



## CASE STUDY

### COATBRIDGE COLLEGE – DENTAL TRAINING COLLEGE

Already an award winning establishment, Glasgow's Coatbridge College Dental School is committed to developing the dental team and offers qualifications to those individuals considering a variety of dental career progression routes in Dental Nursing and Dental Technology.

In addition, the College supports individuals employed within dentistry by providing continual professional development training and post qualifications, including Diploma in Orthodontic Therapy, Oral Health Education/Promotion, Dental Radiography, Dental Practice Management and Dental Administrators/Receptionist qualifications.

In order to ensure they maintained their status as a high achieving centre, the college looked to having a new state of the art teaching facility and phantom head training room to ensure learning was maximised and effectively prepared all learners for a rewarding career within dentistry.

The initial idea was to replicate another centre where each student had access to a phantom head allowing them to work individually on their own equipment. The trainer, who also had a phantom head would be able to show what they were doing inside the oral cavity by means of a powerful overhead camera which could zoom into the mouth of the phantom head – the images then being shown around the room.

KaVo Limited were chosen to supply their DSE Clinical pods for Coatbridge – 4 pods, two with 4 x phantom heads and two with 2 x phantom heads in the one room meaning 1 trainer and 11 students could work together. KaVo in turn recommended the award winning company Phoenix AV – known for their innovative 'out-of-the-box' thinking and solutions to provide the video element for the trainer and students.

On reviewing the original example site – Phoenix identified an immediate issue; images of the phantom heads oral cavity were first not of a high quality due to the camera resolution, secondly the images were often blocked by the trainer who themselves had to look into the cavity to see what they were doing and finally, there were some difficulties in showing some angles and root canal work.



Phoenix then went in search of a better solution to improve and discovered the 'INSIDE' Endoscope manufactured by Faro of Milan, Italy. The INSIDE system consisted of a high quality camera Endoscope with its own LED crown light source and mounted on a cantilever arm. In use throughout the rest of Europe within live dental surgeries, it allowed dentists to operate on their patients with greater magnification and accuracy to a monitor screen and with greater comfort for both dentist and patient. The cantilever system meant the Endoscope stayed in place within the mouth allowing the dentist both hands to work with whilst their assistant could also now stand more comfortably next to the patient.

Phoenix immediately saw the benefits of this as a training solution and, after initial agreement from Coatbridge as to the potential of the system flew to meet with Faro in Italy. There, the Phoenix engineers were shown the factory and given training on the installation and support techniques for the INSIDE system which was subsequently purchased by the Dental College.



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KaVo then installed their four DSE Clinical pods working in conjunction with the Phoenix engineers who worked on the audio visual element. The INSIDE Endoscope was connected to the trainers' position and the video image taken via a series of matrix and distribution amplifiers out to each of the student monitor screens. (Note – this was not done over cat 5 as many other companies tend to do in order to ensure a better image quality; this was immediately apparent for this solution).

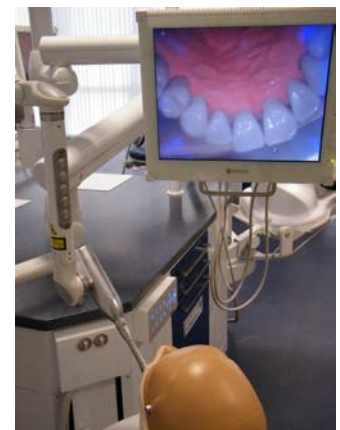


In addition to the student monitors, a 63" Plasma screen was installed (ceiling drop pole); in this way, the trainer can now provide un-hindered images in up to x 20 magnification from any part of the phantom head's oral cavity to all student and plasma screens together. Visitors to the centre can now view the training and procedures in the room without disturbing the students and the trainer can also collect the students to the centre of the room and the large screen if required.

To further enhance the training solution, Phoenix then installed some additional features for added flexibility. Firstly, a digital recording system was included along with a computer for the trainer, wireless microphone system and simple button control panel. The trainer now has several easy options available:

- \* Show their intra-oral work to all student monitors including the plasma screen
- \* Record their training to the digital recorder
- \* Mute all student monitors (not their own) to gain student attention / prepare own work
- \* Show their computer screen (pre-prepared presentations / images etc) to all monitors
- \* Replay digital recordings back out to all screens at any time from digital library
- \* Play DVD video (or any other connected device) out to all student monitors and plasma
- \* Address the class via the microphone and speaker system / play music through system

The system has made an amazing difference to the training and been very well received. The college was awarded in March the Scotland's Colleges, **Business to College Winners Award** for [Workforce Development 2010](#) and is looking to expand on the system in the future. This may include two 'live' suites each with the INSIDE Endoscope and connected to a screen system to allow students to watch along with a MediaSite library system which will allow recorded training and operations to be saved in on-line libraries. Authorised students and guests will be able to review these on-line at their convenience.



Finally, the system will also allow for the connection of systems such as video conferencing to allow live communications, training and procedural updates to happen to any location.

