Deconstruction of the Curriculum: A Modest Proposal

Lawrence C. Zoller, Ph.D.

Dr. Zoller is Professor of Anatomy, University of Las Vegas School of Dental Medicine. Direct correspondence and requests for reprints to him at the University of Las Vegas School of Dental Medicine, 1001 Shadow Lane, MS 7410, Las Vegas, NV 89106-4124; 702-774-2629 phone; 702-774-2721 fax; Lawrence.Zoller@unlv.edu.

Submitted for publication 8/31/05; accepted 9/13/05

As reported in the October 2005 JDE,

A

s reported in the October 2005 JDE,1 ADEA’s Commission on Change and Innovation (CCI) in Dental Education has been formed to oversee the creation of a new set of core competencies to guide the dental school curricula in the future. The ADEA Council of Sections’ Foundation Knowledge Task Force, which is operating under the oversight of the commission, developed a preliminary version of the new competency document and presented it for the first time at the ADEA 47th Deans’ Conference held November 6-9, 2005. The new competencies document included a preliminary draft of a set of biomedical foundations (e.g., basic science and behavioral knowledge and skills) that underlie the competencies needed to function as an entry-level general dentist. At the deans’ conference, participants were divided into four working groups to review different areas of the curriculum and discuss what is absolutely essential for the education of general dentists and what is not. This process, as told to me, is called deconstruction of the curriculum. These four areas were selected for consideration because each has come under scrutiny for relevance and the amount of curriculum time allocated to it. The four areas were biochemistry/physiology, pharmacology, prosthodontics/restorative dentistry, and orthodontics/pediatric dentistry. Each review group included specialists in the area as well as individuals who teach in other parts of the curriculum in order to provide a diversity of perspectives about the importance and relevance of each topic area.

I was asked to be part of the process but due to a scheduling conflict was not able to attend. For readers who don’t know me, I am presently at the UNLV School of Dental Medicine, but for the past twenty-eight years, I was at the Boston University Schools of Medicine and Dentistry and for the past twenty years served as the director of anatomical sciences for the dental students at Boston University. I also ran a postdoctoral course in head and neck anatomy. In my copious spare time, I taught anatomy and neuroanatomy to medical students, occupational therapy students, and undergraduate students. So why should I, with my background, judge the merits of course content in physiology and biochemistry? Because, as was explained to me, people involved in the area of interest might be too parochial. Their perspectives would be skewed, and they may be hesitant to take a hard look at the curriculum relevance of their own area, so their opinions should be supplemented by those of experts in other areas of the curriculum.

I must admit that I don’t agree with this assertion. This implies that we who teach lose perspective. It implies that we can not think outside of the box. So, I intend to show that I can not only think outside of the box; I can stomp on the box and then shred it. I now present my “modest proposal” (with apologies to Jonathan Swift) for the deconstruction of the areas in which I am considered to be somewhat of an expert. These areas are embryology, neuroanatomy, histology, gross anatomy, and head and neck anatomy. This proposal has been developed after consulting some of my clinical colleagues and colleagues in the basic sciences.

First, embryology can be eliminated. It is not important for general dental practitioners to know how structures of the human body develop in order to provide dental care for their patients. I assume that, in the deconstructed era, individuals training in a postdoctoral program to be specialists in oral surgery, for example, will receive appropriate instruction in embryology that is necessary for delivery of patient care within their scope of practice.

My recommendation for neuroanatomy is based on three assumptions. First, the cranial nerves are taught in the head and neck gross anatomy course. Second, it
is assumed that students are introduced to the brain, spinal cord, and meninges in the gross anatomy course. Third, it is assumed that students learn about pain receptors and their interaction with the nervous system in physiology. With those assumptions in place, neuroanatomy can be eliminated. There is simply no reason that a general dentist needs to know about the structure of the spinal cord, spinal pathways, the brainstem, diencephalon, cerebellum, or cerebrum. Although these structures, especially the brainstem and cerebrum, have peripheral impacts on the oral cavity, these impacts can be discussed in brief case studies that can be sprinkled throughout the curriculum.

The study of histology is normally divided into two components: tissues and organs. With respect to tissues the student should learn about epithelia, connective tissue, and nerve. There is no need to spend time on the ultrastructure of cells, tissues, or organs. After all, the students are never going to see an electron micrograph again anyway. Furthermore, any knowledge at the ultrastructural level can be shifted into a course on cell biology if, in the new curriculum, such a course is deemed appropriate.

The organs that should be analyzed are skin (but only where it makes contact with the lips and face), teeth, gingiva, mucosa, tongue, salivary glands, palate, and, if there is sufficient time, the esophagus. The study of the histology of all other organs is ancillary to the practice of general dentistry and can be eliminated.

As already stated, a study of gross anatomy should include a general overview of the peripheral and central nervous systems. Likewise, it should include a general discussion of the lymphatic, vascular, muscular, and skeletal systems. What can be excised from the curriculum includes curriculum content related to the limbs, pelvis, abdomen, and the vast majority of the thorax. Any structure that travels into the head and neck should be examined. The function of the heart and lungs should be discussed, but that can occur in the physiology course.

Obviously, with this new curriculum, there is no need for dissection of a cadaver. And it is high time that this practice was dropped from the curriculum. Eliminating dissection will save space, thousands of dollars, hours of time, and the possibility of trampling numerous OSHA requirements and removing the angst from innumerable students.

The last area to discuss is the study of the head and neck. Let us begin with the skull. Most dental students study, in detail, the structure of the underside of the skull (norma basalis) and the inside of the cranium. With a few exceptions, the analysis of these areas can be eliminated. Ask yourself: when will a dentist be sticking a needle into the cranial vault or near the foramen magnum? One would hope that the answer is never. There might be a few structures that should be learned, such as where some muscles originate, but even that is questionable. It is only important to know the basic function of the muscles. To learn how they do it is really not necessary.

Even in this deconstructed curriculum, the student should know the bony structure of the anterior and lateral aspects of the skull and of course of the mandible. The students should also know the basic structure of the infratemporal fossa. The pterygopalatine fossa is an arcane horror, and although students should know that they will possibly be injecting anesthesia into it and what is in it, learning the exact borders of it is a waste of time and effort.

It is true that the head rests on the neck, but the general dentist need not know the posterior triangles of the neck and need only have a passing knowledge of the anterior triangles. Thorough knowledge of these areas can be left to the oral and maxillofacial surgeons. After all, it is the surgeons who will be digging around in these areas.

The new dental school curriculum should include the anatomy of the oral cavity. Knowledge of the external aspect of the face, the maxillary sinus, and nasal cavity is also necessary for the general dental practitioner.

This is the extent of my proposal. If these curriculum modifications are implemented, I believe the following goals can be achieved:

- Make the curriculum specific to what general dentists need to know to provide routine, non-specialized care to patients.
- Eliminate material that is potentially taxing to the student and will never be used on the job.
- Provide extra time in the curriculum for subjects that are vitally important.
- Save resources that can be used in other areas.

I invite your comments and hope this perspective stimulates other dental educators to provide similar recommendations about essential and nonessential curriculum content. I do think that if this curriculum or one like it is put into place, we will truly get the dentists we richly deserve.

REFERENCE