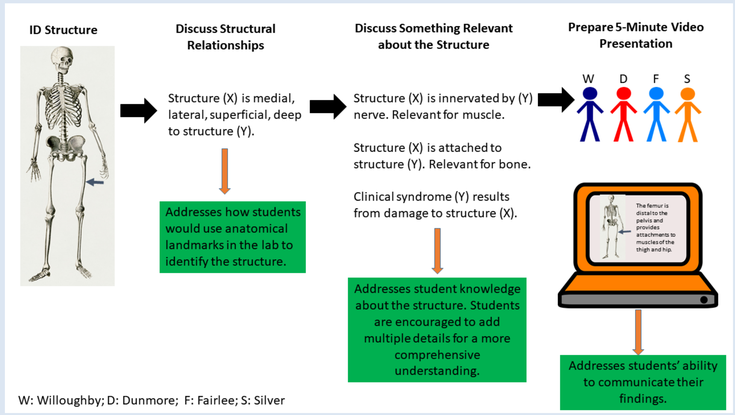
For ease of contact tracing should the need arise, the Office of Medical School Education split the first-year class into four communities (Dunmore, Fairlee, Silver, and Willoughby) of 31 students. Each community had at least one dissecting opportunity per Block.

*Thirty-two peer teaching groups consisting of 4 students each was established.

*Each peer teaching group had a member from one of the 4 communities. This allowed students from different communities an opportunity to meet and build friendships and it ensured that a member from each group had participated in each in-person dissection.

*Student groups were assigned 4-5 anatomical structures to label and discuss (see figure below).

*Cadaver-based images were provided for students to label.



The peer leader of each group was responsible for:
1. Creating a video presentation using Camtasia, software designed for creating video tutorials.
2. Uploading the video to Microsoft Teams.

All students were expected to review at least one peer teaching video/assignment and provide meaningful feedback to the members using a page dedicated to this in VicPortal.

Faculty were assigned 6-8 video presentations to review/assignment and utilized a grading template to provide feedback to student groups. Faculty and student feedback was posted in Teams." as that is what was actually done

Peer Teaching Topics and Student Performance

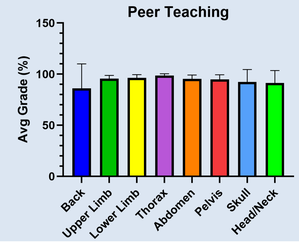
Students completed a total of 8 peer teaching exercises. These exercises accompanied each of the blocks during FoCS. See below the break down of the peer teaching assignments:

Topic	Block 2 Back	Block 2 Upper Limb	Block 3 Lower Limb	Block 4 Thorax	Block 5 Abdomen/Pelvis	Block 6 Head/Neck
Peer Teaching Assignments	1	1	1	1	2	2
Example Subtopics for Assignments	Superficial Back, Vertebral Column	Axilla Forearm Flexors	Gluteal Region Anterior Leg	Heart Superior Mediastinum	Gut Viscera Pelvic Anatomy	Skull Anatomy Orbit

Each structure that students were expected to identify in any block was included in the peer teaching assignment.

Students were provided with information on the groups and their assigned content so they could review any/all information they wished.

The data in the figure on the right represents averages from student group performance.



	Back	Upper Limb	Lower Limb	Thorax	Abdomen	Pelvis	Skull	Head/Neck
Average	86.2	95.7	96.4	98.5	95.3	94.8	92.5	91.4
SD	23.9	3.1	3.2	1.9	3.9	4.6	12.1	12.1

Preliminary Student Feedback

Several students indicated that they were spending hours re-doing their videos. Given these setbacks, we moved from a video presentation format to a power point presentation format in the mid-point of the course.

Six students participated in a virtual 45-minute focus session at the end of the course. Students were asked to provide feedback on the structure and learning opportunities from the peer teaching experience. Some major themes included the following:

Strengths:
1. Faculty care about student learning in the course.
2. Students appreciated faculty feedback on their work, but desired more of it.

Opportunities for Improvement:
1. Students felt that peer learning was most valuable in the lab environment.
2. Students were concerned with the accuracy of peer-provided information.
3. The timing of the peer teaching activities came too late in the block to have an perceived utility.
4. Students preferred submitting their materials on VicPortal as opposed to Microsoft Teams.
5. Students felt at times that the activity was more like busy work.

Future Directions

To address some of the concerns brought up by students, the following are improvements which can be implemented.

1. Accuracy of information being taught---students accomplish the activity with faculty involvement.
2. Peer teach in real time---students use cadaver-based images to teach their peers about structures they dissected.
3. Survey all students to determine whether anticipated learning outcomes were achieved.
4. Provide students with better training sessions/materials on the editing options of Camtasia.
5. Better communication to students on the importance of peer teaching.