Enhancing the learning experience in dental clinical skills: development of a flipped classroom model.

The University of Glasgow Dental Clinical Skills Unit has developed a flipped classroom model for the teaching of operative techniques. This was fully implemented at the start of academic session 2014 - 2015. The majority of the didactic teaching and demonstrations have been moved online, and students access videos, presentations, lesson plans and other educational resources via Moodle prior to attending the classes. Students also have access during the sessions through a wireless network and a 'bring your own device' (BYOD) policy. This change allows students to have extended time to practice technical and manual skills, and staff can personalise teaching to individual students and small groups based on their specific needs.

Multiple demonstration stations are employed in a flexible environment to support either group work or independent practice, with an active learner centred approach. Reflection and critical appraisal of work practice is enhanced and practical skills time maximised so that students can identify their own learning needs and proceed with course material at a more personal pace.

Student feedback is enhanced and there is additional opportunity for teachers to model technical procedures and skills on an individual basis. Feedback from staff has immediacy and can be recorded electronically by imaging student work and providing annotations. Students are also encouraged to take images of examples of their best work to use as portfolio material for Mahara.

Teaching material online can be produced and developed quickly in response to classroom experiences, and the flipped learning approach can also include additional feedback tools using electronic voting and interactive quizzes using Moodle, both online and in class.

At the completion of this teaching cycle in the BDS2 programme, an evaluation is being planned, which will assess the effectiveness of the Flipped learning model and used to inform future developments.

Andrew Crothers