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COVID19 LOCKDOWN Challenges: Teaching Animal and Veterinary Anatomy and Physiology: What did we learn! The way forward!

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In this paper we share our experience and reflect on the lessons learnt during the COVID lockdown teaching Animal and Veterinary Anatomy and Physiology to undergraduate students enrolled in – Animal science, equine science , veterinary technology, and veterinary science.

Due to COVID restriction, face to face (F2F) didactic teaching on campus was not possible; but we had to ensure that the students received the same quality of teaching and access to learning material off campus.

Our goals were to 1. move the hands-on laboratory to an online environment, 2. promote student participation and engagement, 3. promote peer collaboration among students and 4. develop resources such as prepared anatomical specimen, instruction manuals, digital images and short videos for online learning and finally the platform to use to deliver these resources.

Lt (ADInstruments), Zoom, and University in-house learning management system [LMS], Blackboard) were used as a basis for this approach. We recognised the importance of a low gradient learning curve for rapid familiarisation and evaluation of the suitability of this technology prior to its incorporation into our teaching with minimal overall response time.

Our biggest challenge was the development of resources for animal anatomy. Several simulations are available for teaching human anatomy and physiology, within *Lt*, but no material was available for animal anatomy. The other challenge was to enhance student participation online.

We embarked on the preparation of anatomical specimen pro sections, images and short videos. Laboratory lessons were organised into weekly modules and delivered either via *Lt* or the LMS. The laboratory manuals in most of the F2F classes had been exclusively instructional on a step-wise basis. These manuals were modified within the *Lt* environment to include pre-lab components (explanatory notes, images with labels or even short videos to watch), activities and extension questions for critical thinking. The new activities included live streaming of dissection of a specimen (eg. dog or sheep brain dissection) or demonstrations of a technique (eg. Measurement of packed cell volume) with real time data collection and discussions.

To achieve peer collaboration and support, students were allocated into small groups in Zoom rooms. A dedicated tutor was allocated to each of these rooms to encourage participation, support, and facilitate peer learning.

While the pandemic has reduced our ability to teach manual skills as effectively, the overall engagement of students and resource quality has improved, and we hope to evaluate and continue to use these strategies post COVID.

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