Sustaining academics during COVID-19 pandemic: The role of online teaching-learning

On 11th March 2020, the World Health Organization (WHO) declared the COVID-19 caused by the 2019 novel coronavirus (2019-nCoV) a pandemic.[1] Currently, there are more than 3 million cases and one lakh deaths reported, and still counting.[2] This has brought radical changes in all aspects of our lives. Social distancing and restrictive movement policies have markedly deranged traditional educational practices. The time course of these changes is indeterminate. These have affected conventional in-person ophthalmic education and training. There is a pressing need to innovate and implement alternative educational and assessment strategies. The COVID-19 pandemic has provided us with an opportunity to pave the way for introducing digital learning in ophthalmology.

In this letter, we discuss the various electronic resources and strategies which can be used to sustain academics during this pandemic. We also highlight some of the best practices and challenges of academics during COVID-19 pandemic.

Virtual classrooms: Distance education can be synchronous that happens in real-time, involving online studies, with the aid of chat rooms as well as asynchronous occurring through online channels without real-time interaction. A real classroom has now been replaced by the virtual classroom. Hybrid learning using both can be much more effective and are easier to use.

The flipped classroom is a simple strategy which refers to providing learning resources like articles, pre-recorded videos, and YouTube links before the class. The online classroom time is then used to deepen understanding through discussion with faculty and peers. This is a very effective way of encouraging skills such as problem-solving, critical thinking and self-directed learning.

E-seminars, case-based discussion, journal clubs, discussion on surgical techniques; clinico- epidemiological presentations can be very effectively conducted using these virtual classrooms. Discussions on counselling, patient safety, ethical dilemmas in our Ophthalmic practice which are usually caught by students while seeing the faculty on the job can now be taught in these virtual classrooms. Many effective online teaching strategies are available for free; for example: "Building a Community of Learning (Southern New Hampshire University)".[3]

The virtual classrooms can be conducted using platforms such as video conferencing (Google Hangouts Meet, Zoom, Slack, CiscoWebEx) and customizable cloud-based learning management platforms (Elias, Moodle).

Unified communication and collaboration platforms like Microsoft Teams, Google Classroom, Canvas, Blackboard allow the teachers to create educational courses, training and skill development programs.[4] They include options of workplace chat, video meeting and file storage that keeps classes organised and easy to work. They usually support the sharing of a variety of content like Word, PDF, Excel file, audio, videos etc. These also allow the tracking of student learning and assessment by using quizzes and also the rubric-based assessment of submitted assignments.

Webinars are virtual classes with a much larger audience. The biggest advantage being that learning can happen from experts all over the globe. The learning from webinars can be augmented by a prior or a follow up with department discussion in virtual classrooms. The webinars are being hosted by All India Ophthalmic society as well as many premier eye institutions using options such as YouTube Live, Gotowebinar, Zoom etc.

Open Online Course - This is a good time to encourage teachers and students to get a new skill or upgrade an existing one. Massive Open Online Courses (MOOCs) are online courses which allow flexible learning. These include platforms like Coursera, FutureLearn, Swyam, NPTEL etc. The courses may be free or may have charges for certification. These can be on a variety of topics related to ophthalmology or diverse but essential like research and publication, communication skills, personality development etc.

Blogs and virtual eye teachers: There are numerous ophthalmic blogs with a huge number of image atlas and video galleries. These can make ophthalmic learning interesting and fun. Some of the most popular sites are TimRoot Virtual eye professor (https://timroot.com), http://mrcophth.com, http://gonioscopy.org, http://www.eophtha.com, Muthusamy Virtual University of Postgraduate Ophthalmology (https://www.mvupgo.com/courses/international-council-of-ophthalmology-ico/basic-sciences-course), Retinagallery.com (https://retinagallery.com), NOVEL: Neuro-Ophthalmology Virtual Education (https://novel.utah.edu), Atlas of Ophthalmology (https://www.atlasophthalmology.net/frontpage.jsf?locale=en).

These resources have been available for a long time, and need to be used more often, as we are lacking the hospital training currently.

Challenges and some best practices towards the digital transformation of ophthalmic education

COVID pandemic has paved the way for Ophthalmology students to learn anywhere, anytime and on any device, still online teaching has many challenges.

- Clinical and surgical skill training: Most of the virtual learning hand-on training cannot be imparted by online teaching alone. This can be partially handled by using online apps for simulation-based training. But still, for Ophthalmology this remains the biggest challenge
- Technology-related challenge: The students of today are assumed to be digitally literate and may adapt easily to the use of gadgets and online education, but all the teachers and students may not be tech-savvy. Ensure the students and teachers to undergo basic technical training in optimum utilisation of the platform being used. Do not try everything initially. Go slow and get everyone on board. Creating students and faculty e-leaders who are tech-savvy can help in assisting the full group in coming on board. Lack of good internet connectivity, access to laptops etc., which might hinder digital education. This can be overcome by limiting online duration, flexible time and a sensitive approach

towards who are facing these challenges. Having a good IT team in the institution can therefore go a long way in adopting distance education

- Student engagement: It is challenging for teachers to continuously engage students due to issues like attention span, multi-tasking while attending sessions, poor audio and video quality, internet issues etc. This can be overcome by designing shorter and more interactive classes using tools like live chat function, pop quizzes, virtual whiteboards, polls, reflections etc. Use of apps like Kahoot, Google Forms, Poll Everywhere can ensure students remain attentive. Hybrid learning using a good blend of synchronous and asynchronous tools will be most effective
- Infodemic or overload of information: There are suddenly so many online resources available that it can be daunting for a student to follow and listen to them all. The teachers can assist the students by curating the content and guiding them in selecting appropriate webinars to attend
- Mental well-being: The mental effects of lack of physical support from the peer group, lack of books and other resources, isolation, fear and anxiety associated with the pandemic, new pedagogy technique may hinder the student as well as faculty from performing to their full capacity. Being supportive, sensitive to each other's needs and being flexible will assist in creating a non-threatening virtual classroom environment is very essential to facilitate learning. Regular mentoring of postgraduates and one-on-one online meetings can help in this regard
- Assessment: Conducting a secure and valid online assessment is difficult. This can be made possible without violating privacy by enabling software such as Proctorio, a Google Chrome extension that monitors students taking exams online. Regular formative assessment on smaller topics with reflections can help in this regard
- Quality check: Improving the online training program and maintaining good academic standards can be a big challenge. Regular and feedbacks and use of program evaluation tools on assessing the effectiveness of programs improving and finding ways to refine the teaching program can help in customising departmental training and providing

Distance education in the ophthalmic field is here to stay even after the pandemic. Ophthalmology as a branch has always been using cutting edge technology for clinical and surgical care; it's time now to use it for training and education of our residents. We need to use this opportunity to grow as teachers and as professionals. It is important to make the best of the situation and maintain a positive attitude.

"A diamond is a chunk of coal that did well under pressure" - Henry Kissinger

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Conflicts of interest

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