Technology

The future of patient consultations with 3-D, interactive, touch-screen workstations

Dr. Douglas Chenin explains how the Visage system adds interest and understanding to the orthodontic consultation experience

This image shows the Visage system in action. An orthognathic education animation is playing and the patient is interacting with it to see the 3-D image from another angle

Since the advent of the Internet, the general trend of finding information has been changing into a more interactive, personal, and engaging experience, not to mention easier and faster. There is a world of a difference when it comes to surfing for information online as opposed to watching a documentary on television, for example. The Internet is dynamic, interactive, engaging, and user-directed, while a documentary, even though it may be filled with great information, is still passive. You simply sit there and slip into a passive-receptive mode, at best, and at worst, you wake up wondering when you fell asleep and what you missed. This passive-receptive mode of merely watching something is the opposite of the interactive and engaging mode of personally finding information.

The current state of most dental patient education and consultation software has been stuck in this passive-receptive "TV" mode for some time. The orthodontist or assistant simply opens the software and presses play. The video rolls on screen, and they leave the patient to watch some videos. The idea is that the information will sink in, the patient will not have too many questions when the doctor returns, and he or she will hopefully still be awake. This technology has been a great benefit to many patients and practices worldwide compared to not having

patient education software at all, but as is the case with any technology, there is always room for growth and new generations of improvement.

Well, the next generation of patient education media has arrived with a new system called Visage from Anatomage. The Visage system is an interactive 3-D touch-screen workstation. It's a 42-inch computer screen and hardware with a touch interface just like the iPad®. There are videos loaded onto it with the typical patient education sequence for different treatment modalities. But these are not the passive videos of the past. They are actually animations of full 3-D models, which can be interrupted at anytime by the patient or doctor with the touch of a finger and spun around to view from any angle. For example, if an orthognathic case is being demonstrated from a lateral view, and the patient says, "Hey, what does it look like from the front?", they can engage the screen with their fingertip, spin the 3-D image around, and interactively find out for themselves.

Another great benefit of this technology is that it sets the doctor light-years ahead of the competition. Ponder the following examples of a patient getting consultations from three different orthodontic offices. One office might show some radiographs in a regular consult room on a light box, another office might play a slightly more lively
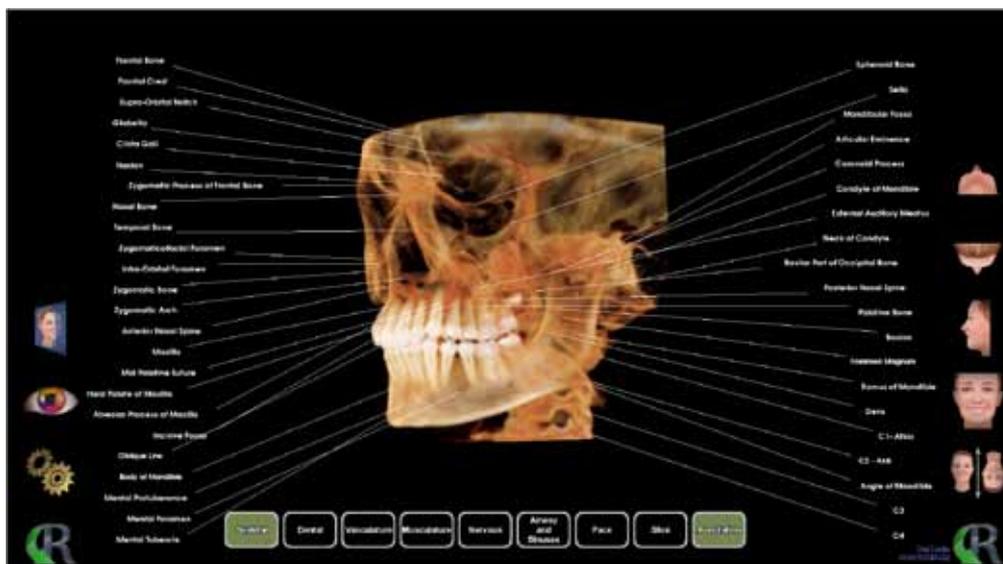
This collection of images shows some of the various 3-D models used for the interactive animations within Visage

video consultation on a computer, but if the third has an engaging, large touch-screen interactive display system, the problem is not going to be signing them up for treatment, but moving them along so others can be signed up too! Who would you go back to or recommend to others if you were in the same situation for yourself or for your children? Would you choose the office with the old light box and dim room or the office with the giant interactive iPad®-like

This 3-D image is from the anatomy education module within Visage. It is a CBCT scan of a patient with the hard tissue anatomy labeled. The Visage interface allows for different anatomical systems to be visualized independently or simultaneously, with full anatomical annotations

device? What would you remember and talk about if your friends or family asked how your consultations went? The answer is clear.

In addition to being the next generation of patient education and patient consultation, Visage also comes loaded with Anatomage's famous 3-D imaging software, Invivo, for reading CBCT scans. Another big difference exists here in that it's not just the doctor in the imaging room looking at the scan with a mouse and keyboard; it can be right there in front of the patient ready to engage and respond instantly to your touch. Going back to the orthognathic example, the doctor or a staff member could be interacting with the patient and the 3-D video, and then say, "Well, would you like to see what this looks like with your own scan?", open the Invivo software, open the patient's CBCT scan, and engage the data together with the

patient. Using the Invivo software, they can access all the advanced applications that normally come with Invivo, such as 3-D virtual treatment objectives, to show patients in 3-D what they would look like if they did the surgery, but this time at the touch of their fingertips on a huge 42-inch screen.

The Visage system also comes loaded with a full 3-D head and neck anatomy education module. This feature is geared more for doctors' review of anatomy in 3-D, but could also be used for patient education. A 3-D head and neck model is included that has the skeletal, musculature, vascular, and nervous systems visible and annotated for anatomical reference. With the swipe of a finger on the screen, one can explore human anatomy like never before.

Visage is a complete hardware and software solution that is based on the Windows® 7 operating system, which allows it to be used for running other applications as well. This means that it can be incorporated completely into the practice with programs such as practice management software, x-ray imaging software, photo and video software, Web browsers, and even games (and who doesn't love playing Angry Birds™ on a 42-inch touch-screen monitor?). For doctors who incorporate Visage into their consultation rooms, the problem won't be getting patients in the office and engaging them in an interactive personal way. The problem will be getting them out of the office, and what a great problem that would be! ▪

Douglas L. Chenin, DDS, earned his DDS degree from the University of the Pacific Arthur A. Dugoni School of Dentistry in San Francisco and holds an active California license. He is the Director of Clinical Affairs at Anatomage, Inc., and is involved in the research and development of the company's 3-D technology and applications. He regularly teaches continuing education courses on advanced 3-D imaging software and applications to doctors and dental auxiliaries at both beginning and advanced levels. Dr. Chenin is involved in facilitating and participating in research projects at multiple dental schools across the nation. He is also Adjunct Faculty at the University of the Pacific Arthur A. Dugoni School of Dentistry in the Orthodontics Department, and an Adjunct Professor at the University of Nevada Las Vegas School of Dental Medicine in the Clinical Science Department, where he teaches both residents and faculty how to use 3-D imaging to its fullest potential for both clinical and research applications.