



## TEACHING ANATOMY TO PHYSICAL THERAPY STUDENTS

### Dr Stephen Kanter explains how Primal Pictures has enhanced his teaching

Dr Stephen Kanter is a Doctor of Physical Therapy at Seton Hall University and Touro College, in New York City. He has been using Primal Pictures at Seton Hall since 2003, as well as including images within his lectures at Touro. The software was introduced for students and professors at Touro in July 2007 and they are just beginning to use it.

“There are no cadavers on campus at Touro and so work is very heavily based around computers, lectures and labs, which is a fairly standard way of teaching in a school without cadavers,” he explains. “I have been using Primal to enhance my lectures for many years and I encourage students to watch me and focus on my images rather than on their computer screen. During lab sessions we work together on the computer system, something that is common in both labs and lectures in the States.”

Dr Kanter has taught anatomy in five schools in the States and considers Seton Hall’s curriculum to be the best he has seen. “At Touro, space is limited and this does affect the way we teach anatomy,” he comments. “However, at Seton Hall, there is a lecture hall and two different laboratory spaces – one where I integrate Primal using models and pictures and the other, an off-site cadaver lab, where we focus on gross anatomy. Alongside the lectures and two labs, there is a surface anatomy class, so anatomy makes up nine or ten hours of class per week in the first semester.”

He explains how he uses the software in his teaching: “When I prepare my lectures, I integrate Primal images into my instructional slides – these are static images. I also use the software interactively at specific points in my lectures to demonstrate layers of anatomy. Lab sessions provide the opportunity for more interaction with the software and I often give students 15 to 20 minutes to work their way through four or five different structures on the software sticking to the image but learning the structure by rotating it and removing the layers. This is especially useful for studying vascular structures and neuro-anatomy and is also helpful when looking at ligaments, joint capsules and bursae.”

Dr Kanter uses the entire Primal product range but uses some products more extensively than others. “In physical therapy, athletic training and occupational therapy we are primarily interested in the neuro-muscular skeletal information – the muscles, bones, joints, nerves and the particularly the extremities – so I tend to use the products that focus on the arms and legs in my lectures,” he comments. “However, I also rely heavily on the Interactive Head & Neck, Thorax and Abdomen and Interactive Spine for home study as these products provide the information that really allows the students to assimilate what I have taught in a lecture or lab session and supplement their learning with the essential anatomy that we are not able to cover in class.”

In fact, as Dr Kanter explains, cadavers are not easily available in the States and those that are used for anatomy education are therefore allocated primarily to medical and dental students. “The level of detail required to train as a doctor or dentist is far greater than that required in physical therapy and therefore in

general, students of physical and occupational therapy and athletic training have less access to cadavers because they are not essential to their training.

“Due to the fact that for Seton Hall students the cadaver labs are off-campus and for Touro students there is no access to cadavers at all; having a good software programme is essential and that is why I pushed so hard to have it introduced at Touro,” explains Dr Kanter. “Fortunately studies have shown where there is no cadaver available, students still learn well with computer software and I think this is where Primal Pictures is particularly beneficial.

“As a professor, using Primal has taught me different ways to look at anatomy and so the way I teach has changed. Any good resource will adjust the way that you teach and Primal definitely has made a huge and very positive difference. The reality is that anatomy is a time-consuming subject in any school and whilst working with cadavers is a very dynamic process, working on a computer seems more tiring. I think there is a perception that you have ‘produced’ more when you have been dissecting a cadaver.”

Dr Kanter believes that having Primal as a resource has also improved the learning experience for students. “They find anatomy hard and although Primal does not make it any easier, it does offer a very solid resource to refer back to so that their learning experience is more complete,” he says. “No student has ever come to me to because they do not understand how to find a structure or explore something in Primal, whereas this can happen with a textbook. They are more likely to be concerned about the amount of information available to them, how they are going to learn it all and how they are going to be able to progress through their assignments within a restricted time frame.

“I think there are three main benefits to using Primal Pictures for anatomy teaching. The software’s interactivity is a major advantage when learning anatomy and helps with visualization. It also provides a variety of methods for presenting anatomy such as the coloured picture ‘cartoon’ option, the gross anatomy images and anatomy in motion. The range of different options available on the software is fantastic. Finally, the quizzes on Primal are a great learning tool and I often refer students to the self-quiz options when they are studying.”

Dr Kanter sees Primal becoming more widely used in the future: “I believe that over the next 10 to 15 years it will become more common to incorporate Primal into anatomy teaching. The students who are learning on it now, will continue to use it and pass the knowledge on. I certainly wouldn’t go back to my old methods now that I have discovered Primal Pictures.”

**Dr Stephen Kanter is a Doctor of Physical Therapy (DPT) in New Jersey, USA. He is a tutor at Touro College in the Physical Therapy department where he teaches exercise physiology, physical therapy interventions and healthcare administration. He also teaches anatomy and kinesiology in the Occupational Therapy department.**

**He has also been a professor at Seton Hall University for seven years, teaching part time in anatomy labs, surface anatomy (palpation) and basic rehabilitation. He also teaches on the athletic training programme.**