

## Orthodontic Education and Training: Where's the Beef?

Robert J. Isaacson

A number of years ago there was a television commercial featuring a kindly-looking grandmother holding a hamburger and loudly asking, "Where's the beef?" The point was that one brand of fast food hamburger was supposed to have larger burgers than another. The fame of that commercial rested on the average person's desire to get something substantive for his or her money, and so it is with orthodontics today.

Seasoned orthodontists and beginners all want to know how to treat their patients better. In a sea of ever-increasing amounts of information, "where's the beef" often seems to be the question. It is quite possible to be a continuing education (CE) junkie today, attend a never-ending series of courses, and emerge just as bewildered, or more, than you were at the start. How does the conscientious practitioner, indeed even the beginning student, deal with this exploding, almost epidemic quantity of information? Lots more hamburgers are available, but with seemingly an ever decreasing amount of meat.

Some of the best-attended lectures today deal with various new appliances. Everyone wants a take-home message after spending time and resources attending a lecture. That's a normal expectation. However, if you want to get off of the appliance-de-jour treadmill, it might be more beneficial to look at the problem in a different way.

To say that orthodontics is both a science and an art is to say that there are well-established scientific principles that underlie many of our procedures and these are reliable. There are also many aspects of orthodontic practice that are based on very imperfect science and these are not as reliable. There are things we know and things we think we know, and it's easy to get the two confused.

The goal of orthodontics is to increase the behaviors that are supported by good science and, therefore, give evidence we can confidently trust. These are principles, and learning principles is the core of education. Learning principles is sometimes disquieting because they are often nonspecific and the application is less clear. It is quite another thing to buy into the latest speaker's recommendations and begin to follow the precise directions because somebody said they work "in my hands." This approach is essentially trial-and-error and the cycle is repeated the next year, and the next year, until ultimately some of us grow fairly cynical about change.

Concepts that have a hard science basis for adoption are unlikely to change. If the concepts can be explained with mathematics or chemistry, we have every right to expect them to be reliable. If they can be explained by repeated sound studies that come to similar conclusions, they are likely to be

a good risk. On the other hand, if they are explained by an unsupported example how they allegedly work or by the testimonial of a charismatic speaker, they are at high risk of not behaving reliably when you apply them in your practice.

The point is that this is not a contest between theory and practice. In order for any information to be reliable, whether it has immediate clinical application or not, it needs to be justified by well-established principles. New gadgets and magic breakthroughs appear today and are gone tomorrow. On the other hand, education gives you an understanding of principles and represents ongoing truths as best we can know them. New secrets, total practice solutions and how-to-do-it instructions are training and often are applicable only until the next new one comes along. Years ago the secret of orthodontics was how to work the appliance. Today, it is far more important to understand the basic principles that explain why something can be expected to work.

When a person asks me where I received my training I am unsure how to respond. I think of training as preparation for a how-to-do-it technical task that is probably repetitive and without any need for judgment calls. A good CE program or a quality orthodontic program will educate students—give them principles to help them use the litmus test of science to examine the ideas of tomorrow. For some jobs, training is all that is necessary, and these are the jobs that may be the first to go. However, when I buy services from a professional, I am buying a service that is some science and some opinion. The opinion may not be perfect, but I have every right to expect the professional to be educated in all of the science supporting the proposed service, and to be trained in how to apply it properly.

New ideas will continue to come. New ideas are not dangerous or threatening. They represent our hope for progress and growth. New ideas are dangerous only if they are adopted and implemented without adequate evidence of their goodness. A demonstration of success in one case is not good evidence of a principle.

Professional growth means much more than attending the required number of lectures. It is not a question of theoretical versus practical programs. It is a question of quality; a question of substance. The orthodontic patient has every right to expect the practitioner to both know the science available today and to see that it is applied with state-of-the-art technology. Education without training may be a symphony in the Sahara. Training without education can be dangerous. Both are needed and both are critical components of a high-quality professional practice.