Dental Education In India- Time to overhaul?

WHO announced COVID 19 infection as a pandemic on March 11,2020. 1

India announced nationwide [lockdown](https://en.wikipedia.org/wiki/Lockdown) from March 24th, limiting movement of the entire 1.3 billion population of [India](https://en.wikipedia.org/wiki/India) as a preventive measure against the [COVID-19 pandemic in India](https://en.wikipedia.org/wiki/COVID-19_pandemic_in_India), followed by enforcement of a series of regulations in the country's COVID-19 affected regions .2

All establishments including schools and colleges were shut indefinitely. This has brought a drastic change in education scenario including dental education in India..

All aspects of teaching learning had to be looked at from a new perspective. Traditional class room teaching, learning and assessments moved online. It was a new situation to be got used to by all stakeholders. New resources for content delivery had to be employed. Collections from previous case scenarios had to be discussed to make students to get a glimpse of the situation. Videos from sources like YouTube had to be validated and shared with the students.

It is time to rethink the avenues of training our Dental students. Virtual reality, augmented reality and simulator based training have to be adopted into the curriculum to train students effectively.

Some dental schools have used simulators that have realistic manikins along with [dental models](https://www.sciencedirect.com/topics/nursing-and-health-professions/dental-procedure) incorporated in a dental simulated operatory. These simulated models allow the instructors to explain and improve on students’ hand-eye co-ordination and dexterity but verbal description of tactile sensation is difficult to explain. New technologies are being developed to include ‘haptic’ (sense of touch) and ‘virtual lab environments’ into the simulation exercises as these technologies are reported to increase motor skills and student efficiency as well as reducing the faculty time required.3

In dental education, during simulation laboratory procedures, the student requires constant feedback on their work to move onto the next procedure. This face-to-face discussion with the instructor usually occurs after the procedure due to time constrains and student to tutor ratio. A study found that when students trained with virtual reality simulators learnt faster, practised more procedures per hour, accomplished the same levels of competence as traditional preclinical laboratories and requested more evaluations through the simulators. 4

Recent studies also found that dental trainer (VR) significantly improved the satisfactory performance of students. 5 Immediate feedback via virtual assessment software was effective as one-on-one faculty instruction for dental students  6

A robot patient capable of performing real life simulations was found useful in dental education for medical emergency training and assessment not only for situation management but also for differential diagnosis. 7

The virtual reality simulator may be a valuable adjunct in the undergraduate students especially for remedial student. The ability of these simulators to store and replay students’ work further allows self-learning and assessment.

The advantage such technology is that it would allow flexible learning with self-teaching not limited to formal training hours, thus increasing students’ training time Therefore, blended learning designs in the form of virtual reality units that provide instant feedback needs to be incorporated into dental education. However, Live, Hands on experience can never be replaced. The biggest challenge is teaching patient management skills to the students.

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