

In pursuit of excellence in anaesthesia education.... vision, challenges and opportunities

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Current anaesthesia training and education in India broadly includes operation theatre (OT) postings under supervision, intensive care and emergency duties, dissertation work, basic surgical sciences and superspeciality rotation postings, seminars, journal clubs, conferences and workshops, and teaching paramedical and medical students.^[1]

Anaesthesiologists work in a wide variety of settings, particularly in the complex, dynamic, interactive environment of the OT and the intensive care unit. Teaching and learning can be challenging in this area wherein the anaesthesiologist has to do multiple works and share the workplace with the surgeons and other OT personnel.

There is an ever-expanding load of scientific information in our field, and the concept of safe patient-centred care is now the topmost priority in perioperative management. The clinical and medicolegal responsibilities of an anaesthesiologist are ever-increasing. Surveys in our country have found that the clinical postgraduate (PG) learning environment is of medium to high quality with a lack of routine assessments and regular academic series.^[2]

The present scenario makes it necessary to deliver maximum quality information to our students during postgraduation and improve our academic environment. In doing so, many queries need to be answered looking

at the present PG education curriculum. To begin with, are the current approaches in PG education in our nation adequate to achieve this goal? Do we need to adopt newer approaches in anaesthesia education in our country? As if to answer this question, the National Medical Commission (NMC) came out recently with the guidelines for competency-based PG training programme for doctor of medicine (MD) in anaesthesia in 2019.^[3] The competency-based medical education (CBME) undergraduate (UG) curriculum has already been launched by the Medical Council of India (MCI) in 2018.^[4] These guidelines define the specific learning objectives, subject-specific competencies, the time frame for training, the syllabus and course content, teaching, learning and assessment methods. The UG guidelines are already implemented. Though the PG guidelines are yet to be implemented, they clearly depict the current academic mood in PG education in our nation and the need to change and rope in newer methods in anaesthesia education.

Anaesthesiology as a speciality has its own inherent merits, which makes this branch a very important connecting link between various other medical and surgical specialities. The PG students of anaesthesiology are the important building blocks of our nation and the most important cog in the wheels of the healthcare industry. The present coronavirus disease (COVID)-19 era has shown the importance of our speciality and the value of our young PG warriors.

Among various medical specialities, anaesthesiology has made an important mark in this COVIDEMIC and carved a niche for itself and has also marked a watershed period from where its ascendancy cannot be questioned in the times to come.

It is therefore essential to look after all the aspects of PG teaching including various education methods, examinations, clinical and professional growth, and social, physical and mental well-being of the PG students during their academic tenure. The need to carry out such exercises is solely driven by various potential limitations in our education system. There is a lack of uniformity in teaching methods from institution to institution and from city to city in our nation. Also, the non-uniformity in the final PG examination pattern has a dragging effect. These drawbacks are further heightened during PG tenure as the various scholarship criteria and research initiatives are not uniform in our country. Non-equivalence in learning facilities further adds to these limitations. Certain factors can have an exaggerated impact on these limitations contributed by the difference in regional, language and other barriers related to diversity in cultures; nevertheless, our subject of anaesthesiology has diversity written in its pages and so does our country.^[5] The research academics also pose certain challenges as the education methodology is not uniform. Furthermore, there is variation between the Diplomate of National Board (DNB) and MD course content of different universities.^[6] Taking such facts into consideration, the Indian Society of Anaesthesiologists (ISA) National is now holding online classes for PGs every Monday. The state branches hold this class once a month. PG teachers and superspeciality experts give talks in these classes which take place in the evening and are attended by PGs, both MD and DNB students across our nation. These classes are an endeavour to rope uniformity in PG teaching across our nation. Considered as an alternative to physical classroom teaching because of COVID-19, this online PG teaching programme came into existence, and the PG students have the luxury to get taught by the best faculty in the country on a regular basis.

The COVID-19 pandemic is a new challenge for medical students' education and training. The pandemic has taken a toll on PG anaesthesia teaching in several ways.^[7] A recent article has conveyed that the impact of the pandemic on PG medical education and training is controversial, challenging, unknown

and far-reaching. Disruption of outpatient and inpatient services, cancellation/restriction of elective surgeries and cancellation of physical conferences and workshops has affected the residents' morale and have negatively affected their opportunities of acquiring knowledge and new subject-specific skills. However, the pandemic opened up new learning modes like teleconsultation, video conferencing, virtual simulations, digital podcasts etc.^[8] E-learning is one teaching-learning method that has acquired popularity after COVID times. Digital learning supports student-centered learning, which is the crux of the new CBME curriculum.

Seminars and journal clubs have always been an integral part of PG academics. They have been given importance in the current guidelines too. A systematic and scientific approach is very important while conducting them. The journal club should be held in a uniform manner throughout every institute so as to boost the research academics. This will also help the various researchers and medical teachers to come out with quality research manuscripts for publication.

Facing PG exams is one of the most scary and memorable events for most PG students. Apart from the exams, dissertation writing and research methodology have also always been a part and parcel of PG education; unfortunately, lack of knowledge and awareness in its entirety regarding the research parameters adds to the challenges of maintaining a good academic atmosphere. There are articles in this issue of the Indian Journal of Anaesthesia (IJA) in which the authors have painstakingly described in depth the arts of conducting journal clubs, seminars, dissertation writing and facing the examiner during PG examination.^[9-11]

Most of us know that there is little exposure to anaesthesia in the UG curriculum; nevertheless, in the CBME UG curriculum launched by the MCI in 2018, anaesthesia has been given some weightage. The curriculum boasts of a well-designed foundation course, early clinical exposure, Attitude, Ethics, and Communication (AETCOM) module, alignment and integration module, module on electives and module on skill acquisition in simulation laboratories. Emphasis has been laid on feedback, formative assessment and continuous internal assessment combined with a logbook or portfolio approach in this new UG curriculum.^[4] The emerging role of the anaesthesiologist and the scope for a bigger role in this

new UG curriculum has been beautifully analysed in an article being published in this issue.^[12]

The teaching-learning methodologies in anaesthesia PG teaching vary across different nations around the world. An article in this issue aptly compares anaesthesia education methods in our nation with those of other nations.^[13] The choice of teaching-learning and assessment tools varies across nations for different educational programmes. A survey showed that simulation is commonly used as a teaching tool for regional anaesthesia training programmes but rarely used for assessment.^[14] Looking at the progress among the academic specialities globally with changing times, the time has come to modify our existing PG anaesthesia education methods so as to keep up the pace with the newer trends. Two articles in this issue have reviewed the existing system and provided evidence for the need to change the system.^[15,16] The time has come for us to adopt newer scientifically proven evidence-based methods. Another article in this issue describes newer teaching-learning and assessment methods that can be applied in anaesthesia education.^[17]

There are several challenges involved in coping up with the new curriculum. These include faculty resistance to change, non-familiarity with the new teaching-learning-assessment methodology, online connectivity and funding issues. Upgrading of information technology infrastructure and simulation laboratories in the institute, reorganisation and retraining of the faculty and students in tune with technology, and synergising faculty development with internal quality assurance are needed.^[18] Faculty development strategies and training all medical college teachers through the basic and advanced course workshops in medical education technology and the curriculum implementation support programme (CISP) workshops launched by the NMC can help in coping with the challenges posed by the new curriculum. The medical education units of all medical colleges have to be strengthened and have to become active to achieve this. The onus now lies on the teachers and the students to open up to the altered teaching-learning and assessment methods and the administration to provide the needed facilities. An updation in the knowledge and skills for research methodology will definitely give a boost to the research academics and will help in pacing the aspirations of the academic fraternity and will open various doors of international academic platforms for them.

There is no end to progress, medical education is steadily undergoing reforms, and newer principles and methods are being researched upon. The use of stereoscopic 3D instructional videos (easily accessible via smartphone), and virtual dissection tables in anatomy education are now gaining popularity in COVID times. Telemedicine is becoming increasingly important and is now growing by leaps and bounds. It is tipped to grow even more in the near future; nevertheless, the role of telemedicine in anaesthesia, perioperative medicine and critical care has already been described.^[19-21] Medical schools in the United States have already started to incorporate telemedicine competencies into UG medical education by integrating telemedicine-based lessons, ethics-related case studies and teleassessments in preclinical and clinical UG education.^[22] However, it needs to be incorporated into the UG and PG medical curriculum in our nation. Nonetheless, the flipped classroom model, video lectures, portfolio development are already used in UG and PG medical education in other nations, whereas, we in India are still doing research on these methods of teaching.

Point of care ultrasound (POCUS) is now a very useful clinical modality and is finding widespread clinical application for decision-making in critical care and perioperative medicine.^[23-25] The CBME PG curriculum does mention that the PGs should learn to perform ultrasound-guided peripheral nerve blocks (PNBs) and venous cannulations. However, the structure of training in ultrasound is not elaborated. POCUS skills can be readily acquired at all levels by anaesthesia trainees.^[26] A structured longitudinal POCUS curriculum for anaesthesia PG education including online lectures, journal articles, live model scanning sessions, video review of cases and e-portfolio for supervised scans was found to improve learner satisfaction, achievement of competence in ultrasound skills and clinical management.^[27] Anaesthesia programmes in Canada and the United Kingdom provide POCUS training in vascular access, PNBs, transoesophageal electrocardiography, rescue echocardiography, lung ultrasound and focused assessment with sonography for trauma.^[27] It is time that we too adopt a structured POCUS curriculum.

Integration has already been included in the CBME UG curriculum. However, integration in the CBME PG curriculum is also being welcomed. In a recent survey, the anaesthesia residents wanted both horizontal and vertical integration to be made with basic sciences and

paraclinical departments like anatomy, physiology, pharmacology, etc.^[1]

Soft skills like professionalism, communication and ethics are often neglected and difficult to teach. Cinemeducation is a teaching method where short film sequences can be used to address various subjects such as medical ethics, doctor-patient relationship and professionalism. The selected movie is screened and followed by group activities and presentations. Cinemeducation is already used in medical education in some countries.^[28] It could be used in UG and anaesthesia PG education (AETCOM module) in teaching end-of-life conversations, do-not-attempt-resuscitation scenarios, how to break bad news and the like.^[29]

Nowadays, non-technical skills (NTS) such as task management, situation awareness, decision-making and team working are very important for success in the career of an anaesthesiologist. Nevertheless, team-work has become very important during COVID-19 times, and the PG guidelines rightly mention that the PGs should be able to function as a part of a team and develop an attitude of cooperation with colleagues.^[3,18] The various NTS required for anaesthesia practice, their relevance and their role in enhancing patient safety and clinical outcomes are elaborately described in another article in this issue.^[30]

Academics no doubt have a great value in shaping the professional career of PG students. Equally important is to maintain one's health, especially during such pandemics which the globe is facing presently. The role of physical and extracurricular activities is highly essential so as to keep these young warriors fit during their PG tenure. The Indian Society of Anaesthesiologists (ISA) fit anaesthesiologist programme is meant for all members of the ISA in general and the young warriors in particular. This issue of the IJA brings in an article that gives useful tips on how to keep fit during anaesthesia residency days.^[31]

After passing the PG examination, which itself is a grinding phase in the life of a PG student, skill development programme acquires greater importance in post-PG teachings and should be launched in a uniform manner at the national level. Education beyond the PG career is very important, especially for those who join peripheral medical services as the learning facilities are scarce in such stations. A week-long education programme every 6 months

in the nearby institutions will definitely help in the acquisition of newer knowledge and skills. Recordings of various continuing medical education programmes and conference lectures as well as the availability of previously taken online PG classes will definitely help in better decision-making. Nevertheless, in some states in our country, bonded PGs after passing out have to work for 1 year compulsorily in government hospitals as senior resident/registrar and during this period, they can try to acquire more knowledge and skills useful for future clinical practice.

Research and teaching go hand in hand. Research into various aspects of UG and PG medical education is an ongoing process. Nonetheless, there is a lot of literature on research methodologies in UG medical education, but not much on anaesthesia PG training in India.^[32,33] This area thus offers a huge potential for research.

In many parts of our nation, teaching is still considered to be a modern version of traditional methods. Medical teaching is also no exception to this, especially PG teaching. PG teaching is just like parenting a grown-up child. The relationship between a medical teacher and a PG student is considered to be the highest degree of academic unison. The glimpses of our traditional and ancient teaching methods can still be seen reflecting in this academic scenario although not to a major extent. The guru-shishya (teacher-disciple) tradition is very dear to us all Indians, and it is partly followed in PG education in the form of PG guides and mentorship. ISA has started the "mentor-mentee" programme sometime back wherein successful academicians and consultants become mentors to PG students and guide them in their careers.

The future of medical education is in our hands. Adopting newer teaching-learning methods, changing our traditional mindsets, moving in tune with the rapid pace of technological innovations in the teaching-learning-assessment system and most importantly, the development of a never-ending passion for learning can go a long way in improving the standards of our medical education system. In addition to striving for improvement in the quality of perioperative care, we now also need to think of improving the quality of anaesthesia education.^[34]

This PG issue of the IJA is a testament to our pursuit for achieving excellence in anaesthesia education in our nation, to transform it from the mundane to the

extraordinary, and from the extraordinary to the best in the world.

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