Abstract

From February 2020, the COVID-19 pandemic led to closures of educational institutions to reduce the spread of infectious disease. This forced the U.S. education system into a massive experiment with online education. Despite conducting online bioethics education for nearly twenty years, our bioethics program, a joint endeavor of Clarkson University and Icahn School of Medicine at Mount Sinai, was not immune to this disruption because our curriculum features intensive, one-week onsite courses. Even in the face of historic disruptions, it is vital to ensure minimal interruptions to teaching and assessing students to provide effective education. This paper reviews the steps we took to successfully convert the onsite components of our curriculum to a synchronous online format, and it focuses on how we preserved instruction and assessment of practical skills that comprise these courses’ core. It also explains how we fostered interactive classroom environments.

Keywords COVID-19 adaptation · Bioethics · Onsite-to-online conversion · Simulated patient

Introduction

From February 2020, the COVID-19 pandemic led to closures of educational institutions to reduce the spread of infectious disease (Sahu 2020). This forced the U.S. education system into a massive experiment with online education. Our bioethics program, a joint endeavor of Clarkson University and Icahn School of Medicine at Mount Sinai, and a leader in online bioethics education for nearly twenty years, was not immune to this disruption because our curriculum features intensive, one-week

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onsite courses. Even though historic disruptions may force a shift to online learning, it is vital to ensure minimal interruptions to the instruction and assessment of students that is essential for effective education (Sahu 2020).

Our bioethics program of Clarkson University and Icahn School of Medicine at Mount Sinai offers a Master of Science degree in Bioethics and an advanced certificate in Clinical Ethics Consultation. The curriculum is delivered in a hybrid format, with a combination of onsite and asynchronous online courses. Students are required to complete three onsite courses for the Master of Science degree: Proseminar; Practicum in clinical ethics; Capstone. (In addition to a specialization in clinical ethics, our program offers them in both research ethics and public health.)

In 2020, the onsite Practicum and Capstone courses coincided with the surging COVID-19 pandemic in the northeast U.S., necessitating rapid conversion to an online format. Given that practical learning activities and assessments, like Standardized Patient simulations, are the hallmarks of both courses, their conversion to a virtual format posed a significant challenge.

This paper reviews the steps we took to successfully convert the onsite components of our curriculum to a synchronous online format, and it focuses on how we preserved instruction and assessment of practical skills that comprise these courses’ core. It describes how we combined the online learning platform Moodle and the video conferencing platform Zoom to replicate the courses’ key elements, including the simulation exercises. It also explains how we fostered interactive classroom environments.

Curricula of practicum and capstone courses

The variety of practical, experiential learning activities composing the onsite clinical ethics Practicum and Capstone courses make them the most logistically complex components of our curriculum. These week-long, eight-hour per day courses primarily cultivate and test our students’ ability to integrate theoretical knowledge acquired earlier in their studies with the development of practical skills a clinical ethicist needs. The Capstone also evaluates students’ skill in presenting their scholarship and teaching bioethics. The Practicum formatively evaluates their competencies, while the Capstone is a summative assessment that students must pass to earn their master’s degree.

An important feature of the Practicum is students’ immersion in clinical environments through rounds with intensive care unit attending physicians, doctors visiting patients at home, and patient representatives. These onsite experiences expose our students to ethical dilemmas that arise in everyday clinical situations.

Both courses also feature lectures, discussions, and written assignments. Through videoconferencing and the course learning management software, we converted these elements of our courses to an online format without sacrificing learning objectives or changing our pedagogical approach.

The principal pedagogical challenge was replicating the educational activities in which students practice applying clinical moral reasoning and communications skills in simulated encounters and demonstrate their presentation skills. The Standardized
Patient (SP) simulations were most important to convert but posed the greatest challenge. SPs are independent specialists (usually actors) trained to portray accurately, realistically, and consistently the role of patients, doctors, or family members in simulated encounters with clinician trainees. Faculty observers of SP encounters can rely on the constancy of performance to permit consistent evaluation and comparison of trainee performance. Our SPs are also trained to give students nuanced feedback on interpersonal communication skills and fill out comprehensive evaluation checklists. In our bioethics program, SPs are integral to our ethics consultation training, and we are fortunate to cast these roles from the community of professional New York City actors that specialize in human simulation technique.

Beyond this challenge, we faced the obstacle of potential screen fatigue in adapting a pair of courses that featured a great deal of personal interaction to a virtual format. Table 1 summarizes the educational activities used in these two courses and identifies whether they are formative or summative assessments.

In what follows, we first describe the practical, experiential learning activities that we prioritized preserving in converting the Practicum and Capstone to online formats. (These are the activities identified in the “Simulated Encounters” and “Student Presentation” rows of Table 1.) Next, we explain the contextual milieu we had

| Educational Activity | Practicum Assessment | Capstone Assessment |
|----------------------|----------------------|---------------------|
| Simulated Encounters | Conducting an Interview, Communication Skills Session, Mock Ethics Committee Meetings, Standardized Patients | Formative Formative Formative Formative Summative | Standardized Patients Summative |
| Student Presentations | Clinical Moral Reasoning, Organ Transplantation, When is a Decision Voluntary?, Justice in the Pandemic, Professional Development | Master’s Project Teaching Clinical Moral Reasoning, Assessing Decisional Capacity, Professional Development |
| Lectures | Student Course Feedback | Student Program Feedback |
| Social | Welcome and Introductions | Welcome and Introductions, Graduation Celebration |
| Cases Group Discussion | Ethics Consults Throughout course | Writing a consult note | Summative Policy exercise Summative |
to account for in converting the intensive onsite courses to online formats. We then identify the instructional design goals that guided us and explain the steps we took to implement the conversion. We conclude by reflecting on the lessons we learned from this process.

Educational activities

Student presentations

As part of the Capstone, students are required to give two presentations, one assessing whether the graduating students can teach topics outside of their specialty. The students have two weeks to develop a PowerPoint presentation on an assigned topic. This year’s topics included using conscientious objection to opt out of childhood vaccination and the ethics of right to try laws. To assess their skills in presenting independent scholarship, the other presentation is on their master’s Project. These projects take several forms: a traditional academic thesis; a curriculum for a new course; an empirical research project on an issue in bioethics. For both presentations, the students have twenty minutes to summarize the main idea clearly and concisely for non-specialists. A ten-minute question and answer session with peers and faculty follows. Faculty use a standardized rubric, implemented as a checklist, to evaluate the presentations and answers. Non-department faculty and alumni may attend these presentations, but do not participate in the evaluations.

Simulated encounters

The various simulated encounters in the Practicum and Capstone are the main ways in which we build and assess competency in students’ moral reasoning. During the Practicum, these activities provide students their first opportunity to apply their knowledge of bioethics theory and reasoning models to actual encounters that are based on real-life ethical dilemmas while honing their interpersonal communication skills. Then, at the Capstone, the simulated encounters are one of the most important means to assess that our graduates have the required competencies of a practicing bioethicist.

Conducting an interview

This is a formative activity in the Practicum in which students practice applying their clinical moral reasoning skills by interviewing a clinician, patient, or family member played by bioethics faculty from Icahn School of Medicine at Mount Sinai. Students complete this exercise twice during the Practicum and its aim is for students to learn how to structure an interview to elicit relevant information about a case and then use that information to identify and resolve the case’s ethical dilemma. There are seven different cases that students rotate through. Under the observation of another faculty member, students take turns interviewing the same person.
Communication skills session

This is another formative activity in the Practicum; students practice applying their clinical moral reasoning skills to a case by interviewing an SP. This is distinctive because an educator in interpersonal communication leads it, and a standardized patient takes the clinician/patient/family role; a Bioethics faculty member also observes. Using an SP for these sessions ensures that students’ interview experiences are comparable as the SP’s responses will only vary with students’ questions. Students may call “timeout” if unsure how to proceed with the case to review the interview’s progress or strategize next steps with their peers and observing faculty. The communication educator may also call “timeout” to praise or correct student performance. Because this activity also focuses on learning, it is not evaluated, but the communication educator critiques the students’ communication style, offering advice on active listening, body language, questioning style, and displaying empathy, all skills that help build rapport with interview subjects to facilitate case resolution. The SPs also provide students feedback on their emotional experience during the different stages of the interview.

Mock ethics committee meeting

In the Mock Ethics Committee Meeting activity, clinicians from the Mount Sinai Health System come to the Practicum to present cases that they brought to the full ethics committee. The Mock Ethics Committee Meeting extends the challenge embodied in the Conducting an Interview and Communication Skills Session activities. Like them, this activity requires students to apply moral reasoning skills to a case, but they must work as a team to carry out the analysis in real-time. They cannot interrupt the activity to confer with faculty observers, and they must conclude the ethics committee meeting within one hour. The requirement for real-time analysis and the time limit creates a high degree of verisimilitude to real ethics committee meetings. In this formative assessment, students receive feedback on how they conducted the meeting and the validity of their resolution.

Standardized patient encounters

The SP Encounter activities are common to the Practicum and the Capstone. It serves as the major summative assessment of the Practicum and Capstone, evaluating students’ clinical moral reasoning and interpersonal communication skills under controlled conditions in Icahn School of Medicine at Mount Sinai’s Morchard Center for Clinical Excellence. This center was the first of its kind facility to permit medical school faculty to observe and assess students’ interpersonal communication skills in SP encounters in a high-fidelity clinical setting in real-time. In each course, students complete two SP encounters under closed-circuit observation. Gligorov, et al. describe our pedagogy for developing and assessing these ethical consultation skills (2015). The actors cast in the SP roles engage in rigorous role-play training with the communication educator to prepare for a range of student skill levels. The ethical issues
selected for each of these standardized exercises are based on topics taught in the courses completed before the Practicum and Capstone. Two Bioethics faculty watch the encounters in real-time and evaluate whether the student was able to identify the primary ethical dilemma, identify the dominant ethical principles, and provide a resolution. To provide feedback to the students, the faculty complete a checklist that prompts them to assess specific elements of the student’s performance. The SP actor uses a checklist to evaluate students’ communication skills demonstrated during the encounter. SP Encounters are recorded and reviewed to improve the consultation cases and refine the faculty assessment instrument.

**Contextual milieu**

During the first week of March 2020, we began to plan for the cancellation of onsite courses by reviewing our students’ academic progress and started investigating the feasibility of converting to synchronous, online courses. By mid-March, our institutions suspended in-person courses indefinitely. Contingency had become reality, and we began designing the conversion. First, we had to establish how many students would enroll in each course. For the clinical Practicum, some students choose to defer enrollment until 2021, hoping to have the onsite experience or to accommodate pandemic associated circumstances. Three students enrolled, which was smaller than our average enrollment of five. Seven students enrolled in the Capstone, consistent with historical enrollments.

**Instructional technology**

We had two-and-a-half months to complete the course-conversion process. Timeline, budget, and IT implementation constraints precluded us from acquiring new instructional technologies. However, because much of our curriculum is online, we had existing instructional technology in place. Moodle is the learning management system that our bioethics program uses for its asynchronous, online courses. Because the Practicum and Capstone are onsite, the past Moodle websites for these courses included pre-arrival information, preparatory readings, schedules, and links to submit written assignments.

**Student adaptation**

Several factors have been identified in distance learning that affect student satisfaction and performance, including communication, social interaction, and self-efficacy in the use of technology and coursework (Bolliger and Wasilik 2009). Even though we tried to select technology that was simple for students to use, we needed to anticipate potential challenges they might face adapting to synchronous, online courses.

First, live web conferencing uses large quantities of bandwidth, which increases with the number of meeting participants, so students need to have high-speed internet. We contacted our students to remind them that our bioethics program’s minimum technology expectations for online learners included wired high-speed internet...
Moving intensive onsite courses online: responding to COVID-19…

We were concerned that this might be a barrier for students from low- and middle-income countries. Only one student did not have wired high-speed internet and proposed to use their smartphone’s 4G LTE mobile data network as an alternative. We discouraged this but conceded to its use.

Second, even though we judged Zoom to be an intuitive web conference software platform, we anticipated that there would be a learning curve for students and faculty. This software had not been used in previous courses, and they may not have used it in other settings.

Last, our bioethics program draws students from different regions of the United States and the world. This meant that we had to be cognizant that our students would be participating across multiple time-zones. All but one of the students were participating from the Eastern- and Central-Daylight-Time Zones (EDT and CDT), so there was only a one-hour time difference for those students, who would not require accommodations to the schedule. However, one Capstone student resided in Ukraine, which is +7 hours to EDT. We had to be considerate of this in designing the schedule for the master’s Project presentations.

Online delivery goals

The overarching goal was to create online courses that closely replicate the onsite experience. This entailed the need to conduct simultaneous activities, such as the standardized patient encounters, interview skill development exercises, and student exit interviews.

Students find these week-long onsite intensive courses grueling; the abrupt change to an unproven online format coupled with personal and professional disruptions due to the pandemic were expected to be sources of additional stress, as they require more self-discipline and time commitment from the students (Grant and Thornton 2007). For this reason, we emphasized making the course progression clear to the students, because communicating course requirements can aid in the most desirable educational outcomes (Grant and Thornton 2007).

Our onsite courses require a relatively large number of supporting personnel: standardized patients; guest lecturers; evaluators for student presentations and SP encounters. There were 18 supporting personnel involved in the Practicum and 16 in the Capstone. In addition, hardcopy evaluation forms in the onsite setting needed to be converted to electronic formats. Therefore, ease of navigation of the various technology components for all participants, students, core faculty, and supporting personnel, was a key design goal. While there was not enough time to purchase additional online learning resources, understanding the capabilities of the courseware available and its limitations allowed instructors and support staff to navigate technology effectively and plan contingency measures (Cook and Dupras 2004).

Finally, as is customary with any information technology system, appropriate redundancy and disaster recovery plans were needed to maintain continuity of the courses in the event of technology or connectivity failures (Ketterer, Price, and McFadden 2007). Having solid recovery plans was important since these courses occur in the last two weeks of the university’s quarter, allowing no additional time to
reschedule activities in the event of a technology failure. In addition, the geographic dispersion of the participants left us vulnerable to local loss of connectivity.

Implementation

Curriculum modification

Activities that could not be replicated virtually, such as clinical site visits, were replaced with a series of presentations on professional topics to expand students’ skill sets. These presentations did not advance the learning objectives of the Practicum or Capstone. We took advantage of the time in the course schedules to foster skills our curriculum ordinarily cannot (writing an op-ed or grant proposal) or to reinforce skills that are in the curriculum (avoiding plagiarism, using reference managers, and interpreting scientific writing and levels of evidence).

Another modification to the Practicum curriculum was the introduction of discussion sessions analyzing notes from past cases brought to the Mount Sinai Hospital ethics learning objectives. We service. These sessions were intended to provide students more opportunities to refine their clinical moral reasoning skills under the guidance of faculty.

The smaller class sizes reduced the number of individual sessions needed and allowed for the scheduling of additional content. Normally, the Capstone’s SP encounter assessments are scheduled for Monday. In the online environment, the constraint was no longer present, allowing more scheduling flexibility.

Traditionally, a dinner for graduating students is held at the end of the fourth day of Capstone and the commencement ceremony occurs on the evening of the fifth day. Students look forward to these celebrations and the chance to socialize. Unfortunately, these events were cancelled because of state regulations limiting the size of public gatherings during the pandemic. These events were replaced with an online celebration where each student had the opportunity to speak briefly on their experience in the program and future plans. The virtual celebration allowed several instructors who teach remotely to attend.

Overall course design

The Practicum and Capstone were constructed with two primary IT tools, both standard software used throughout Clarkson University. The implementation of web conferencing has been shown to improve student understanding and social interaction between peers and instructors in online learning and was a vital component in our Practicum and Capstone (Evans and Roddenberry 2018). The university was in the process of replacing their standard webinar software with Zoom shortly before the beginning of the pandemic, so this platform was new for both students and faculty. Zoom had quickly become widely adopted for web conferencing during the pandemic, so we believed that many of our students, faculty, invited speakers, and actors would be comfortable with this platform. Because of its ease of adaptation, video conferencing has many benefits including virtually connecting breakout rooms, fos-
tering togetherness, as well as allowing for modified instruction during the pandemic while preserving the overall schedule (Epstein 2020). The virtual format allowed us to record all the sessions for the first time, enabling students to review the material more than once.

Course navigation was implemented in Moodle, which allows Zoom to be directly integrated, so we could create links to the live meetings within it. Integrating live web-conferencing technology with an online open-source learning platform, such as Moodle, created an effective learning environment that balanced human interaction with technology (Grant and Thornton 2007). We wanted software that was secure, reliable, supported by our IT department, and intuitive to use; Moodle and Zoom met these expectations. All our students had single sign-on accounts for both software applications which facilitated ease of access.

A few measures were taken to ensure courses ran smoothly and contingencies were in place in the event of technological failures. Spending time to resolve technology issues while the courses were in progress would disrupt the schedule and pedagogical flow of the content for both the students and the instructor. Several planning meetings were held with core faculty and included specific discussions on how best to deliver intensive courses and the associated interactive sessions within the capabilities of Zoom and Moodle while maintaining the onsite learning objectives. We engaged Clarkson University’s instructional design staff early in the process and benefited greatly from their expertise. Extra time was built into the schedule in case some activities had to be rescheduled due to technology failure. The plan called for recording lectures as they were being delivered so that students could view them later should they lose connectivity. For complicated evolutions which utilized multiple breakout rooms, like the SP encounters, rehearsals were conducted with faculty and support personnel to assure they understood their roles and responsibilities and test software navigation. A dedicated IT support person was engaged to be available on standby to help us quickly resolve technical issues and other IT support personnel assisted with the technical aspects of the logistically complicated activities.

Because the training period was limited to one week for each class, and people’s stamina for lengthy video conferencing is limited, we could not simply replicate the previous course schedule in an online format. Eliminating the clinical site visits allowed us to begin later in the morning and condense the daily schedule without sacrificing other key educational activities and objectives. In addition, we eliminated the working lunch to provide students an hour-long lunch away from their computer screens. We scheduled short mid-afternoon breaks to prevent Zoom fatigue, tiredness, or burnout because of overusing virtual communication platforms. Video conferencing can be more demanding for several reasons including millisecond delays, lack of non-verbal cues, and unstable internet connection (Nash 2020; Wiederhold 2020). Due to these factors, virtual communication requires increased attention, concentration, and energy, leading to fatigue faster than in-person meetings (Cranford 2020).
Conversion of specific activities

These courses employ a wide variety of educational activities and assessments as described below. Table 2 summarizes these specific activities and the associated resources/IT tools needed for implementation. Also contained in Table 2 are additional measures that were taken to facilitate each activity in the online environment and to quickly recover from technology disruptions.

With Zoom replacing the classroom and conference room settings, lectures, discussions, and student exit interviews were converted to the online environment without altering the course’s original learning objectives.

During the Capstone, the final project and teaching presentations were converted to an online format using Zoom. The students presented their projects and conducted their teaching by using the ‘share screen’ feature. In addition, the question-and-answer period for each was conducted through Zoom using the ‘raise your hand’ feature. The conversion to an online format did not necessitate alterations to the content or the duration of the presentations. The primary change was to the mechanism for student assessment. In the onsite Capstone, the faculty would complete hardcopies of a checklist and would submit them to the instructor. This year, we used Google forms to convert all the checklists to an online format. The faculty were emailed a link to the appropriate form. This conversion made the process of collecting faculty feedback more efficient than in previous years. The primary instructor for the Capstone had almost instantaneous access to the faculty scores of student presentations.

Table 2 – Implementation and Contingencies for Practicum and Capstone Educational Activities

| Educational Activity | Resources and IT Tools to Implement | Contingencies and Facilitators in the Online Environment |
|----------------------|-------------------------------------|--------------------------------------------------------|
|                      | Moodle                              | Zoom         | Google Docs | Standardized Patients | Recordings | IT Support Personnel | Instructions & Documentation | Training and Practice Sessions | Extra Time | SP Understudy |
| Simulated Encounters | X                                   | X            | X           | X           | X          | X                      | X                             | X                         | X          | X            |
| Student Presentations| X                                   | X            | X           |             |            | X                      |                              | X                         | X          | X            |
| Lectures             | X                                   | X            |             | X           | X          | X                      |                              |                           |            |              |
| Interviews           | X                                   |              |             | X           |            | X                      |                              |                           |            |              |
| Social               | X                                   |              |             |             |            | X                      |                              |                           |            |              |
| Cases                | X                                   | X            |             |             | X          | X                      |                              |                           |            |              |
| Group Discussion     | X                                   |              |             |             |            | X                      |                              |                           |            |              |
| Written Assignment   | X                                   |              |             |             |            | X                      |                              |                           |            |              |

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Mock ethics committee meeting

Practice of real-time, live clinical moral reasoning usually took the form of a “Mock Ethics Committee Meeting” in the Practicum. Because our group for this year’s course involved only three students, we modified the activity into a “Mock Ethics Consultation” as these typically only have two or three consultants present. This year, despite the COVID-19 pandemic, we were still able to schedule five clinicians to present their cases via video conferencing. The switch to consults on Zoom in our online course mirrored the real-life move to online ethics consultation due to the pandemic. The Mock Ethics Consult also permitted a complementary revision for the Practicum’s written assignment. In the past, students submitted an ethics analysis of a situation they witnessed on their clinical site visits; this year, they were asked to submit an ethics consult chart note on one of their Mock Ethics Consults. This change allowed the learning objectives to be achieved without the requirement of onsite clinic visits. The main challenge we faced in the conversion of this activity was scheduling clinician presenters during an unprecedented health crisis. The fact that the consultations were online may have assisted with scheduling as our guests did not have to travel to the course site.

Conducting an interview

We were able to use our usual assortment of cases for skills practice in the “Conducting an Interview” activity. It proved simple to have a second faculty member join the session, so one faculty member could play the interviewee role while a second observed and critiqued students’ clinical moral reasoning process.

Communication skills sessions

All the interpersonal communication skills instruction was conducted on Zoom. Converting the introductory lecture on interpersonal communication skills fundamentals was simple; the faculty member used the share screen function on Zoom to lecture accompanied by a slide show. Students could ask questions and receive clarification in real time. This learning activity maintained the same learning objectives as past live iterations.

These workshops provide students a chance to practice marrying their interpersonal communication skills with their clinical reasoning ones. They interview an SP actor playing a clinician, patient, or family member with an ethical dilemma and they must help the character arrive at a conclusion about what he or she should do by assessing values, pertinent law, surrogacy decisions, and ethical principles. Each encounter is designed so students can reason to a resolution about what should be done and draw the encounter to a close. In the onsite Practicum, the SPs come to classrooms at Icahn School of Medicine at Mount Sinai, but in the online Practicum, they joined over Zoom.

The interactive interpersonal skills workshops posed more logistical challenges than the lecture. As we were developing our strategy to use Zoom as a major feature in our conversion of the Practicum, the security of the meetings became an issue due
to the ‘Zoombombing’ phenomenon. Certain security features were set by default for Zoom meetings hosted by our institution. Specifically, only other Clarkson University accounts could join a meeting through a link; if you did not have a Clarkson University account, you needed the meeting ID number and password to join. We set up the Zoom sessions with passwords to accommodate the SPs. And, we had to confirm with the SPs and guest lecturers that they understood how to join a meeting this way. SPs typically rehearse their characters for us in person at the Morchand Center, so rehearsal occurred on Zoom, which allowed us to verify their fluency with the technology.

Our first online SP workshop followed the same format as past in-person workshops: students took turns in the role of interviewer to practice their interview skills, and they or the faculty could pause the interview to ask questions and review their progress. Because these sessions maintained our original learning objectives despite the change in delivery mode, they fostered the same learning outcomes in our students as the in-person format.

During past Practica, students expressed a wish to conduct a whole interview on their own, from beginning to end, without taking turns with their peers. The volume of students and the schedule precluded this in the past, but for this online Practicum, we decided to experiment and include this in our curriculum. These independent workshops were scheduled simultaneous to the ethical analysis review of past Mount Sinai Hospital ethics cases.

To facilitate this session, students had to leave that Zoom meeting to join a different Zoom meeting for the independent workshop. This meant that we had to have two Zoom links in that day’s Moodle module, while ensuring that students would not be confused about which meeting they were supposed to be in and at what time. Setting up a second Zoom meeting also meant that a second faculty member had to host the independent communication skills workshop; this was easy to do. The Moodle module also had to be clear about when students should leave the ethical analysis exercise meeting to enter their private workshop meeting and return to the former. Finally, these sessions had to be private, so students couldn’t join another student’s session and learn the case resolution before they started - that would undermine the workshop’s educational value. Because we couldn’t start a new meeting for each workshop session, we had to restrict access to the Zoom meeting to ensure privacy and integrity. To do this, we created three outgoing Moodle links that all directed to the same Zoom meeting and used a Moodle function to restrict their visibility to students - they could only see the link when it was their turn for the independent workshop. A connectivity issue on the part of an SP made one private session go over time. To prevent the next student from interrupting, one of the faculty members in the session had to update the time restriction on Moodle and communicate the change of schedule to the next student. This response worked surprisingly well.

These independent workshops were an excellent addition to the curriculum because it most closely approximated the SP assessment exercise described in the next section, and it helped students know what to expect in it. In addition, solving the ethical dilemma without aid from classmates boosted their confidence for the SP assessment. Finally, because the independent workshops were recorded on Zoom, students could receive links to the recording to review their performance before the
assessments, which allowed for a means to improve student learning and engagement with the material (Nikopoulou-Smyrni and Nikopoulos 2010, Brame 2016). If we can scale the independent workshops to our in-person Practicum, we hope to make this a permanent feature of the curriculum. It may not be possible to provide students with video recordings at the in-person Practicum, but many classrooms are being renovated to have lecture-capture technology, so this may be possible.

**SP encounters**

The SP encounters are one of the distinguishing features of the Practicum and Capstone and, in our opinion, one of the best ways to assess a student’s competence in the knowledge and skills a bioethicist should possess. Students stand in a hallway outside a simulated examination room, and they are given a brief “presenting” document that tells them the name of the person they are meeting and basic details about the reason for the consultation. Then, students enter the examination room and conduct a clinical ethics consultation with an SP over 20 min, while being observed by faculty on a closed-circuit video. Faculty use a checklist to score the encounters. These encounters are also recorded so students can review their performance alongside their scored checklist. Recreating this assessment exercise on Zoom was the essential and biggest challenge to successfully converting the Practicum and Capstone to an online format.

We used Zoom’s breakout rooms and recording features to recreate the assessment. We created a special Zoom meeting link for these assessment exercises so we could configure the meeting in advance. We first settled on how many breakout rooms we would need: five total - two for the exam rooms, one for a student lounge, one for a faculty lounge, and one for an SP lounge. We needed two exam rooms because each student must complete two separate SP encounters as part of the assessment, each with a different case portrayed by a different SP. We needed a lounge for students to wait in before the encounters began. This space would be used to brief students on what to expect during the assessment. An SP lounge provided a place that we could move SPs to in between encounters to give them notes on their performance, which we didn’t want to record in the exam room. And we needed a faculty lounge so that faculty who were observing and scoring the SP encounters would also have a space to confer on student performance and what feedback to provide without being recorded. We consulted our instructional designers to review the meeting set-up.

Once we had the Zoom meeting space created, we needed to establish the crew to host the meeting and be responsible for moving students, SPs, and faculty between the relevant breakout rooms. The meeting hosts cannot record what is occurring in a breakout room that they are not in; the meeting host had to remain in the main Zoom meeting space in case technical difficulties caused a student or faculty member to lose connection and rejoin the meeting - the host would have to send him or her back to the right breakout room. In addition, the host would use a broadcast message function to tell each breakout room to begin simultaneously. That meant that we needed a host for each breakout room to record the session and to make time announcements. Our bioethics program Director, the Senior Graduate Program Coordinator, and the campus IT Director volunteered to assume these roles. Finally, we needed someone to post the “presenting” information in Zoom’s chat window right after students were
moved into the SP encounter room. We decided not to ask the breakout room hosts to do that to minimize distractions, so they would not forget to start recording; we asked the faculty evaluators to post the “presenting” information. Several of the crew members had never been involved with the SP encounters before. To ensure they understood their roles, we composed a manual that identified each person’s role and included a time-coded schematic for each session. The manual included a step-by-step guide for when and where students, faculty, and SPs should be moved, when the breakout room host should start recording, and a time-coded script for the timing announcements. This manual was an asset for the SP encounter sessions.

Several steps were taken to ensure the sessions ran smoothly and we could recover quickly in the event of technology failures. To be prepared for connectivity issues that interrupted an SP encounter, we padded the schedule for the sessions. We inserted a 30-minute buffer between the two groups of students. In addition, the manual contained email addresses and cell phone numbers for the crew and faculty in case an alternate means of communication was needed. Once we had the Zoom meeting prepared with breakout rooms and the crew identified, we conducted a rehearsal so that everyone understood their role and how to use the technology to perform it.

We were pleased with how closely this modality approximated the in-person SP encounters. One student did lose connectivity in the middle of his encounter, and we needed to use part of the time buffer to finish his session.

Conclusions

Both courses ran smoothly with only a few minor technical problems due to student computer issues that were easily resolved. We achieved our overarching goal of keeping our students on track in their degree programs without compromising the learning objectives.

During post-course interviews, student feedback was generally positive about the fully online delivery format. They identified several benefits including minimizing travel time and cost and better accommodation of students with physical disabilities. Working students could meet emergent professional obligations by being able to view recorded lectures later. Students recognized and appreciated the careful attention in designing Moodle for ease of navigation and the individualized attention received due to the small class size.

In a post-course review meeting, faculty stated that they increased their proficiency with the various IT platforms. For the mock ethics consult meetings, the change from a large group activity to a small group activity was judged to better prepare students for the associated written assignment and was more consistent with other courses in the curriculum. While students were positive about the individualized attention received, faculty felt that larger class sizes were more beneficial as this allowed richer discussions. Faculty noted that the online format reduced the opportunity for informal social and professional interaction among the students, which is an important part of the onsite courses. The faculty has mixed opinions on the measures taken to mitigate technical difficulties with the majority stating that they felt the additional effort was worthwhile. However, there was agreement that our program is now bet-
ter positioned to maintain continuity of operations during the ongoing COVID-19 pandemic and into the future.

We learned several important lessons from this emergency conversion. First, recording education sessions is valuable because it allows students who are absent for a lecture to access it and to review their performance in practical learning activities. We will explore how we can incorporate this into future onsite courses. Second, using Google Forms to collect faculty evaluations and feedback for students was more efficient than scanning paper documents and manually entering scores in a spreadsheet. In addition, it enabled us to return feedback to students sooner. This will be valuable for future students who enroll in the Practicum and Capstone in consecutive weeks. Third, a manual that provides instructions for personnel that are unfamiliar with our curriculum is an invaluable resource, and we will develop manuals for other Practicum courses if we need to convert them to the online format. In fact, it may be useful to develop an onsite course manual for students because the onsite courses are not their regular mode of instruction. Fourth, offering guest speakers the option to present virtually can reduce time and travel costs, which may allow those to participate whose schedules otherwise preclude it. Finally, students in the Practicum derived great benefit from the independent interpersonal communication skills workshops - they were better prepared for and more confident about their SP assessments. We will try to preserve this feature in the onsite Practicum and extend it to other courses. Going forward, we intend to examine other onsite and online courses in our curriculum to identify primary learning objectives that support the Core Competencies specified by the ASBH and to determine how those competencies can continue to be achieved using online learning platforms.

Ultimately, four aims guided our conversion of the Practicum and Capstone: (1) preserve the pedagogical goal of fostering practical skills in our students through replication of the core practical learning activities in each course; (2) make the course progression clear for students; (3) ensure the different technology components are easy to navigate for students, faculty, guests, and support personnel; (4) prepare for technology disruptions. We satisfied aim 1 through the successful transition of the simulated encounters (Conducting an Interview, Communication Skills Session and Standardized Patient Encounters) and the student presentations to Zoom. By relying on Moodle as the interface for the Practicum and Capstone and arranging each day’s schedule of activities in its module structure, we ensured that students would be familiar with how to navigate the interface and easily find each day’s activities, which fulfilled aim 2. Reliance on Moodle also partially satisfied aim 3 for students. Aim 3 was fully achieved by using Zoom and its “link to meeting” functionality, which allowed all participants to join meetings with one click. In addition, having a rehearsal for the SP encounters gave faculty and support personnel familiarity with the Zoom technology and the breakout rooms used for that activity. Finally, by recording the learning activities and building flexibility into the schedule, we met aim 4, both of which turned out to be necessary in the courses. The persistence of the pandemic meant that an immediate return to onsite courses for 2021 and 2022 has not been possible. This experience gave us confidence that we can convert other onsite courses in our program, as needed, and continue to achieve its pedagogical goals.
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