



A Monthly Newsletter from Executive Director Richard W. Valachovic, D.M.D., M.P.H. The views and opinions expressed in this letter are those of the author and do not necessarily reflect those of the American Dental Education Association.

In this month's letter, Dr. Rick Valachovic, Executive Director of the American Dental Education Association, talks with educational risk takers at three new dental schools that are leading the way in curricular innovation.



Jumping Into the Water With Both Feet

Since ADEA inaugurated the [ADEA Commission on Change and Innovation in Dental Education](#) (ADEA CCI), our community has been talking nonstop about revising the dental curriculum to produce health professionals whose excellent technical skills are matched by an ability to think critically, collaborate, and behave ethically. We've also discussed how we might better engage our students, residents, and fellows, and help them develop an appreciation for the value of research along with a desire to serve the community.

This month I spoke with leaders at three of our newest dental schools, where the fruits of these discussions are currently on view. I selected these three as examples of the ways in which our new schools have had the opportunity to jump into curricular innovation with both feet and found some ingenious ways of pursuing our shared goals. I will use future issues of *Charting Progress* to share additional examples of ways in which our more established schools and other new schools are pursuing innovations.

Before I get into the nuts and bolts, it's worth pointing out that each of the schools was founded with a distinctly different mission. [Midwestern University-Arizona](#) strives to prepare outstanding private practitioners for the 21st century. [East Carolina University](#) (ECU) intends to produce general dentists with a passion for providing community service to North Carolina's rural counties. [Roseman University of Health Sciences](#) (Roseman) hopes to produce ethical practitioners who can operate in any realm. Yet, despite these distinctions, these new dental schools have a remarkable amount of things in common.

For starters, all of them use a systems-based approach to the basic sciences and integrate their instruction in this area with their teaching of the clinical sciences. They have replaced some or all semester- and term-long courses with blocks or modules that vary in length, and they have grouped these around themes. They routinely use active learning strategies, most notably case- or problem-based learning. They ask students to collaborate in teams, use critical thinking skills, and consult the research literature to solve clinical problems. They also employ systems of assessment that allow faculty to identify struggling students early and that undermine the oft-criticized practice of memorizing, regurgitating, and then forgetting information. Nevertheless, the new schools have distinct personalities and unique features that set each of them apart.

Midwestern University-Arizona

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The oldest of these "new" newcomers is Midwestern, which accepted its first dental students in 2008. In its quest to produce an excellent private practice dentist, Midwestern prioritizes efficiency and productivity. These priorities are most evident in the clinical curriculum, where the focus is on quadrant dentistry. Students work in pairs, with one acting as an assistant, just as they would in private practice, and they are encouraged to complete as much work as they can in the anesthetized portion of the mouth.

"Dentistry is four handed," says Dr. Russell O. Gilpatrick, Dean of the College of Dental Medicine on the university's Glendale, Arizona, campus. "If you don't have a dental assistant, you can't be efficient." Midwestern has remedied this problem by pairing students across classes. Third- and fourth-year students collaborate on a diagnosis and treatment plan and then assist each other with the treatment delivery. Third-year students perform the simpler procedures, and fourth-year students handle those that are more complex. Once a month, fourth-year students also review a profit and loss statement with their clinical instructors to evaluate their own productivity.

Midwestern's focus on efficiency applies to the faculty, as well. Among other innovations, the school has dispensed with departments and divided the faculty into two non-departmental areas, pre-clinical and clinical dentistry.

"I think it's the best thing we've done," Russ told me. "After 28 years in academics and being a dean, I saw that most problems stemmed from compartmentalization of faculty. We've gotten rid of that. Everybody's on board with the idea that it's *our* problem; it's not a department's problem—so the motto is 'get it done!'"

East Carolina University

Back east in Greenville, North Carolina, the ECU School of Dental Medicine just matriculated its first class in August. ECU also takes a novel approach to clinical education. It is the first dental school to situate most of its clinical education in rural communities and to do so by constructing its own clinics. These wholly owned Community Service Learning Centers will be clones of one another, providing a standardized clinical experience for students and residents under the supervision of calibrated ECU faculty.

"Our entire educational model was built around placing senior dental students in community health centers to do lots of dentistry in the settings where we expect them to practice after graduation," says Dr. Todd Watkins, Assistant Dean for Dental Education and Informatics at ECU's School of Dental Medicine. "Then we designed a curriculum that would get us to that end point."

To achieve the goal, ECU streamlined the didactic curriculum so that students could spend their last three terms immersed for nine weeks at a stretch in community-based clinical dentistry. To prepare students for this residency-like experience, ECU uses a variety of teaching tools, but relies heavily on the "CaseBlog." As at other institutions, ECU students work in teams to analyze cases, but the introduction of Yammer, a closed social media site where dental students and faculty can contribute posts in real time, has created what you might call problem-based learning on steroids. The dental curriculum will include literally thousands of cases over the four years.

This *U.S. News & World Report* [article](#) will give you a flavor for Yammer's use in the ECU classroom. On the morning we spoke, Todd told me that students had already posted 600 comments to the site during an anatomy block. His team graded a mind-boggling 33,000 such posts during the first term. Why engender this continual online dialog? From Todd's perspective, the reason is clear, "To teach students to problem solve." He believes, "you have to give them lots and lots of problems, and because all of their blog posts are graded, students know the faculty is paying attention to how they problem solve and not just their final answers."

ECU also stands apart in incorporating the same content typically covered in a ~~variety of public health courses in its curriculum. It provides students with the content~~

masters or public health program in its curriculum. If you're wondering how the school could possibly cram in this extra material, the answer is simple. ECU has expanded its program to include 6,000 contact hours.

Roseman University of Health Sciences

And what makes Roseman stand out from others? Perhaps Roseman's most distinctive feature is its emphasis on active learning in a noncompetitive, collaborative environment. Students are encouraged to see one another as lifelong colleagues and to invest in the success of the group. In other words, the bell curve is out; mastery learning is in. Such an approach means seeing that *all* students achieve a level of competence that allows them to graduate at the top of the class. While helping all graduates attain stellar scholastic rankings might be statistically impossible, Roseman sets a very high bar for achievement. Students must achieve 90% or better on each assessment administered before they can move on to the next curricular block.

On the surface, such scores might sound unachievable, but Roseman has replaced midterms and finals with a regimen of regular biweekly assessments, which encourage students to stay on top of the material and which allow faculty to identify struggling students early. Those in need of additional instruction receive it immediately and have the opportunity to demonstrate their mastery of the material a second time. With few exceptions, students are then able to move on and keep pace with their peers.

"We hope this kind of approach will reduce any unnecessary competition between students for grades, for specialty programs, and so on," says Dr. Victor A. Sandoval, Associate Dean for Academic Affairs at Roseman's College of Dental Medicine. He believes that reducing competition will encourage more collaborative learning, and by implication, reduce the need for academic impropriety. And Roseman's approach has an additional benefit. "If indeed the predictions are correct that health care will be more collaborative in the future," Victor notes, "well, all the more reason that the entire educational structure should be collaborative, as well."

Midwestern-Arizona and ECU also incorporate regular assessment in their programs. You might even say that ECU has its process down to a science. Each exam question, clinical procedure, and problem-based learning posting is tagged with "microcompetency" codes and mapped in a curriculum-assessment system that the school has developed to allow faculty to pinpoint deficiencies in student knowledge.

"We can be incredibly selective," Todd told me. "Instead of saying, 'that student is not competent in biochemistry,' we can say, 'that student doesn't understand lipid metabolism,' and give her or him additional instruction or cases to bolster that specific topic."

I could devote an entire issue of *Charting Progress* to innovations in assessment, but for now, let me just share one more tantalizing tidbit. Throughout the second year, Midwestern-Arizona assesses students weekly using something similar to an Objective Structured Clinical Exam (OSCE), which involves faculty role-playing. Is your curiosity piqued? Maybe Russ and his colleagues will show us how it's done at a future ADEA gathering.

It's interesting to note that all three schools also stress ethics. At Roseman, dental education begins with a three-day block on ethics and professionalism, and ethics leads off in Years 2, 3, and 4, as well. Victor A. Sandoval told me that Roseman hopes to inoculate students against some of the negative external influences they are likely to encounter upon entering practice. Apparently, Midwestern and ECU share that goal; both institutions also incorporate ethics early and often throughout their curricula. ECU introduces ethics in a 12-hour block during the first three weeks of school and embeds ethical questions in many of the cases students encounter. Meanwhile, at Midwestern, first-year students are taught the ["Four Topics Method"](#) of clinical ethics case analysis. They learn to consider medical indications, patient preferences, quality of life, and contextual features in the same way they consider factors in clinical diagnosis and treatment.

What strikes me most about the leaders of these schools is their willingness to go all out on a wide range of promising approaches in the classroom and the clinic. Some may think that their ways of doing things might represent a wrenching departure from the *status quo* at some institutions, but these pioneers seem eager to take the plunge into uncharted waters. They all share a genuine excitement for being part of an institution that is breaking new ground in education, and I sense that, to greater and lesser degrees, they view their work as imperative.

"What usually happens in dental education is somebody goes out on a limb, and everybody says well, we'll watch and see how that works for a while before we dip our toes in that water," Todd Watkins observes. "The fact is I don't think we can wait any longer. Schools are going to have to start taking some educational risk and implementing things faster."

The existence of these three schools, not to mention the many other ADEA member institutions where curricular change is in full swing, indicates that we may be on the cusp of a wave of innovation. I, for one, am eager to see others take the plunge and begin swimming in these waters.



Richard W. Valachovic, D.M.D., M.P.H.
Executive Director
valachovicr@adea.org

[American Dental Education Association](#)

1400 K Street, NW, Suite 1100, Washington, DC 20005

Phone: 202-289-7201 Fax: 202-289-7204

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