PERSPECTIVE

Blended learning and simulation: the future of dental education in a post-COVID era

DSC Dental Schools Council

The Dental Schools Council (DSC) is the representative body for dental schools across the UK and Ireland and is an authoritative voice of dental education. Schools work together through the DSC to maintain and improve quality in dental education, clinical dental training and dental research.

Key points

- UK dental schools led in simulation and blended learning before the COVID-19 pandemic.
- Simulation and blended learning are essential to dentistry, now more than ever, and are increasingly being introduced into dental education around the world.
- UK dental schools need to work together to introduce educational standards on simulation in dentistry.

As we celebrate the 150th anniversary of the *British Dental Journal*, it feels timely to consider the future of dental education and reflect on the capabilities of emerging technologies, such as simulation and blended learning, that have especially gained popularity over the last two years. The Dental Schools Council is proud to celebrate the world leading teaching and research across UK dental schools, highlighted by the Research Excellence Framework (REF) 2021, and recognise the outstanding contributions dental schools have made to the nation.

The COVID-19 pandemic has disrupted almost all aspects of life and brought about significant structural and behavioural changes to society. In education, the closure of higher education institutions during the height of restrictions forced learning to be moved online. The response from institutions was to adopt various methods of online learning to preserve the continuity of education while keeping students and staff safe.[1] The teaching of clinical dentistry is unique and by its very nature requires many hours of hands-on training. Inevitably, dental schools were under enormous pressure to maintain a high standard of learning while avoiding the increased COVID-19 infection risk that comes with the close face-to-face involvement of routine dental practice.

Blended learning and simulation have been a cornerstone of dental education but have recently increased in uptake around the world following the emergence of COVID-19.[2] Blended learning is a combination of remote and face-to-face and synchronous and asynchronous teaching methods, to facilitate learning and aims to foster an environment of self-directed learning.[3] Similarly, simulation and augmented reality (AR) have been embedded in the educational design of world leading dentistry courses in the UK and Ireland for a long time. AR is a generic term to describe a variety of immersive technologies. In dentistry, this can range from high-fidelity haptic machines to low-fidelity phantom-head simulators. Its adoption in dental education allows students to all experience the same cases and meet learning outcomes and it reduces the limitations of using plastic teeth to simulate realistic experiences.[4]

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While the pandemic has stressed the need for technological advancements in online learning, dental schools had already been thriving in this area and trailblazing for the future of global dental education. As a result, many dental schools across the UK were already in a strong position to continue training and build on innovations when the pandemic hit. For example, King's College London was awarded the Times Higher Education Award for Technological or Digital Innovation of the Year in 2021 by maintaining its world-class education and training throughout the pandemic using simulation, thereby proving their facilities and resources were future-proof. Cardiff University and the University of Sheffield have also been leading pan-European special interest groups in simulation and digital workflows within the Association for Dental Education in Europe.

The success of the REF 2021 has highlighted the strong performance of UK dental research. As dental schools and researchers look to build on their position of international excellence, it is important that we also focus on where development is needed in simulation as one of the key drivers of high-quality dental education. The aim is to provide simulation that complements and is integrated with holistic patient care and delivers oral health care education for students to practice in safe and innovative learning environments that are sustainable.

While simulation has proved to be an invaluable tool for teaching, there are currently no established educational standards on simulation within dentistry[4] and there is limited research on its integration into curricula and the varying effects on student learning.[4] Dental schools will need to work collaboratively with stakeholders to decide both on standards and integration in education. ■

References

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