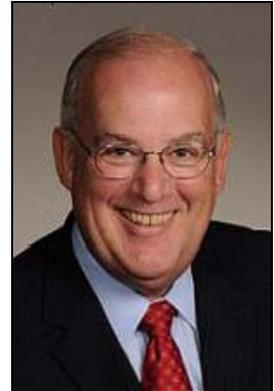




A monthly newsletter from Executive Director Richard W. Valachovic, D.M.D., M.P.H. The views and opinions expressed in this letter are those of the author and do not necessarily reflect those of the American Dental Education Association.

In this month's letter, ADEA Executive Director Dr. Rick Valachovic explores what's behind the headlines touting the "flipped classroom" and examines how two dental educators are applying this concept in their classrooms.

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A Visit to the Flipped Classroom

It seems as though the education world has fallen head over heels about something called the "flipped classroom." In the last few months alone, *Time*, *Wired*, *The Atlantic*, and *The Chronicle of Higher Education* have all examined the topic. A [book](#) by the high school chemistry teachers who are credited with coining the term came out this past summer.

And none other than Bill Gates—whose private foundation is underwriting numerous educational reform initiatives—has endorsed the use of a flipped classroom.

So what exactly is the flipped classroom? At its most basic, this pedagogical model inverts or flips the traditional relationship between homework and schoolwork. Instead of receiving course content through in-class lectures, students first encounter new information at home, most often through video-recorded lectures posted online. Then, teachers use classroom time to clarify and review key concepts or to practice new skills (the ostensible purposes of traditional homework). The idea is to replace the relatively passive experience of listening to lectures with more engaging activities such as problem solving and working in groups. You can find a more detailed description of the [flipped classroom](#) on the website of the nonprofit Educause.

I know of few in the dental education community who have embraced the flipped classroom per se, but many ADEA members are focused on better engaging students in the classroom. You can connect with them through the [ADEA Community of Interest for Scholarship of Teaching and Learning \(SoTL\)](#). Some have taken advantage of new technologies, while others have adopted active learning strategies such as problem- or team-based learning.

Among our many proponents of classroom innovation is Dr. Timothy D. (Tim) Wilson. Tim, an Assistant Professor at the [Schulich School of Medicine & Dentistry at Western University](#) (formerly University of Western Ontario), teaches anatomy to health professions students in several of the university's schools. Five years ago, Tim taught Dentistry 5100 Gross Anatomy as a traditional lecture course. Today, he delivers the content in two shorter, compressed courses as part of Schulich's newly integrated curriculum, and he has flipped the instructional model.

"My goal is for the students to take lead roles within the class. I'm the organizer, but not the boss," Tim told me. To achieve this objective, he posts between two and six pages of diagrams with explanatory text on the Web prior to each class session. In the classroom, he shares the microphone and the laser pointer with his students, encouraging them to describe and demonstrate various parts of the anatomy being studied. He still displays PowerPoint slides at the front of the room, but rather than describing each diagram, he uses them as anchors for discussion.

Tim didn't set out to adopt the flipped approach, but he found that his decision to

become “a guide on the side” led him in this direction. He also makes frequent use of clickers connected to an audience response system to get a sense of what his students are gleaning from each lesson.

“Now that the class is interactive, I get a better sense of which students are floundering,” Tim told me. Many flipped-classroom advocates cite this benefit, pointing out that without this type of interaction, faculty may not realize that students are struggling until they calculate their final grades.

Dr. Gwen Essex made this same observation after flipping her clinical course for first-year dental students at the [University of California, San Francisco, School of Dentistry](#). The Clinical Professor and Director of Educational Technology adopted a flipped approach to create more course time for clinical activities, but she has derived numerous other benefits from posting her lectures online for students to review prior to attending class.

“It gives them a chance to own their learning,” she reported during a session called [Engaging Today's Learners Through Hybrid and Blended Instruction](#) at the 2012 ADEA Annual Session, which took place this past March in Orlando. “They come in with a better understanding of what I am going to expect and a better opportunity to succeed.”

The flipped classroom seems especially well suited to Gwen’s course, which already had a well-defined active-learning component. Previously, she lectured students about what they would be doing in clinic, demonstrated the activity, and then walked them down the hall (a five-minute trip that she reports invariably took 20 minutes). During the clinical portion of the class, it became apparent that some students had understood the lecture much better than others, but soon class was over, and the next week they were on to a new topic.

With her lectures now posted online along with related articles and a list of expectations for each clinic session, students can prepare at their own pace and come to class with pertinent questions in mind. Gwen fields these and reviews key points in a clinic huddle at the start of class. Following each clinic session, students are expected to reflect on their experiences in an online portfolio where Gwen offers additional feedback and support for student learning.

Gwen believes that, in addition to freeing up a full hour for clinic time each week, her flipped classroom is part of a larger cultural shift in how we teach students. As she asked those gathered in Orlando, “If we want to develop critical thinkers who will continue to learn over the course of their profession, then why are we relying on the lecture?”

That's a good question, one that Dr. Frank W. Licari, Professor and Associate Dean of Academic Affairs at [Midwestern University College of Dental Medicine-Illinois](#), has wrestled with in recent years. Frank played a central role in developing the [recently revised curriculum](#) at the [University of Illinois at Chicago College of Dentistry](#), and he continues to innovate in his current position at Midwestern.

“We’re looking at developing a different type of student, one who thinks critically, who is a self-directed learner,” Frank told me when we spoke last month. “We don’t think those skills can be gained purely in a lecture environment.”

We've carefully selected cases that feature controversial topics in dentistry that don't have a right or wrong answer,” Frank explained, “so that students go through a process of investigating things on their own. There is still a desire on the part of some faculty to get to the answer, to tell students the right way of doing things or at least what they perceive to be the right way. That’s good for today, but what about tomorrow?”

This perception echoes Gwen Essex’s concern that we need to do more to engage students in continuing to learn once they’re out in practice. Doing more to engage students can be challenging for faculty, who are accustomed to directing students toward learning objectives under very real time constraints. These new paradigms challenge many students as well, some of whom prefer to be told what they need to know in the familiar format of the lecture.

In Tim Wilson’s experience, “The passivity of some students is a hard nut to crack.” That said, student response to his flipped classroom at Schulich has been

overwhelmingly positive, even garnering Tim several teaching awards.

"Students loved Tim's course," said Dr. Richard Bohay, Assistant Director for Academic Affairs at Schulich. "He has their attention. They are engaged in the process. They are responding."

According to Richard, Tim's singular focus on the scholarship of teaching and learning sets him apart, but many of Schulich's faculty members are employing active learning strategies in their classrooms. The dental school's new, integrated multidisciplinary curriculum, now in its fourth year of implementation, enables students to revisit the most important curricular content through a series of increasingly complex cases.

"Our goal was to get away from teaching the same material five times by five separate individuals in five different courses," Richard explained. "There is still redundancy, but it's planned redundancy, and the faculty is more conscious about the way they are delivering content."

Richard is enthusiastic about incorporating new teaching techniques in courses at Schulich, but he doesn't dismiss the lecture either. In his view, it remains a useful way of providing students with essential information and emphasizing key knowledge.

"Different areas lend themselves to different techniques," he told me, "and different teachers are successful with different techniques. All of these things have their place, and if teachers are interested and keen on employing them, they can all be successful."

This view seems eminently reasonable, and well worth keeping in mind. The recent flood of media coverage surrounding the flipped classroom suggests that some view it as a panacea for solving education's ills. That is too tall an order for any single teaching strategy. It also strikes me that the emphasis on the use of videotaped lectures by some flipped-classroom adherents may be overly prescriptive, leading educators down yet another dead-end path. As some critics point out, videotaped lectures are still lectures after all, and poorly delivered lectures are no more likely to engage students at home than they do in the classroom.

Nevertheless, those who are experimenting with content delivery are clearly onto something. Whether you call the approach blended, hybrid, inverted, or flipped, it's hard to argue with courses that give students the opportunity to take in new information at their own pace, encourage them to come to class fully prepared, and create opportunities for interaction among students and teachers. These steps not only better engage students in the classroom, they encourage students to take responsibility for their learning, they help faculty take the temperature of the class as a whole, and they create opportunities to identify students who can use a helping hand. These results are all to the good.

Of course, the ultimate test of the flipped classroom will be whether it can deliver better student learning. Dr. Vincent J. Iacono, Chair of the Department of Periodontology and Division of Endodontics at [Stony Brook University School of Dental Medicine](#) recently put me in touch with a member of his faculty who hopes to measure this impact. Dr. Steven M. Zove, Director of Predoctoral Periodontics, plans to develop some assessments to compare retention of specific course content when it is delivered via traditional lecture and when it is delivered in a flipped classroom. I wish him well in this endeavor and look forward to seeing his results.



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