



Learning Veterinary Anatomy in the Online Mode-An Opportunity to understand Importance of Actual off-line Learning

Shilpa S. Modekar*

M.V.Sc and Ph.D. Sectional Head,
Department of Veterinary Anatomy and Histology,
KNPCVS, Shirwal, Dist. Satara (Maharashtra) India.

(Corresponding author: Shilpa S. Modekar*)

(Received: 10 March 2025; Revised: 18 April 2025; Accepted: 13 May 2025; Published online: 04 June 2025)

(Published by Research Trend)

DOI: <https://doi.org/10.65041/BiologicalForum.2025.17.6.1>

ABSTRACT: Consecutive waves of the COVID-19 pandemic made teaching and learning tasks harder for veterinary anatomy faculties and students worldwide compared to the pre pandemic scenario. Online teaching got triggered across several countries as precautionary measure against COVID-19. Educational institutions focused towards online learning platforms to continue educating the students, as many veterinary institutes. As with most teaching methods, online learning also had its own set of positives and negatives. It can be concluded that, online learning in the form of live classes and recorded videos can be included as a part of routine anatomy curriculum, but it can never be a substitute for interactive face to face classroom learning and practical session and in teaching, dissection is an irreplaceable tool in anatomy education.

Keywords: Veterinary Anatomy learning, Online education.

INTRODUCTION

Anatomy serves as the major base to understand and learn the body's structure. This basic study is the platform based on which all the other subjects get their relevancy and applicability. It is a branch of science that investigates organs, bones, structures, and cells that exist in various animals. So having thorough knowledge of Anatomy- Macro as well as Micro structures is very important. The COVID pandemic brought a situation where online classes had taken precedence over the traditional classroom teaching. Students, lecturers, and universities globally were facing several challenges due to the rapid shift to the online learning mode (Gonçalves & Capucha 2020; Sahu, 2020; Parkes & Barrs 2021; Nazeefa, 2021). Same was the case with the veterinary education institutions as well. SARS-CoV-2, the causative agent of COVID- 19, was mainly transmitted by three primary modes *i.e.*, aerosol, droplet, and contact transmission (Priyanka *et al.*, 2020; Al-Dorazi & Al-Talalwah 2021) hence taking classes by using Zoom and Google Meet platforms, where there zero-contact was the best available option hence was adopted. Taking into account the one of its own kind of situation and a totally new experience, a project was designed to conduct and measure the effectivity of virtual learning of veterinary anatomy during the said pandemic. Therefore, this study aimed to evaluate students' perspectives and attitudes regarding the sudden shift of veterinary anatomy learning from face-to-face to virtual mode during the lockdown period

as a new and challenging method used for the first time in our Maharashtra Animal and Fishery Sciences University. The present study evaluates the efficacy and utility of the interactive online anatomy labs in assisting the assimilation of anatomy and substituting dissection labs during the pandemic. The project was designed in such a manner for the KNPCVS College students under MAFSU, that the students should get maximum benefits of learning and understanding veterinary anatomy. The students in their first year of B.V.Sc and A.H were accessed for their understanding level and for the ability to perform various tasks based on the topics taught to them from various subjects of Veterinary Anatomy and conclusions were drawn from their feedbacks.

MATERIALS AND METHODS

In present study, the survey was conducted on 60 students admitted to the first year of B.V.Sc. & A.H course, during the academic year 2020-2021, at Krantisinha Nana Patil College of Veterinary Sciences, Shirwal Dist. Satara which is one of the constituent colleges of Maharashtra Animal and Fishery Sciences University, Nagpur (Maharashtra State). Live streaming, pre-recorded lecture videos were supplemented by cadaveric dissection videos, assignments etc posted in Google classrooms. It was observed that maximum students were able to access the online teaching mode. Also those who were not able to attend the lectures on the given time due to some shortcomings at their end as, internet connectivity

issues, vaccination shot scheduled at the same time of that of the lecture any other emergency, had asked their batch mates to record the lectures, which they shared amongst themselves. The recorded lecture were even beneficial to them for to see repeatedly whenever they faced any issue regarding understanding any chapter or topic. This feasibility allowed the students to access the learning material at a time of their comfort. Thus, online veterinary anatomy education offered students the accessibility of time and place in learning virtually. During this virtual teaching of veterinary anatomy survey, it was found that every student had a different learning journey and a different learning style. Some students were visual learners, while some of the students preferred to learn through audio. To enhance and to make the teaching and learning effective and understandable different tasks were given to students to access their understanding of the subject and effectivity of virtual method of teaching and learning. With its range of options and resources, the online learning system can be personalized in many ways. It is the best way to create a perfect learning environment suited to the needs of each student. Choudhary (2021). SARS-CoV-2, the causative agent of COVID-19, is mainly transmitted by three primary modes *i.e.* aerosol, droplet, and contact transmission (Priyanka *et al.*, 2020; Al-Dorazi & Al-Talalwah 2021). Hence, while taking classes using Zoom and Google Meet platforms, there was zero-contact teaching, which would otherwise had mitigated the spread of this infectious agent amongst the veterinary anatomy teachers and students. In the virtual world of veterinary anatomy, there were several online platforms to teach the students for the enhanced learning process, such as PDFs, videos, podcasts, and the students group under survey was benefited for to get an opportunity to learn through these tools which helped us plan the lectures of the topics and lessons in an effective manner. This finding corroborates with (Gautam, 2020) who states that by extending the lesson plan beyond traditional textbooks to include online resources, teachers can become more efficient educators. Several website links were shared with students to have an interactive approach in learning veterinary anatomy (Choudhary, 2021). Since online classes were attended by the students from home or location of choice, there were lesser chances of students missing out on the lectures and interesting and important topics covered related to various subjects in Anatomy.

RESULT AND DISCUSSIONS

The pandemic has made us understand the importance of being alive in different ways. It has even made us crystal clear, educating and getting educated is a method which needs timely to need based gradation in response to surrounding circumstances. The most important outcome of the present study is that, the traditional anatomy teaching method through face-to-face lectures remains the most preferred and effective teaching modality according to students. Second in terms of effectiveness and students' preference occur both the online anatomy lectures and the pre-recorded

anatomy lectures, with similar results. The self-learning by studying through the books and notes related to the veterinary anatomy subject is considered the least effective. An interesting finding is that the remote teaching methods' development has increased the active participation of students in the anatomy lessons even when the online lectures were conducted with incorporation of various comparative pictures, information presentation in the form of various tasks and assignments with available stuff at home, and making the topic more easier to understand by comparative study of various animals in under study. All the 60 students responded to survey, of which 36 students used mobile phones to access the classes. 18 students accessed the lectures over their computers/desktops, 06 students had to rely over the recorded lectures and power point presentations shared after the lecture due to internet connectivity problem. 10 students preferred the online classes with PowerPoint presentation while the rest preferred online classes with chalk and board lecture followed by PowerPoint presentation. Out of the total (n=60) respondents, majority of them experienced technical issues which hampered their online learning experience. Owing to this reason, 12 students showed preference for prerecorded videos over online live classes. 87.7% of the students opined that online classes should be included as a part veterinary anatomy curriculum. The majority of students do not believe that remote teaching can completely replace the traditional anatomy teaching method. However, one third of the students consider that the online lectures or the pre-recorded lectures could be implemented in the anatomy curricula. Furthermore, the transition from the traditional teaching method into remote methods seems to affect the students' performance at exams.

CONCLUSIONS

The study's novelty is based on the maintenance of the greater possible interaction between the teacher and students during the online anatomy lectures in contrast to the previously described usage of dissection educational videos in anatomy. This was one of it's kind of first study conducted to analyze the students' perspectives and attitudes regarding the sudden shift of veterinary anatomy teaching mode during the Covid-19 pandemic lockdown as a new and challenging method used for the first time in Veterinary Anatomy subject. Although several problems were associated with the rapid switch to the distance learning mode during the lockdown, online learning appeared to be acceptable in teaching veterinary anatomy during this pandemic crisis. The online learning of veterinary anatomy could be applied together with traditional education not as a substitute to it. To overcome the problems associated with online learning, several measurements should be conducted, including a redesign of the anatomy curriculum and learning materials by providing 3D virtual tools, more images, and videos to help understand the anatomical features. Theoretical parts can be conducted as live streaming while practical lessons should be studied in the

university after the students return back to actual classes or through interactive virtual laboratories. Additionally, students' understanding should be measured by applying several assignments before and after each lecture which has to be framed in a proper manner. This study represented a method to solicit early feedback from Veterinary Anatomy students shortly after the emergency shift to the online learning mode, which might help decision-makers for the future strategic development and implementation of online learning of veterinary anatomy as a positive step toward evolution and change. The findings reinforce the established statement that *“a teaching dissection is an irreplaceable tool in anatomy education”*. However, online lectures can definitely be made interesting by changing and modifying the way of presentations, which were well-received by the students and these can be kept on as a supplementary teaching modality and can be proven quite useful in lack of cadavers as well as during various unavoidable circumstances.

FUTURE SCOPE

The traditional anatomy teaching method remains the most preferred and effective teaching modality for students. However online veterinary anatomy lectures and pre-recorded anatomy lectures can be modified and made much more interesting by making the topics interesting by adopting various advanced tools. The remote learning cannot replace the traditional anatomy teaching method. Online lectures could be incorporated into anatomy curricula as an additional educational tool. Didactic lecture can be enhanced through the creation of online learning activities by obliging the teacher to create a well-structured course, by encouraging students towards an early engagement with the course material, and by preventing students from assuming a predominantly passive role during in-class sessions. By this the students can be engaged more actively and deeply with the course material, and this will the students to distribute their studies more evenly

throughout the term. This will definitely led to a reduction of delayed self-study and consequent ‘mass cramming’ before exams. Future research can be planned and designed through objective measurement of student learning outcomes.

Acknowledgement. The author express her sincere gratitude to the officials of KNPCVS and MAFSU University for allowing to conduct this research project. The students participation in the given research was exceptionally the best, the author even acknowledge their active participation.

Conflict of Interest. None.

REFERENCES

- Al-Dorazi, S. and Al-Talalwah, W. (2021). New clinical anatomical interpretation of COVID-19 pandemic infection. *Int. J. Morphol.*, 39(2), 635-637.
- Choudhary, O. P. (2021). Consequences of the COVID-19 pandemic on veterinary anatomy education in India. *Int. J. Morphol.*, 39(2), 623-624.
- Gautam, P. (2020). *Advantages and Disadvantages of Online Learning*. E Learning Industry <https://elearningindustry.com/advantages-and-disadvantages-online-learning>.
- Gonçalves, E. and Capucha, L. (2020). Student-centered and ICT-enabled learning models in veterinarian programs: What changed with COVID-19? *Educ Sci.*, 10, 343.
- Nazeefa, H. M. (2021). Opportunities and challenges of online anatomy teaching and learning for pre-clinical students. *J Hum Anat.*, 5, 000157.
- Parkes, R. S. and Barrs, V. R. (2021). *Interaction identified as both a challenge and a benefit in a rapid switch to online teaching during the COVID-19 pandemic*. *J Vet Med Educ.*, 48, 629–635.
- Priyanka, Choudhary, O. P., Singh, I. and Patra, G. (2020) Aerosol transmission of SARS-CoV-2: The unresolved paradox. *Travel Med. Infect.*, 37, 101869.
- Sahu, P. (2020). Closure of universities due to Coronavirus Disease 2019 (COVID-19): Impact on education and mental health of students and academic staff. *Cureus*, 12, e7541.

How to cite this article: Shilpa S. Modekar (2025). Learning Veterinary Anatomy in the Online Mode-An Opportunity to understand Importance of Actual off-line Learning. *Biological Forum*, 17(6): 01-03.