JOURNAL OF CLINICAL AND HEALTH SCIENCES

EDITORIAL

A Quick-Peek into the Covid-19 Related Transformation of the Education Ecosystem

Editorial Board

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It is more than 18 months since the outbreak of the Covid-19 pandemic, and there isn't a single aspect of life that has been left unaffected in its wake. It has impacted the physical, mental, emotional, social, vocation and spiritual aspects of life of people from all walks of life. The Covid-19 virus has not discriminated between the 'haves' and the 'have nots', but the consequence of the Covid-19 pandemic has. The effects of the pandemic have been more devastating on the poor. The pandemic has brought enormous health and economic burden on nations all over the world, but more so on the poorer nations. With limited resources at their disposal, the poorer parts of the world have not been able to rapidly adapt to the new demands that have been suddenly placed on them. Although it seems that some aspects of life are returning to the pre-pandemic ways in the more affluent countries, there are, however, nations that are still far away from seeing the light at the end of the tunnel. A lot of challenges still remain. These are not only to overcome the current pandemic but also on how to prevent or mitigate such extensive disruption to day-to-day life in the future. With the emergence of new variants of the virus, it remains uncertain if the pandemic has been brought under control or for how long more it might go on.

Majority of the changes that have been brought about by the pandemic, particularly in the use of technology at work, in education, business and commerce, are probably for the good and most likely are here to stay. There will be no going back to the archaic ways of doing things in some of these aforementioned areas. Education is one of the areas that has been forced into rapid digitization of teaching, learning and examination processes. It was not something that was unexpected, but the Covid-19 pandemic has brought it forward and a lot sooner too than we could cope. The distribution of use of online learning and assessment modalities is not even or uniform throughout the world or even between institutes within any given country. This disparity has certainly affected the delivery of education and assessment in a number of regions of the world.

Education systems and institutes of learning in a lot of the countries were caught unprepared to meet the sudden extensive demands arising from the pandemic. Thousands of students all over the world were suddenly pushed into an online system of learning that was still some way from being capable of accommodating the large educational transformation that was required during the pandemic. Many students were still not ready or were unfamiliar with the new system of digital learning. The limited 'internet-reach' in many countries, coupled with inadequate access to computer facilities, left many students struggling to continue with their studies. A lot of teachers and academicians at institutes of higher learning too faced challenges on how to handle and rapidly adjust or adapt to online teaching and assessment platforms. This was particularly so with the senior faculty members who were still comfortable with the old ways of face-to-face teaching and perhaps slightly less technology savvy than their younger colleagues.

The pace in moving to online teaching and learning platforms has not been the same in all parts of

Vol 6(2) (2021) 1-3 | jchs-medicine.uitm.edu.my | eISSN 0127-984X
https://doi.org/10.24191/jchs.v6i2.14941

the world. The affluent regions of the world were better placed to adapt to the online learning platforms than the less affluent ones.

While teaching-learning activities in some disciplines or areas of learning may have rapidly adapted to the online platforms, challenges, however, remain for certain courses where the current online facilities or the tools available are not adequate substitutes for training, particularly, where face-to-face and hands-on teaching and learning is necessary. Direct face-to-face and hands-on learning is a must in medical training, and the challenge for medical educationists, therefore, remains huge. How do we meet the need of the students' clinic and hospital-based training? Although some institutes have tried to introduce training in simulation facilities, but could that be considered at par to the actual bedside teaching? The instantaneous adjustments or modifications that have been implemented to circumvent the loss of face-to-face teaching in medical schools may not be ideal long-term solutions. They may have been well thought through under the circumstances, but their effectiveness and suitability still remain to be properly ascertained.

Although the response from many higher institutions of learning has been rapid and has, no doubt, inspired the development of more online tools for teaching-learning activities, there, however, still remains a sizable gap between what is required to be taught and the available software or products that support the processes needed in teaching these online. Should we tailor our teaching and assessments according to the available online technology or should we invest in the development of technology to meet our teaching, learning and assessment needs? While at the beginning many educators had tried to fit their teaching and learning activities into the existing online tools, this, however, cannot be a long-term solution. Developing the required software and having the appropriate products is essential if we want to continue this transformation effectively i.e. maintaining our standards of education whilst moving from the more face-to-face and hands-on teaching modalities to digitalized teaching. More investments (both money and effort) are required to meet the demand for the software tools that are necessary for better and complete online medical teaching and assessment. Many institutes will have to invest to upgrade their virtual teaching and learning facilities and staff development. Whatever online platform that is developed for medical teaching, it has to ensure that the major principles of effective teaching that include a) creating an active or interactive student-centered learning environment, b) motivate and generate more enthusiasm for learning in the student, c) help the student organize and connect knowledge, d) provide a timely feedback, and e) help students better manage their time, are ensured and well incorporated into the system. The system also has to be user-friendly with good digital security.

While many online tools for teaching and learning activities were already available before the pandemic began, and which were very quickly adapted to meet the needs of the time by medical educationists, online tools for undergraduate medical course assessment are still somewhat limited. Numerous challenges remain, and these include on how to maintain the standard of assessment and avoid cheating. Digitization of the examination process has been going on for some years, long before the onset of the pandemic, and many universities have been wanting to do away with the pen and paper form of assessment for quite some time now. However, the pace towards this change has been cautiously slow.

Like in the case of teaching and learning activities, some rapid adjustments or modifications were also introduced by most medical schools to help complete the examinations and to meet the required standard of evaluation as much as possible during the pandemic. Assessments in many medical schools had to be modified, particularly those requiring face-to-face evaluation. Some aspects of evaluation, particularly clinical in-person examinations, had to be reduced or modified or even temporarily suspended. This may have, in a way, reduced the completeness of the assessment process. Their impact on the students remains to be determined.

Although some higher learning institutes seem to have used technology and innovation effectively to transform the examination process in some areas of education, where they were able to move from a solely paper-based and in-person examinations to digital testing and digital proctoring, the majority, however, are still struggling to meet the minimum requirements of an

Vol 6(2) (2021) 1-3 | jchs-medicine.uitm.edu.my | eISSN 0127-984X
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online or digitalised examination. A well-designed digital examination system must be (i) relevant (i.e. be able to at least test the required or relevant or core areas that a student must know), (ii) adaptable (i.e. be able to address the needs of a diverse student population), and (iii) trustworthy (academic integrity, security, and fairness). In short, any digitalised examination needs to ensure that it is sufficiently robust, prevents or minimises academic misconduct while, at the same time, also ensuring fair treatment of students who may be working under some very challenging circumstances, like poor internet connection, different time zones, etc.

Maintaining the integrity of on-line assessments via online proctoring can be challenging when one considers the role played by invigilators during examinations. Technology for digital proctoring is still in its infancy, and, at this point in time, it is not able to adequately perform the typical role of an in-person invigilator. Many institutes of higher learning have had to re-design the examination questions and processes that require less stringent invigilating or proctoring. But is this the right or correct solution? Organising examinations to fit into the current available tools for e-proctoring may limit the type of examination questions that can be asked and/or even areas of knowledge and skill that could be examined, thus compromising, somewhat, the standard or completeness of the assessment. So where should we start from? Should we start with the available technology and fit our examination process and invigilation into it, just to ensure that the examinations are free of any misconduct on the part of the students or should we start from the role of the invigilator and then develop the necessary tools so that the key role of the invigilator is upheld while at the same time maintaining the standard of examination. Invigilators contribute significantly to maintain the integrity of examinations during the conduct of examination in examination halls, and the pre-pandemic examination processes had usually permitted the assessment of an unlimited area of a subject within the stipulated curriculum. For us to be able to continue to conduct online examinations freely, as per the format of the pre-pandemic era, we will need digital tools that are sensitive enough to allow us to detect any suspicious behaviour on the part of the student during the examination. We need built-in remote sensors that can (i) detect things like sudden burst in activity, creativity or sudden large-scale corrections being done to the text; (ii) detect unexpected sounds like that of turning of pages, voice; or (iii) any change in type cadence that might imply the person doing the examination is no longer the intended candidate; (iv) loss of network activity, etc. In short, we need a proctoring system that is sufficiently resistant to any form of student manipulation or cheating.

With digital proctoring there is also a need for moderation after the examination i.e. comparing the proctoring notes with the student performance to identify candidates whose examination performance differs significantly from their expected grades.

In conclusion, the Covid-19 pandemic has brought about sudden new challenges and needs into education and the training of medical graduates. Many institutes of higher learning, including medical schools, have been able to manage so far with introduction of some rapid measures or modifications. These may, arguably, have come with some compromise in the standard of teaching, learning and assessment. The precise consequence of these rapidly instituted modifications, although they might have been well thought through, has to be ascertained, and if found deficient, these deficiencies will have to be addressed. The transformation in education has been imposed on us. It might have come a little too soon or might be a little difficult for some. But we cannot and must not go back to the way teaching and learning was conducted during the pre-pandemic era. We have to continue to move forward with this transformation in the method of teaching, learning and assessment. Admittedly, there are gaps between what is to be taught and what can possibly be taught and assessed online owing to the current limitations in the capabilities of online teaching and assessment tools, but we need to endeavour to close these gaps. We need to develop more tools and more innovative ways in the delivery of knowledge and to carry out assessments. Education institutes will probably need to upgrade their virtual teaching-learning facilities. When transforming we have to ensure that the quality of education is not compromised. We will need to adhere to the standards set by the respective quality assurance agencies. On their part, the quality assurance agencies will need to recognise and accept the increasing role of online teaching-learning and assessment in their evaluation of courses or programmes.

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