Designing Peer Support for Students during COVID-19

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Teaching courses in medical laboratory science, an undergraduate clinical healthcare program, is a hands-on job. Preparing students to master diagnostic laboratory testing procedures requires hours of teaching and skills observation each day. The senior clinical year schedule is rigorous, with students spending nearly 30 hours on campus each week. Outside of classes, students consistently work through notes and assignments, popping their head into my office to check understanding whenever necessary. I have an open-door policy for students to visit my office, as do all faculty in our program.

In early March of 2020, I parked myself in the front of 25 senior level medical laboratory science students and settled in for a two-hour lecture block. Pulling up my lecture slides, I delivered a lecture on a familiar concept that I had discussed each spring for the past 5 years. At the end of the class, we reviewed case studies that I assigned for homework. Next, we moved into a laboratory session to apply what we had discussed in lecture. This was business as usual.

Before the end of the week, our university had closed campus buildings for instruction, and all courses moved to online platforms. Hospitals cancelled rotations for all students in our program as laboratory leaders laid plans to provide testing for surges of COVID-19 patients. We were unable to meet with students in person, and discouraged students from meeting in small groups. While these decisions were necessary to slow the spread of COVID-19, it changed the instructional landscape for our program for the remainder of the spring and summer semesters. We all held our breath (faculty and students) until graduation in August.

Heading into a new cohort of clinical year students, Fall Semester of 2020 marked a change from “survival” teaching during a pandemic to figuring out how to thrive as a teacher in the pandemic. As I planned to teach my major course series for the fall, Clinical Hematology, I knew that the structure of the course series would need to be vastly different for students to succeed. In prior semesters, this course series had been taught as a traditional face-to-face lecture with corresponding lab sessions. The new adapted COVID-19 schedule was a hybrid format. Each week of instruction included asynchronous online lecture content and one synchronous online recitation session. Competency assessment for critical laboratory skills remained essential. Therefore, the adapted course schedule also included a reduced number of laboratory sessions to teach and assess competency of required basic skills, while accommodating social distancing measures.

Despite feeling fortunate for the opportunity to observe essential laboratory skills in person, I hated the thought of students trying to work through such difficult lecture material on their own, without the real-time support of faculty or fellow students. Given my previous reliance upon small group discussion, I wanted to replace the discussions that had traditionally occurred in class with tasks designed to retain small group interaction. Without the structure of regular course meetings, I also wanted to anchor the weekly course schedule with benchmarks to ensure students were moving through the content at an acceptable pace.

To begin each week, I wanted to give students a safe space to work through difficult concepts from the textbook and lectures together. I introduced a "friction" discussion board, a blend of "final word" and "muddiest point" discussion board protocols. As an initial post, students shared a passage from the reading or lecture that was creating friction in their understanding. For a response, students researched and replied to a classmate's friction point, offering an interpretation and additional resources. After, each student returned to the discussion board to review the reply to their post, marking their thread as "resolved" or as "I need additional help". The purpose of this board was multifold – it facilitated student engagement with the course materials in an intentional way before the weekly synchronous recitation session, and it provided a snapshot of where I should focus my efforts during the session to answer any lingering questions. This anchor was a valuable tool to help the students and me make the most of our limited synchronous time together.

My second challenge was to modify the case-based teaching methods that I used during my traditional lecture courses into online group projects. I wanted students to have the support of working through difficult case studies in a group, but I needed to maintain debriefing about each case together during recitation. From past experience, I knew that adding group work to a course could be stressful for students, so for the groups to be functional, they required careful design. I sent surveys to the students to inquire about their most convenient time to work in small groups, their work habits, and work schedules. Using this information, and what I knew about each student's academic strengths/weaknesses, I assigned students to small working groups. In my survey, I asked students what they liked best/worst about working in groups, and what their greatest fear would be about working in a group. The overwhelming response was that students feared being stuck with the "brunt" of the work every week. To eliminate this concern, I decided that it would be best if students had assigned rotating roles. The roles were Reporter (wrote case summary and presented during synchronous online recitation), Facilitator (was responsible for contacting me to ask for reflex test results), and Coordinator (set group meetings, take notes). These role assignments rotated weekly to ensure an equitable division of labor amongst the group.

Due to my already limited time availability, I knew it would be impossible as an instructor to be present during each small group meeting, but that I still wanted to facilitate group meeting and communication. To accomplish this, I decided to divide students into small working groups using the channel function in Microsoft Teams to provide a space to meet and work both synchronously and asynchronously. I assigned each group 2 case studies every week by adding

the files to a folder in each group's Teams channel. Each patient case study provided basic screening laboratory results. Students were required to review the case and to ask for appropriate reflex testing using the messaging feature in Teams. This allowed me to be more responsive to requests because I often stay logged into Teams on my computer while working and carry the mobile app on my phone. In response to each group's request, I would provide results if the request was appropriate - sometimes this would lead the group to a diagnosis and other times it would send them back to the drawing board to think. When they felt that they had reached a solution, each group wrote up their diagnosis and posted it to the discussion board in Canvas, and then presented it during our synchronous online recitation meeting. The focus for grading was on effort and on making decisions that were logical, not on whether their diagnosis was 100% accurate. No group received the exact same diagnoses to work through, although closely related. Inaccurate diagnoses opened the door for important discussions regarding the variability in clinical presentation for patients with the similar diagnoses, using lab testing to distinguish differential diagnoses, and common diagnostic errors.

Feedback from the semester was terrific. Students did not just survive – they thrived! Although COVID-19 presented many difficult lessons, I am grateful for the push to re-design the learning activities in this course. I will continue to use this discussion board "friction" protocol to engage students with independent asynchronous work such as course readings or online lectures, regardless of the delivery format for the course. Because the conversations from the discussion board were student-driven outside of the classroom, I received a window into the connections and questions that arose for students organically as they worked through the reading and lecture material without my intervention. Surprisingly, the themes that arose from their work together included concepts that I had previously considered too advanced or abstract to introduce into the course.

Likewise, I will continue to use the new format for case-based learning. Providing the opportunity to work through case studies in a stepwise manner outside of the classroom was more effective than my presenting each case in its entirety to the group for discussion during the lecture. The new format required that student groups engage deeper with the case studies, taking active ownership in the interpretation and decision-making steps. Providing role assignments for each group member also required that each student fully participate in the activity.

Students met and exceeded expectations and levels of competency for this content due to this redesign. Since the original development phase of these learning activities, I have used the "friction" board discussion protocol and a variation of the case study protocol in a different course. I look forward to improving on elements of this original design for my courses this academic year.