



## A path yet unpaved



The system of dental education is in dire need of revamping. However, the need goes deeper than simply rearranging the current mix of contemporary approaches

to biomedical and clinical science content oriented in disciplines that are near and dear to us. This is the time for transformational change. For more than a decade, external groups have indicated that dental education has failed to address the changing demographics of society, recognize the importance of experiential learning in cementing long-term knowledge, include students of other health-care professions in the educational process to create better health-care teams, and integrate the basic science curriculum with the clinical sciences.

Can we get out of the box? Only if we blow up the box so we cannot return to what is not only easy and comfortable, but arcane. How can our profession make the change that has been advocated for, repeatedly, over the last 10 years? It will require transformational change from insightful people who are willing to take the risk.

Educational psychologists have espoused active learning since the 1930s as an important component of the learning process to ensure deep understanding and retention of knowledge. Dental education has not embraced this theory; our curricula remain largely delivered by a traditional, passive, lecture format. Small group learning, where students retain some responsibility for discovery of knowledge, can capitalize on the intrinsic motivation for learning. The development of a set of basic skills for life-long learning is essential. What if we taught key principles and concepts at a level so that students would have those basic skills of discovery and content to be able to use their knowledge in novel situations? Fostering a culture of inquiry will help students evaluate evidence relevant to their clinical practice. This will create the opportunity, from the start of the educational process, for life-long learning and continuing competency. But, if students are responsible for their learning, then they must have time to go to the library, search the scientific literature, and to ask the questions "Why?" and

"How?" Key to this is the acceptance of several concepts. First, time must be preserved for independent study. Therefore, in an era of burgeoning advances in products and technology that enhance the profession, we cannot teach everything. Historically, we have been unable or unwilling to give up the outdated concepts for which there are no sustaining evidence. This is part of the reason why dental school curricula have become unmanageable. It is no wonder that students quickly become cynical and learn the "game" of survival. Careful negotiation between content experts who have for years "owned" their course content defined by discipline should be addressed by curriculum teams that include all disciplines of dentistry. These teams should be empowered to create an efficient curriculum that promotes time for independent study.

Another problem with dental education is the lack of connection between basic science and hands-on (ie, clinical) science. Most programs have a lock-step 2 + 2 program that focuses on basic sciences in the first 2 years and the clinical aspects of dentistry in the last 2 years. What if those 2 key concepts were married from day 1? Students could have an initial understanding of the science behind each clinical situation from the start. Instead of teaching our traditional disciplines of endodontics, periodontics, etc, we could organize the curriculum into units that integrate the disciplines under themes of health, disease, repair, and maintenance to give students a picture of the forest, rather than focusing on trees. All disciplines of dentistry could be viewed as equally important to the oral health of the patient.

The goal is to create an exciting curriculum that is efficient, fosters independent learning, does not purport to teach everything, and is motivating to students and faculty alike. Students will be involved in clinical dentistry and will make connections to the basic science throughout their 4-year program. The lines between disciplines will be blended by broader themes that span the program. Is it a risk to think so boldly? Yes. But I can't even remember what the box used to look like.

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