

Preliminary Measures in the COVID-19 Pandemic A Trial for Futuristic Medical Education

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EDITORIAL

During COVID-19 pandemic, medical schools and teaching hospitals are required to cease on-site teaching, learning and assessment activities for undergraduate students. These on-site activities have been transformed into online instructions. Although blended learning, a combination of online and on-site learning is common in medical schools [1], online instructions have never been conducted to such a great extent, where wholly or almost every instruction is conducted online. Several changes have been noticed during COVID-19 as preliminary measures to conquer the challenges caused by this pandemic.

First, didactic face-to-face large group lectures are converted to pre-recorded asynchronous lectures. By having pre-recorded lectures, students can watch them anytime and anywhere at ease, and play the recordings back according to their paces. Subsequently, a follow-up synchronous question and answer session or asynchronous communication via emails and forums can fill the missing interactions [2]. This active learning method has questioned the traditional model adopted by medical teachers where they repeat the same didactic lecture every year and students just listen passively to it. Over the past decades, compulsory attendance for didactic large group lectures has often been debated, perhaps it is the time for medical teachers to test and verify the principles of adult learning (e.g. I need to learn because my circumstances are changing, I learn because I want to) in the medical education [3].

Second, some interactive teaching and learning activities, such as problem-based learning is conducted via video-conferencing tools. In a virtual problem-based learning discussion, online mind mapping tools and virtual whiteboards enable students to share web resources, pictures, and videos. The visualisation of learning materials outweighs physical whiteboards with marker pens. Though it may be the best alternative under the circumstances, underprivileged students may encounter difficulties to access sufficient internet data and stable

connection. Due to the connectivity issues, students might have to turn off their cameras and microphones, tolerate with delays in responding and ask if their voice can be heard, these interruptions jeopardise the dynamics of group interactions. Similarly, even though the use of video-conferencing tools for virtual admission interviews tries to retain important features as much as possible, the possibility of losing the opportunity to examine stress tolerance in an unfamiliar setting still exists [4].

Third, though technology-enhanced learning, such as pre-recorded videos and high-fidelity simulation has been applied in clinical placements, these virtual learning materials are not invented to completely replace face-to-face clinical experiences. During the pandemic, work-based learning and assessment activities in teaching hospitals are disrupted and patient contacts have been minimised. The pandemic stimulates innovations in medical education, for instance, live-streamed ward rounds [5], telemedicine [6] and virtual clinical assessments. Despite the innovations, it is worried that the competencies of medical students cannot be fully developed for the actual healthcare setting since they are unable to practise physical examinations or procedures on real patients.

Fourth, Imperial College London conducted the world's first online and remote open-book examination for their final-year medical students. The open-book examination is not novel in higher education [7] although there may still be some challenges to implement it. Instead of debating on the security of online examination, perhaps medical teachers should review the use of traditional closed-book examinations. With the invention of external hard drives, which are capable to store terabytes of information, any examination that enables the answer to be recognised in lecture notes, textbooks, internet search and collection of past year examinations may not be able to evaluate higher order thinking skills of students in this digital era.

Fifth, even though there are emerging published evidence or solutions for basic sciences and clinical education, there is yet a concrete solution in developing and examining student professionalism during the pandemic. Observing students in clinical placements has become impossible, giving feedback based on their logbooks has become

impractical, and conducting team-based learning/peer assessment has become more difficult. Further discussion and development are required to teach and assess students' demonstration in ethics, respect, compassion, integrity, and other commitments with fully online education. The pandemic may also enable the growth of self-regulated learning and students' responsibilities for their learning. To illustrate, they must manage their time at home to utilise available resources on the learning platform, without the supervision of the faculty.

Sixth, faculty development programmes were forced to be cancelled at the beginning of this pandemic but later it is transformed into online instructions. Webinars have become more popular because speakers and audiences can share their expertise and experiences worldwide. Conferences, for instance, the Asia Pacific Medical Education Conference (APMEC) 2021 will be organised virtually for the ever first time. Although virtual continuing education, such as the massive open online courses (MOOC) is common, the pandemic has "helped" to popularise and increase its acceptance among medical teachers.

There may be more changes in different medical schools, which are missed in this editorial. Nevertheless, the key message is the COVID-19 pandemic has made some impossible missions to become possible in medical education. It is undeniable that this pandemic has threatened the quality of medical education, but it also has created an opportunity for the faculty to make a better change. During the pandemic, medical teachers might have attempted their first ever pre-recorded lecture, a live conference with students, or a virtual assessment on students. They have obtained a new hands-on experience, regardless it gives them a positive, neutral, or negative insight.

Adaptations made during the pandemic are experiential learning experiences [8] for medical teachers. They

adapt, reflect, and plan for the next intervention. In addition, more publications will be available to report experiments and experiences on teaching, learning and assessment activities during the pandemic. The experiential learning outcomes and published evidence will eventually contribute to form the futuristic medical education by answering the following question: what is best to be continued online and what should be reverted to face-to-face instruction?

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