Educating pharmacy students through a pandemic: Reflecting on our COVID-19 experience

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ARTICLE INFO	ABSTRACT
Keywords COVID-19 Education Curriculum Continuity of education	The impact of the COVID-19 pandemic on pharmacy education worldwide has been immense, affecting students, educators and regulatory agencies. Pharmacy programmes have had to rapidly adapt in their delivery of education, maintaining standards while also ensuring the safety of all stakeholders. In this commentary, we describe the challenges, compromises and solutions adopted by our institution throughout the pandemic, the lessons learnt, adaptive measures taken, and strategies to develop and future-proof our curricula.

1. Introduction

The World Health Organisation declared the SARS-CoV-2 outbreak, known as COVID-19, a pandemic on March 11, 2020. On the following day, March 12, 2020, the Irish Government announced that all universities were to close campuses. Since then, Ireland has had three waves of cases: April 2020 (end of Semester 2 2019/2020), October 2020 (mid Semester 1 2020/2021), and January 2021 (start of Semester 2 2020/2021). For most of this time, Ireland has been in some form of lockdown, although the Irish Government deemed higher education an essential service that could continue under specific guidance.[1]

The Royal College of Surgeons in Ireland (RCSI) University of Medicine and Health Sciences is based in Dublin, Ireland. It offers degree programmes in Medicine, Physiotherapy and Pharmacy, alongside diverse postgraduate programmes, and operates as a not-for-profit university. Most programmes have a high proportion of international students. Its 5-year integrated Master of Pharmacy (M.Pharm.) programme has an intake of approximately 60 students annually. The driving mission in response to COVID-19 was that students continued their education, that health and wellbeing were protected, that the profession was adequately served, the national effort supported, and that research continued and contributed to the scholarly response to the pandemic. Similar challenges were encountered globally, with much deliberation on the impact on education from the outset of the pandemic.[2–6] The aim

of this paper is to provide a relatively detailed description of the extent of the challenges faced in our institution, and with 15 months experience accrued, to reflect on the lessons for pharmacy educators.

2. Continuity of education

Continuity of education has been achieved in different ways since the onset of the pandemic. Campus closure in March 2020 resulted in an overnight pivot to online teaching for the remaining 6 weeks of the 2019/2020 academic year. A blended learning approach, using a combination of remote teaching using online platforms, which was predominantly used for lectures, and on-site attendance for laboratory classes and workshops that were deemed to be optimally delivered face-to-face, was implemented in September 2020 for the new academic year, aiming to retain meaningful on-campus experience. Students were advised to stay in Ireland between semesters, but some travelled overseas in December 2020 and were unable to return during the ensuing third wave. This necessitated re-calibration, with the option of continued delivery of blended learning for those in Ireland and a fully online programme for those electing to attend solely online. Of our students in Years 1–4 of the programme during Semester 2 of 2021, 55% elected to attend on-site and 45% online, with 17% connecting from overseas.

The curriculum was revised on three occasions. The first revision

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prioritised content and reimagined delivery for fully online delivery for the end of Semester 2 2019/2020. The second revision, during summer 2020 and implementing institutional direction, planned for three half-day sessions per week on-campus for years 1–3. Content of these sessions was designed to afford maximum benefit to students through in-person delivery. Others have reported similar, sustainable approaches.[3] Online content was streamed live, employing efforts to enhance digital engagement. In line with best practice, streamed content was recorded and made available to all students for later review, to facilitate those unwell due to COVID-19, having connection problems, or caring responsibilities.[7] Synchronous live sessions were scheduled to help students feel part of a community rather than communicating with a computer in isolation.[8] Pre-recorded lectures were mainly limited to guest lecturers. The amends necessitated approval by the University's Awards and Qualifications Committee, external examiner support, engagement with the Pharmaceutical Society of Ireland (PSI), and three separate revisions to the Marks and Standards documentation.

Enablers of engagement with online learning included the flipped classroom approach, small group tutorials, online breakout rooms, working on shared documents, use of an electronic whiteboard, and live polling. Breakout rooms also provided opportunities for peer-to-peer contact, which helped in building relationships and confidence.[9] Use of electronic whiteboards provided for anonymised student questions and comments, which enhanced student engagement, and was endorsed in student feedback. This was facilitated through use of Blackboard Collaborate® software, which all staff had been trained in prior to campus closure, as part of pre-emptive planning. A central Digitally Engaged Learning Hub was created, to provide ongoing help and support for staff designing online learning. It featured weekly themes, a help forum, practice space and a series of live and recorded practical workshops. The use of additional tools, such as Turning Technologies®, allowed for more seamless use of polling questions to sense-check student understanding in real-time. Student feedback indicated that the majority of staff used such methods, including polls, which encouraged engagement. Additionally, students commented that there had been significant efforts to engage them; that the use of the whiteboard encouraged students to ask questions, breakout rooms made the class interactive and that polls were both fun and engaging. The use of such software, alongside the case-based approach used within the University, has been shown to enhance student engagement.[10]

Provision of both online learning and blended delivery in 2021 necessitated the use of HyFlex technology, whereby staff engaged with some students on-campus, with simultaneous live-streaming to others. These approaches have been associated with similar student satisfaction and performance in both multiple choice and written exams, regardless of whether engaging in person or online.[11] Significant challenges were encountered adapting practical classes to facilitate on-campus learning and remote delivery. Time dedicated to practical skills was reduced, with those attending online-only periods risking lower proficiency. These risks were mitigated through HyFlex delivery alongside video-recordings of laboratory experiments. Experimental data was provided to online students, with a shift to data interpretation skills over practical skill acquisition. For example, in semester 2 of 2020, remote students were emailed prescriptions for patient-centred care laboratories in advance, mirroring national developments in practice where prescriptions were being securely transferred to pharmacies electronically.[12,13] They could then engage in interventions and practice consultations via video call, but would not use any dispensing software. As a pilot initiative, we also trialled MyDispense® among our Year 3 students, which offered them further opportunity to practice their dispensing skills, including navigating dispensing software in a virtual environment. Online laboratories have not been found to be a full substitute for in-class skills laboratories but are a useful complement and have some unique advantages.[14] Additionally, some laboratory classes cancelled in 2019/2020 were offered as a catch up in the following years' modules.

Students completing the M.Pharm. programme are required to complete two periods of supervised experiential learning, amounting to a total of twelve months.[15] This comprises a four-month block in Year 4 and an eight-month block in Year 5. Students in the incoming Year 4 embarked on their four-month placement in September 2020, with those from overseas returning to Ireland 14 days in advance to allow for quarantine. These placements are undertaken in a variety of sectors, including community, hospital, industry, and other areas such as regulation, and are coordinated by a national placement agency, the Affiliation for Pharmacy Practice Experiential Learning (APPEL), a collaboration between the three Schools of Pharmacy in Ireland. APPEL worked with the PSI to make provisions for remote experiential learning in environments where the providers were all working from home in accordance with Government guidelines. Students in the incoming Year 5 were only due to be on campus for the first semester of 2020/2021, for 12 weeks between September and December 2020, prior to their eight-month block of experiential learning. As these postgraduate students have learned to work together and have developed independent learning skills, it was envisaged that they could take responsibility for learning, similar to the requirements of mandatory continuing professional education.[16] A decision was taken to deliver their learning online. Modules were redesigned, incorporating small group work and simulation to promote self-directed learning and optimise clinical reasoning and complex consultation skills. Timetabling was mindful of the small number of students in different time zones.

A smooth transition to online and blended learning was achieved, as all students receive a laptop on registration, which meant that concerns about access to appropriate hardware were not relevant.[2,17] An early decision to use Blackboard Collaborate proved an enabler and completing the initial training of staff in advance of university closure was advantageous. Despite initial anxiety, students appreciated continuity of experiential learning. Those who undertook remote experiential learning were positive about the experience. Year 5 students engaged well with online learning, but it was a challenge to facilitate diverse time zones. The decision to facilitate both blended and fully online learning in 2021 resulted in a significant increase in staff workload.[18] Interprofessional learning was also logistically challenging[3] but was facilitated by the willingness of simulated patients to embrace the online format. Real patients also continued to contribute to teaching and assessment online.

3. Protecting student and staff health

Ongoing research, and the return of students to campus in September 2020, necessitated planning for a safe environment. The campus was prepared by controlling access, increased cleaning, installation of sanitizer dispensing stations, signage indicating traffic flow, installation of plexiglass shielding, increasing the supply of personal protective equipment, and introducing clean in, clean out protocols. Physical distancing of 2 m was implemented in all venues. A COVID-19 response plan was prepared. Both institutional and departmental COVID-19 risk assessments were developed. Mandatory COVID-19 'Return to Campus' induction training was required for everyone, alongside daily electronic sign-in and health check. A work from home directive for staff was introduced, along with division of staff into two "pods", to allow for attendance on alternate days. An office space booking system accommodated staff with on-campus teaching responsibilities outside of "pod" days.

Physical distancing had the immediate effect of reducing the capacity of all teaching facilities. The University invested in a new satellite campus to increase available teaching space, yet class size reduction across all programmes was necessary. Pharmacy classes were divided into two "learning communities".[19] Students were allocated to these communities based on personal contacts within the class, e.g., shared accommodation or transport. This was intended to help minimize the impact of any outbreaks. Students were timetabled to attend campus three times weekly within their communities, and were also limited in

accessing the library, including to expanded study spaces, to their scheduled on-campus times. The creation of learning communities increased operational workload and necessitated teaching the same material twice.

The University's Medical Centre managed the care of all students with suspected or positive COVID-19. A university-specific contact tracing system was established to quickly identify and manage close contacts. This was important to alleviate pressure on the National contact tracing system. COVID-19 screening tests were provided for students 48 hours before embarking on experiential learning placements and every 14 days thereafter. Swabs were initially processed at an off-site public testing laboratory. The School of Pharmacy and Biomolecular Sciences, in consultation with the Health Services Executive (HSE), helped the establishment of an on-site COVID-19 testing laboratory. To date, this laboratory has carried out more than 12,000 tests for all the students in the University.

A centralized COVID Control Administration team in the University coordinated the academic needs of students affected by COVID-19. Procedures were developed to manage safe exit from campus if someone developed suspected COVID-19. The administration team maintained logs of students quarantining, and advised on their date of safe return to campus. School staff supported student learning when necessary through individual follow-up, while the University Student Welfare team provided support calls for all students affected by a positive COVID-19 diagnosis. Health and safety campaigns were developed in partnership with the Students Union to encourage responsible behaviour. Weekly emails, regular virtual meetings, and updates on internal social media platforms supported messaging around campus safety. Additionally, all returning international students were collected at the airport and transported to their accommodation to minimise potential contacts.

As vaccinations became available nationally, the University advocated to central vaccine administration on behalf of students undertaking experiential learning in frontline placements, and that they be vaccinated in accordance with the national rollout of vaccines to healthcare professional cohorts. The COVID Control Administration managed relevant communications with students and maintained records of those vaccinated. The number of staff and students who had a positive COVID-19 diagnosis was very low and there were no significant outbreaks. Student compliance with safety requirements prevented campus outbreaks, which caused significant disruption in other universities.[20,21]

4. Providing an engaging experience for our students

Students' lives have been altered by the pandemic. Increased remote learning meant reduced connections with staff and fellow students. Some faced additional challenges: caring responsibilities, home-schooling, isolation, loss of income, illness, and grief. Formal strategies to support students to counteract possible burnout have been described in the literature.[22] At RCSI, all academic members of staff additionally take a mentoring role through acting as a personal tutor for a number of students, and through this mechanism, increased their contacts with tutees. Students with difficulties were referred to Student Welfare for further support. Academic Year Leads sent weekly update emails, which helped students keep connected with RCSI, especially during the initial shutdown. Full class on-line meetings were convened when issues required discussion. Engagement with online material was monitored and clear lack of engagement followed up on. This was not from a disciplinary standpoint, but rather to identify those struggling and to provide support.

Staff were especially mindful that incoming first year students would not have the 'typical' experience they would have envisaged at the beginning of their college life. The transition from second to third level education can be challenging under normal circumstances,[23] and staff recognised this would be complicated by COVID-19 restrictions.[24] A

two-week, fully online, 'arrival and integration programme' was developed for first year students. This consisted of activities in four categories; academic, social, health and well-being, and 'Passport for Success' (a formal RCSI induction programme). Examples of these activities are presented in Table 1:

First years met with their personal tutor weekly for the first two weeks, and at regular intervals thereafter. One emergent issue was that some of these students had not covered the expected breadth of material due to school closures and cancellation of state exams. Extra tutorials were delivered by academic module coordinators to address any gaps in student knowledge. At the end of each week, consolidation sessions were held online, with all staff that had taught that week attending to answer any student queries. A group project was reconfigured to promote student interaction in small groups, working together on a shared task and getting to know each other. Mid-semester student feedback indicated that first year students were settling in, were positive about their time on-campus, but missed the opportunity to interact with each other and staff. Despite limited permitted interactions, a physically distanced Christmas Lunch successfully allowed first years and staff to meet each other outside the classroom. The winter holiday was a challenging time for all students, particularly those from overseas who stayed in Ireland. RCSI partnered with the Students Union to support these students. Staff and alumni funded 1,500 Christmas gift stockings and takeaway dinners. A guide of things to do and see in Dublin at Christmas was prepared, and opportunities provided to get involved in outreach activities within the local community.

Intensive student engagement was a global phenomenon during COVID-19.[2] Not all engagement was successful. Reassurances about campus safety led to fully on-line students feeling that they were missing a campus experience. Students missed the social aspects of College life prohibited due to public health guidance, including in-person gym access, indoor catering, social activities, graduations, and events. Library access, when available, was restricted to designated time slots. Campus life was also curtailed by wider closures of non-essential businesses and entertainment venues in the city.

5. Assessment – maintaining standards

The assessment strategy for the M.Pharm. programme was designed pre-pandemic to incorporate a diverse set of assessment modalities. For the end-of-semester examinations of the academic year 2019/2020, due just weeks after the first campus closure, pragmatic decisions were made to change the planned blend of Short Note Questions (SNQ) and Multiple Choice Questions (MCQ) to single-format, unproctored, online MCQ examinations. These were set as must-pass hurdle examinations, which were not classified by grade. Year 2 and Year 3 hurdle OSCE assessments

Table 1
Summary of activities within the arrival and integration programme.

Academic	Live online lectures introducing the various modules and covering fundamental material
Social	Virtual drop-in café hosted by peers in other years of the programme
	Introductions to clubs and societies
	'Ice-breaker' sessions with peers
	Online Freshers' concert
	Virtual chat lounges hosted by peers
	Online quizzes
	'Perspectives' sessions from older students
Health and well being	Online fitness classes
	Mindfulness sessions
Passport for success	Introduction to support services in RCSI
	Introduction to personal tutors
	General RCSI orientation
	Introduction to library services
	Cultural competence/communication
	Homesickness tips and introduction to resilience

were cancelled. These decisions were influenced by the limited time to adapt assessments, limited experience of online OSCEs, and lack of examination software. Yearly grades for Years 1–3 were calculated from the examinations of the first semester alone in 2019/2020, as these preceded the pandemic. Results calculated on this basis did not differ significantly when compared to previous cohorts (Table 2).

For years 4 and 5, all originally intended assessments were retained, given placement structures and increased emphasis on continuous assessment in the senior years. A no detriment policy was applied, and the need for evidence when applying for exceptional circumstances affecting assessments was waived. Re-sit examinations for failing students were offered on two occasions, one more opportunity than would normally be given. Under these conditions all students successfully progressed to the following year.

As restrictions continued into the academic year 2020/2021, many continuous and summative assessments were adapted to online formats, including simulated clinical teaching, group project presentations, and OSCEs. The relative proportion of marks awarded to continuous assessments was increased, typically to 30% for most modules. With more time and experience, the end-of-semester 2020/2021 summative examinations were administered as proctored closed-book, Internet-access disabled, online examinations. These incorporated additional diverse question constructs, such as short answer (a paragraph or so of typed written information), very short answer (a single typed word or phrase) and hot-spot (indicating a reply via clicking the cursor on an appropriate aspect of a structure or image) questions. These allowed a richer sampling of content and more facile inclusion of content requiring graphical or structural detail, notably within the disciplines of chemistry, anatomy, and physiology. Reassuringly, performance in these examinations broadly aligned with overall performance over the preceding three academic years.

Authors have reflected on the challenges and opportunities for assessment, and how these should act as a catalyst for future innovation.[2,25] Technological innovations in the delivery of examinations have been widely adopted, and have met with varied degrees of student acceptance.[26,27] Changes to assessment procedures, both proctored and unproctored, increase student-reported stress.[28] Students found it difficult to answer calculations questions without access to rough work paper and their own calculator, which were restricted by proctoring requirements. This was addressed by separating the calculations into stand-alone papers which were proctored by watching the videos rather than using inbuilt proctoring software. Another limitation of online examinations was that free-text drawing, for example of chemical structures, was not possible with the software used. Additional reading time was provided for each format to account for student concerns about typing speed. The benefits of the more diverse question constructs in improving reliability were evident to faculty. The use of online assessment has advantages in ease of marking and maintaining data integrity. There are however limitations to online proctoring that need to be considered.[25,29] It is likely that some elements of the changes to assessment will be retained; namely use of online assessment, diverse question constructs, and open book assessments.

6. Serving the profession

Students undertaking experiential learning in Year 5 must complete it in either a community or hospital pharmacy. Placements commence in January and run to the end of August. With the emergence of COVID-19 in mid-March 2020, the outgoing Year 5 students were effectively serving as frontline healthcare workers. As frontline workers, and at increased risk of either contracting COVID-19 or being a close contact, it became apparent that this could militate against them completing the required eight-month period of experiential learning within the designated timeframe. This, in turn, would delay their eligibility to register and practice, at a time of increased demand for pharmacists. The PSI recognized the important role of pharmacy students as members of the pharmacy team, and in consultation with APPEL and the three Schools of Pharmacy in Ireland, advocated for a regulatory amendment. This amendment was introduced, which provided, due to the exceptional circumstances of the pandemic, for the requirement for eight months of practical training during 2020 to be reduced to a minimum of six months, at the discretion of the relevant School, having regard to the particular circumstances of an individual student.[30] Given the continuance of the pandemic into 2021, this provision has been extended for the 2021 training period.[31]

While regulatory amendments were an important step in facilitating student progression, all other requirements remained in place, namely; demonstration of competence in all domains of the Core Competency Framework for Pharmacists, completion of all academic elements of the M.Pharm. programme, and meeting the required standard in the Professional Registration Exam (PRE).[15] The Year 5 and APPEL teams collaborated to ensure that students and their preceptors were supported throughout the placement. Practice Educators played a key role in supporting students and senior preceptors. All Year 5 students were contacted and, if necessary, referred to Student Welfare for appropriate support, which may include the provision of direct practical and emotional support, signposting to counselling services, facilitation of virtual personal-development workshops, and the provision of information and advice regarding college regulatory processes.

Recognising that students were spending extended hours on placement serving the profession, the Year 5 team reviewed the academic requirements, introducing flexibility to the research component. Students could choose between completing either a traditional dissertation or a critically reflective paper on the role of 'evidence' during a pandemic, underpinned by an extra 60 hours spent on placement. This solution officially recognised the extra hours being undertaken by some students as placement time, while encouraging them to reflect on the challenges of providing evidence-based care when it was limited and/or conflicting.

The PRE is the national licensure examination and takes the format of an OSCE. A decision was made to deliver the PRE online, to ensure that students could enter the register in a timely fashion. Delivery of OSCE-based examinations by virtual means has been described in the pharmacy literature,[32] and in our case took the format of a 9-station OSCE, delivered to 159 candidates across three Schools of Pharmacy via the Microsoft Teams® platform. Staff blueprinted, prepared, and reviewed the OSCE stations to ensure they were suitable for online delivery. Students prepared for the new format through a mock OSCE. All supporting quality assurance processes, such as expert panel review, simulated patient and assessor training, and external examiner oversight were conducted online. No technical or procedural issues impacted on the assessment, and post-hoc analyses did not raise any quality assurance concerns. Stakeholder engagement secured a new process for electronic communication of the results to the PSI. This ensured that students could join the professional register as soon as possible and contrasted with the approach of other countries such as the United Kingdom, who cancelled their registration assessment.[2]

A smaller cohort of 20 individuals, including repeating students and non-EU pharmacists, were separately afforded the opportunity to

Table 2
Comparison of effect of using only semester one grades (19/20) to calculate year scores versus two semesters (20/21).

Overall Year Student Results	19/20 Semester 1 Only (Mean ± 95% CI)	20/21 Semester 1 + Semester 2 Results (Mean ± 95% CI)	p value
Year 1	66 (95% CI 64–69)	69 (95% CI 66–70)	0.2
Year 2	61 (95% CI 58–63)	63 (95% CI 61–66)	0.2
Year 3	63 (95% CI 60–66)	66 (95% CI 64–69)	0.1

undertake the PRE in August 2020, after their exam had been postponed from May 2020. Noting the experiences of Boursicot et al.,[33] who detailed the first use of physically distant, face-to face OSCE examinations for medical students, an 18-station OSCE was delivered. This examination ran smoothly from the perspective of all stakeholders, and resulted in additional pharmacists joining the register, which was of significance in addressing national concerns about the availability of key frontline healthcare personnel such as pharmacists during the pandemic.[13]

Students also served the profession through volunteering their services to hospital pharmacies throughout the pandemic. More recently, the Health Services Executive decided to employ student pharmacists to reconstitute vaccines in National Vaccination Clinics. A statutory instrument amendment has also allowed pharmacy students to be trained to administer vaccines in these clinics.[34]

7. Supporting the national effort

Like many regions around the world, Ireland experienced a shortage of laboratory assay reagents, such as viral transport media and lysis buffers necessary for COVID-19 testing. A shortage of these reagents led to longer waiting times for testing and hampering the test and trace approach. To help with the national effort, researchers in the School prepared the reagents from consumables available in its laboratories, according to approved protocols. These reagents facilitated COVID-19 testing at a number of hospitals across Ireland.

The School also supported research activities spanning the translational science and clinical spectrum to address the impact of COVID-19. Collectively, the School acquired almost $1.7 million in the last year in grant funding. Projects included investigating novel therapeutics for the treatment of COVID-19, understanding clots formed in the pulmonary vasculature of patients with COVID-19, medication safety during COVID-19, and facial protective personal equipment sterilisation.

7.1. Conclusion

The plans for the academic Year 2021/2022 are to maintain health and safety provisions, with the first two weeks delivered online to allow returning overseas students to quarantine, followed by a blended teaching and learning approach with online examinations. Physical distancing, mask wearing, COVID-19 screening, testing, tracking, and support are to continue. This is contingent on Government advice, which may change and necessitate a full return to campus. This would further increase the workload for staff, who have worked relentlessly to adapt the curriculum, delivering the programme in duplicate on-campus and online, with increased administration and intensive student communication. Research has continued, and indeed increased to support the efforts to understand and manage the COVID-19 pandemic. Strategic planning and innovation have also continued, with an award of significant funding from the Higher Education Authority to reimagine education and partner with enterprise to deliver new Bachelor of Science and Masters of Science programmes. The impact of all the additional work on staff is unknown, but there must be a risk of burnout.[35]

There has also been a significant impact on students.[36] Although their education has been maintained, it has not been the university experience that they expected. Again, the full impact is unknown. There is a focus on skill development within the programme, and it was a challenge to convert skills-based learning to remote delivery.[3] It remains to be seen what the impact will be on students being practice-ready in the future. Similarly, assessment processes were fair, but the reliability of these approaches remains unconfirmed.[2]

There have been positive outcomes. Staff have upskilled in providing digitally engaged online learning. This has potential to enhance teaching and learning when implemented judiciously and has a particular role in blended learning Masters programmes.[5] New-found creativity and flexibility in delivering pharmacy programmes, born out of need, will

likely continue.[37] There is a role for online patient and public involvement in education, with patients reporting that they found that they could contribute without the associated concerns about travel and available facilities to meet their needs. There are other wider implications, in that it may provide scope for supporting recognition of prior learning and therefore widening diversity in pharmacy. The interest in pharmacy as a career may have been enhanced by recognition of the important role for pharmacists providing healthcare during the pandemic. Curricula should and must evolve to incorporate necessary knowledge and skills regarding topics such as infection control and vaccine hesitancy.[38] The need to strengthen the workforce has prompted further reflection on determining competency, and a full review of workplace-based assessment and the PRE has been instigated by the board of APPEL. Pharmacy students have been embedded in the wider pharmacy team, and their role has been extended to include vaccination. This has wider benefits for the profession in concretising the full scope of practice for pharmacists.

7.2. Student voice

This pandemic we are living in has brought a myriad of obstacles which students have been forced to adapt to and overcome, with the likes of proctored online exams and at-home laboratory classes previously unimaginable. For some, this has gone by quickly; each day merges and repeats into another. For others, days have dragged on as the feelings of isolation, panic and worry have been all-consuming. Friendships, relationships and lives have been affected. Opportunities like getting the inside scoop from the years gone before us, or simply making new friends, have been difficult to preserve. Casual passing acquaintances that once were evident in the coffee places, lecture halls and libraries are gone. Outreach programmes and teaching online have made the necessary adaptions, but in reality, it just does not feel right like how it used to be. After seeing the legislative, scientific and medical advances that have been made in these exceptional circumstances, I believe students are going to be more questioning and challenging in years to come. With the introduction of the emergency legislation put in place to allow students to vaccinate, I believe it will make us think about our scope of our practice, and I would hope that that "scope" is going to be challenged a bit more in future. While we long for the chance to return to face-to-face teaching, we try our best to stay resilient and to not have our values lost in the transition.

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