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One Size Starts All . . . in the Profession of Dentistry

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The metaphor of clothing is an appropriate one for examining the issue of education for the professional practice of dentistry. Change and diversity in every dimension of biological, psychological, and social life repudiate the notion that a homogeneous profession can manage the oral health of society either today or in the future. While acknowledging that oral health professionals must be diverse in their interests, skills, and education, and that one size does not fit all, the argument must be made that they are delivered into the profession as infants and, at birth, one size *starts* all.

At maturity, we humans are diverse. We differ from one another in almost every dimension. At birth, however, infants are remarkably similar. They tend to look the same, act the same, have the same needs, and wear the same size clothes. It is in the growth and maturation process, with the expression of differing genetic structures in the context of differing environmental circumstances, that marvelously unique human beings evolve.

This analogy serves to illustrate what is and should exist in the profession of dentistry. After a very similar gestation period—the professional doctoral education—a new life emerges into the profession to be molded by interests, aptitudes, and external circumstances into a unique contributor to the oral health of society. The issue that has been and is being raised, and that must be addressed, is what should constitute education during the "fetal" period. What constitutes the fully formed infant in the profession? What does the newborn professional need to ensure that he or she will be able to progress to maturity? A second but possibly more profound question is what responsibility does the dental education community have for rearing the infant to which it has given birth? Who facilitates the development of infant dentists into all they can be in their professional lives?

Entry into professional life is and should be attended by standards. These standards should reflect that individuals who have attained them possess entry-level attitudes, knowledge, skills, and judgment. No longer do they require the life-support system of the educational womb. They are able to manage their own functioning, albeit at a rudimentary level.

Among our problems in dental education today is defining the scope and depth of entry-level skills. We disguise our inability or unwillingness to grapple with this issue by using the vague expression "competent." Competent to do what? Competent: having *requisite* ability or skills; rightly prepared; sufficient. Our professional responsibility is to make the judgment of what constitutes requisite skills. Our task is to define what is appropriate for infant dentists entering professional life.

Our current tendency is to view competency as an encompassing notion—to educate individuals who know all and can do all, to give birth to a dentist who is fully mature—ready to live the professional life and contribute in the same manner as those with years of experience and professional maturity. There is reason for this attitude. After the awarding of the doctoral degree in dental medicine, we dental educators lose contact with and control over those to whom we have given birth. As a consequence, we feel compelled to bring the infant to adulthood while still in the womb, to educate dentists broadly in all aspects of dentistry and as deeply as possible within the time constraint of four years. No wonder the birth process is so stressful and traumatic. How is it possible to give birth to a fully grown adult?

The case to be made for the education of dentists is that it must prepare individuals to *enter* and *begin* professional life. It must be a process through which all pass who desire to be members of the profession, for it introduces them to the attitudes, knowledge, skills, and judgment that are common to all dimensions of oral health care in practice. It cannot be a process that anticipates every need of every practitioner for every circumstance.

While wanting to argue strongly for "re-visioning" and "re-forming" many of the goals and strategies of the current professional doctoral education program, the current discussion will be limited to arguing that the curriculum to enter the profession must not be dichotomized into one track for clinicians and another for scientists. Such a strategy would be inappropriate and unfortunate from both a functional and a cultural perspective.

The Functional Argument

Clinicians in dentistry function as scientists, if they are model clinicians. The practice of dentistry is the doing of science. Dentists observe the biological functioning of patients and their oral cavities, thereby collecting data. Analysis of these data suggests problems patients have or will have in their pursuit of oral health. Together dentists and patients establish individual goals. The dentist evaluates alternatives and constraints in achieving these goals, and

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with the patient's knowledge, understanding, and consent determines an appropriate course of treatment. Dentists execute agreed-upon interventions to attain oral health with subsequent evaluation to determine the extent to which they were successful in attaining the desired goals. Such is the practice of dentistry—such is the life of the oral health scientist. Every clinician must be an effective, scientifically founded problem solver; not to be is not to be an effective clinical practitioner of dentistry.

The goal of teaching science in the professional doctoral curriculum is twofold: to inculcate in future dentists the habit of "thinking as a scientist," since that is basic to competent future practice, and to help future practitioners become familiar with the entity that their practice will focus upon—the human being. Thus, human anatomy, physiology, biochemistry, pharmacology, microbiology, immunology, and pathology are means and ends. They are the means by which dentists are taught to think scientifically and ends that enable dentists to understand the principles and processes operative in the human body to which they will devote themselves in the practice of oral health.

Abraham Flexner had no more than this in mind when he argued persuasively for the basic biological sciences being an integral component of the medical curriculum in his renowned report of 1910 to the Carnegie Foundation for the Advancement of Teaching. William Gies had no more than this in mind when he authored his significant *Report on Dental Education in the United States and Canada* in 1926. And who among us would argue today, in the midst of an unprecedented explosion of knowledge in science and technology and an expanding need to treat biologically and pharmacologically compromised patients, that dentists have less rather than greater need to think like a scientist about the oral health problems of human (biological organisms) beings for whom they daily care?

That dentistry and dental education have not been as effective as necessary in achieving this bipartite goal of education in science is not the issue of the moment. Numerous authors through the years have documented our less-than-perfect effectiveness and have issued clarion calls for radical and dramatic change. While our strategy for achieving our goal is flawed, it does not follow that the goal is unworthy or should be abandoned. Rather, courage must be found by leaders in dental education today to recommit themselves to the goal, to resist all external constraints that exist to maintain the status quo, and to develop new strategies to give birth to oral health professionals who will think like scientists about the problems of the people they seek to benefit.

In addition to being applied scientists, clinicians must be applied artists and, increasingly, applied engineers in the practice of dentistry. The execution of interventions to benefit the oral health of patients very frequently requires the fabrication of restorations. In providing oral health care, dentists must frequently perform procedures that are artistically demanding and technologically sophisticated. Thus the expression has arisen in our profession: "the art and science of dentistry." The idiom expresses a deep and profound truth. Dentistry as practiced today is both art and science. The "and" grammatically and philosophically indicates that these dimensions are inextricably linked. They cannot be separated, but stand conjointed in a unity that is essential to practicing the profession. This line of argument or explanation suggests that, from a functional perspective, it does not appear reasonable to advocate two tracks of entree into the profession of dentistry, clinician or scientist; rather, one size *starts* all.

Cultural Arguments

Culture is meant to suggest that the assumptions, attitudes, and values basic to dentistry as a profession argue against the scientist or clinician strategy. The culture of dentistry today is a *professional* culture. As dentists, we value highly the esteem afforded to us by society. What does it mean to be a professional? The notion of profession is dynamic, subject to changing understanding and use by society. In one sense the term has a general and loose usage, meaning the opposite of an amateur. One is a professional to the extent one's entire life is devoted to an activity, in contrast to one who is only transiently engaged. While we repair our car occasionally, neither we nor society would call ourselves professional mechanics (or would we?). The concept of profession also has a much more restricted usage both historically and currently.

Characteristics of the Profession

In the early part of the 20th century, the sociologist Abraham Flexner, the selfsame reformer of medical education, delineated from historical and functional perspectives the characteristics of a profession. In a speech entitled "Is Social Work a Profession?," he elaborated the six cardinal characteristics of the classical professions: law, medicine (of which dentistry is a specialty), and the clergy. These characteristics have determined the concept of profession throughout the 20th century.

The first mark of a profession is that the duties involved are essentially intellectual in character. Neither art nor craft are excluded. Surgeons are no less professionals because they employ a scalpel in surgery. Dentists are no less professionals because they use a rotary cutting instrument to alter the structure of a tooth in preparation for restoration. But in neither of these instances does the ability derive its *essential* character from the procedure—the real character of the ability is the thinking process—the application of intelligence to solving a problem and seeking a solution. Flexner noted that in all intelligent options, the thinker takes on a risk. Professionals in their intellectuality assume personal responsibility for making correct and appropriate decisions.

We are accustomed to speaking of learned professions. The second key quality of a profession is that these individuals deal with a changing state of knowledge. They draw on the current knowledge base of society and their field to make their intellectual decisions. They are, therefore, learners—life-long learners. Professionals are individuals who continually retreat to the classroom, laboratory, and clinic for new knowledge to make intellectually appropriate decisions. They truly *practice* their profession, for each encounter brings new learning. It is the steady flow of new information that prohibits professionals' lives from deteriorating into mere routine.

Not only are professions intellectual and learning-based, they also must have a good and practical end. A professional cannot be only academic and theoretical. Those who would be professionals must have a definite and good end—in dentistry, the oral health of society.

A profession possesses a body of knowledge that it utilizes. It is a body of knowledge that can be communicated

through an orderly and highly specialized educational process, a curriculum that exceeds that expected of other vocational groups in society. In medicine, this is the four-year program leading to the doctor of medicine degree; in law, the three-year program leading to the juris doctor degree; in the ministry, postbaccalaureate education leading to the doctor of ministry degree; and in dentistry, our curriculum leading to the doctor of dental medicine.

Flexner further suggested that professionals tend to organize themselves into groups. Professional interests and activities are so absorbing, so rich in duty and responsibility, that professionals organize into societies. These societies then become organs for the achievement of societal good—Flexner's final characteristic of a profession.

The culture of dentistry today is the culture of profession. No intentional movement exists from within to "deprofessionalize" dentistry. In fact, the values of the profession of dentistry are such as to want to enhance its status as one of the learned professions. This being the circumstance, education for dental practice must prepare individuals to function within the context of the classical characteristics of a profession.

Dental education must develop young professionals who are able to apply their intellects in scientifically solving the problems associated with oral health. We must work to expand the knowledge base of the profession in the biological and engineering sciences, in art, and in the behavioral sciences as these relate to oral health. Dental education must communicate this new knowledge to clinicians who must eagerly aspire to learn and apply it in the context of their "practice." Dental education must continue to call students and dentists to their good and practical end, namely benefiting the oral health of society. Dental education must work to support and encourage the organizing of oral health professionals in groups to better advance the cause for which the profession exists.

This line of argument suggests that, from a cultural perspective, it does not appear reasonable to advocate two tracks of entree into the practice of dentistry, clinician or scientist; rather, one size *starts* all.

Conclusions

That the current traditional dental education curriculum is fraught with difficulties and requires "re-visioning" in today's changing environment is without debate. There is a problem. However, in our quest for a more effective profession, we must be wary of mistaking goals and strategies, ends and means. Functionally and culturally, there appears to be little disagreement regarding our goals. The means by which we obtain them is beset with controversy. The challenge facing leaders in dental education is the challenge of preparing individuals to practice the art and science of dentistry in a rapidly changing environment. It is the challenge of altering the attitudes of those coming under our tutelage to inspire them with the notion of their and our commitment to life-long learning. It is the challenge of establishing a vehicle for their life-long learning. Postdoctoral continuing education programs that are structured, problem oriented, participatory, sequential, and long term are imperative for developing a profession that is diverse and, in its diversity, able to meet societal need. The challenge to dental education is the challenge of acknowledging that we can only prepare individuals to *begin* their professional education in dentistry. One size *starts* all. Determining the design and fabric of the garment is the exciting adventure in which we who are dental educators are immersed.