GUEST EDITORIAL

What Have I Learned in 35 Years of Teaching?

When I was a dental student, we were taught that the patient comes first, that you should strive for excellence, that you shouldn't worry about your clinical speed, as it will come later, and that you should take care of your patients. Follow that philosophy, and you will succeed in your profession. That philosophy worked, and my peers have done very well for themselves, as dentistry has proven to be a respected and rewarding profession. The 2008 American Dental Association (ADA) Survey of Dental Practice shows that net income for independent dentists ranged from $325,430 in New England to $210,770 in the East North Central region. For many years we have been on the top of professions respected by the public, and in the 2006 Gallup Poll (dentistry was not on the 2008 Poll) for Honesty and Ethics of Professionals, dentists were rated fifth out of 23 professional groups.

At the second American Dental Education Association (ADEA) Advanced Educators Summit Conference in Baltimore in 2006, educators voted for a 1-year mandatory PG–1. Why? Our students pass the National Board Examinations. They have the didactic knowledge needed to practice dentistry, but the clinical acumen is missing. Dare I suggest that the endemic rise of non-clinician administrators controlling the curriculum is playing a role here? Historically, teaching in dental schools was performed by clinicians. Full-time educators were expected to practice one to one-and-a-half days per week, in large part because of the substandard salaries in dental education, but also to maintain their clinical skills. There are currently over 400 unfilled full-time faculty positions in dental schools. We all know that inadequate salaries are a major factor related to both recruitment and retention of highly trained, dedicated faculty, but does anyone see any realistic solutions to actually fix the ongoing problem?

I support the premise that people who enter education should be part of the university culture, which requires publication and research; however, there are few to no incentives to go into a career in dental education. Why bother if you will make less money? Obtaining a PhD might enable those interested in both research and academics to demand a higher starting salary, but those with a dental degree and even a specialty certificate are at the mercy of administrators who seem more interested in the "bottom line" than the overall quality of their academic programs. Some people like to work in a research laboratory, and some prefer to teach in a dental operatory. We respect and need both; we will not advance the science without the former, but we may cease to exist without the latter.

Rucker,[1] in a recent article in the *Journal of the American College of Dentists*, wrote that dentistry is still a surgically based profession requiring good hand skills and that refined perceptual skills and psychomotor mastery are required to succeed in practice. Lundergan and Lyon,[2] in the same journal, had a different take on this subject. They reported that research studies "have not confirmed a high manual dexterity aptitude for dentists." In one study, dentists were found to not be significantly different from the general population in the Johnson O'Conner Tweezer Dexterity Test No. 18. An additional study, using the Purdue Pegboard and Minnesota Manual Dexterity Test, found no difference between surgical and medical residents. Even though their test shows no correlation, a correlation could still exist. Was their control group a bunch of attorneys, or piano players? My take is the outcome assessment used was probably not an actual test of the skill levels needed by dentists, and thus may not represent the psychomotor skills necessary to practice our profession. Manual dexterity determines career options in the general population, and there are plenty of "good hands" people out there (and I am not referring to insurance agents). The key here is that historically, dental schools paid a lot of attention to the development of hand-eye coordination in their students, and by the end of the 4 years almost all students were competent in this respect. Dentistry always was about hands skills. Some students were naturals, and you could see it in the first year, but others bloomed later and showed quantum leaps when the hand-eye neural pathways clicked in. Since repetition is no longer accepted in today's educational paradigm, we are asked to teach it right the first time so you won't need to repeat it later. While I am certain this sounds great "on paper," those of us who actually TEACH know better. The truth is there is no substitute for repetitive-cycle motor motion to ensure psychomotor mastery. The only confounder is the time a given student will need before the circuits click in—they all progress at different rates. All clinical educators have witnessed this phenomenon, and this is what is so rewarding about education.

And, what good were the dental anatomy and fixed and removable technique laboratory courses? Well, they were a method of teaching multiple concepts at the same time. For example, the simple act of interdigitating a maxillary and mandibular tooth reinforced occlusion, buccal, lingual, and interproximal contours, root orientation, plane of occlusion, esthetics, and arch form. Was carving a maxillary premolar in dental anatomy a waste of time? I think not; besides developing hand-eye coordination it taught the technical and laboratory skills necessary to create a provisional restoration for a crown, fixed partial denture (PD), or porcelain veneer, and the anatomy critical for endodontics, periodontics, and implant prosthetics.

I know we will never be able to turn back the clock, but we as educators have the responsibility to teach all the skills necessary to allow "new" dentists to treat the needs of their patient population. Certainly, our graduates need to be sufficiently productive and proficient in their practices to be able to pay off their enormous student loans and support a family, but

the business model of dentistry should never impact the clinical decision-making model of patient care. When how much money you produce is more important than the needs of the patient, what "education" has the student learned? To close the circle, given that dentists are well respected and are doing very well financially, is there even a need for a debate that brings profit into the choice of appropriate care for our patients? I believe not.

Some prognosticators predict that dentistry will not be a surgical profession in the years to come. Well, those years are not yet here. If we look at the data from the ADA Survey Center 2006 Dental Services Rendered, 52% of the revenue generated by general practitioners (GPs) is from prosthodontic-related services (10% removable, 42% fixed PDs and single-tooth restorations) with an additional 20% for direct restorations (amalgams, composites). This does not include diagnostic services related to this treatment. If over 70% of the services a typical GP provides fall within the realm of restorative dentistry (and primarily prosthodontics) and those services require good hand-eye coordination, what percentage of the average curriculum time should be devoted to ensure that the graduate is properly trained? We have bright, intelligent, focused students who have made my 35 years in education meaningful and rewarding. What we need to teach today has changed and expanded in a manner that makes curriculum redesign a formidable task; however, perhaps curriculum revision needs a bit of tweaking to reflect the reality of the numbers noted above.

Ethics mandates that our goal should be the care of the public. We all talk about the art and science of dentistry. Involved in the art is an appreciation of color, shape, contour, proportion, and the ability to recreate what nature has given. The ability to recreate is predicated on manual dexterity. Patients indeed come first, and they need skilled, knowledgeable clinicians with "good hands" to satisfy their health care needs. How, then, will we meet this mandate, given the "graying" of our current dental education community?

References

1. Rucker LM: Dentistry—a show of hands, please! J Am Coll Dent 2007;74:4-10
2. Lundergan WP, Lyon L: Research on hand dexterity and the practice of dentistry—reality and myth. J Am Coll Dent 2007;74:15-16

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