

In the Way of Learning

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Several years ago, I was invited to co-teach a one-day course with several faculty members at a US dental school. We were each responsible for providing a 15-minute presentation. After each presentation, the students, who were seated at round tables of six, were given several questions to ponder. As I moved around the room and visited different tables, I learned something I've never forgotten:

I was in the way. Of learning.

Thinking the students would be thrilled to have direct access to my expertise, I sat down with the first group engaged in conversation. I was welcomed by silence as if I were a giant mute button. I shared a brief overview of the points I wanted to make and provided some direction toward the responses I expected — what I hoped they would learn. There were no questions. They replied that they would let me know if they needed me. As soon as I stood up and moved to the next table, the student discourse came back to life.

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As I stood in the class not knowing what I should be doing, I saw a student looking toward me. She kept smiling at me while gently nodding her head. Finally, someone who valued my knowledge! When I approached her, I quickly learned what she wanted from me was not my expertise but to move out of her sight path as I was blocking her view of the screen on which several references were being displayed.

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Up until that time I had perceived faculty as the conduit between knowledge and the student. Knowledge existed within me, and my role was to transmit most, if not all of it, to the minds of students. One could visualize this as a simple consecutive path: Knowledge-Faculty-Student. Little did I realize that I was in the way of learning.

Educators have access to abundant new technologies that can improve learning for our students: active learning, simulation and modeling, clicker systems, adaptive learning, collaboration software tools, and flipped classrooms. These technologies have proven to be quite effective in providing faculty with new tools that improve students' ability to engage more deeply with the course material, collaborate with each other, and appeal to the multiple learning styles that best suit each student. But are students really learning better?

According to an article titled "A Newer Education for Our Era," in *The Chronicle of Higher Education*, not really. The question faculty should be asking is not what our students are learning, but what we are learning — the faculty

and the academic institution — about learning? The point is that until our current learning paradigm is transformed, whichever new technology we add to the mix will most likely not reach its full potential and neither will our students. It's not that we are failing our students. Most faculty come to dental education with a wealth of knowledge, professional experience, and seasoned intuition, but they are hampered by teaching skills based on the way they were taught.

Today's learning environment demands a new approach to education. The explosion of data since the advent of the internet and the digitization of knowledge cannot be underestimated. Ninety percent of today's data was generated in only the past two years and with the expansion of the internet of things (IoT) and artificial intelligence (AI) into our work and personal lives, data are being created at an exponential rate. So what will be our profession's response? Increased lecture time? Longer semesters? A five-year predoctoral dental education program?

I doubt that any of these approaches will suffice. An incremental increase in education hours can never keep pace with the exponential growth of information. Eventually something must give. Perhaps that "something" is our perception of our role as teachers, choosing instead to visualize our new role as learning facilitators and simply moving "out of the way" of learning. To do so, the very culture we were trained in will require reform.

How many of us still present information to students on PowerPoint slides crammed with important information we know our students must learn, including those important, yet rare health anomalies we find utterly fascinating? It's

a habit hard to break. Yet educational research tells us that students learn more effectively via experiential learning — a form of active learning in which students discover knowledge through a process of engagement and reflection rather than by having it transmitted to their brains by a faculty member. A flipped classroom is one method of delivering experiential learning. The faculty member uses her wealth of learned knowledge and experience to determine which learning materials the student can utilize to best understand the subject matter, such as textbooks, videos, and journal articles. Students consume the materials on their own time and at their own pace, often using technology such as a smart phone or digital pad. During class time, the faculty member provides questions for small groups of students to consider and respond to while she *moves out of the way* of learning and allows students to engage directly with the material in a collaborative format.

Do you require students to take multiple-choice exams that necessitate substantial security and in which material must be memorized? If you do, most likely you are not assessing student learning but only memorized facts or excellent guessing techniques and clever mnemonic devices. Today's students have no need to memorize facts to be successful in their careers. The digitization of knowledge coupled with the convenience of handheld devices provides us with real time access to any data we need to know. What students do need are the skills that will make them future ready — critical thinkers with strong communication skills whose minds are resilient and able to adapt to a constant flow of new information. Students

must learn *how to learn* and faculty can guide them on that path by rethinking our position in the learning environment.

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Our patients are far more interested in what we know now and not what we learned years ago in school. They value us as lifelong learners who do not regurgitate what we have memorized but instead use critical thinking skills in the moment to understand them as individuals. This means developing our students' ability to perform at a higher order level of thinking, predominantly the ability to analyze and evaluate patient information leading to the creation of innovative ideas that allow us to readily adapt to the fast changing world of constant new data. We need our students to be empathic good listeners who can communicate effectively utilizing multiple communication styles and formats and across all cultures. Students should understand the person-centered care approach to improving oral health, viewing dentistry as a critical com-

ponent of overall health and that we practice in collaboration with other health professionals.

For academic dentistry to deliver these competencies to our students, our learning environments, including our physical and pedagogical position and role in that environment, must reflect these aspirational goals. This begins with faculty adjusting their mental models. Until then, new technology applied with an old mindset will not suffice in preparing our students for the future of healthcare delivery and success in their careers that will extend another 40-plus years into the future.

Are you in the way of your students' learning? If so, you are absolved, as this is how we were taught to teach. But we can change and become facilitators of learning by rethinking our position in the learning environment and embracing learning theory. Faculty cannot do this alone. They require institutional support in the form of faculty development opportunities, financial and time resources, and collaborative support among the leadership and faculty at each academic dental institution. Dental schools and programs can also collaborate with each other.

By establishing a professional learning community in which our academic dental institutions share effective practices, dental educators and their students can benefit from this “ecosystem of learning,” an opportunity we should explore. If our students are to move up the learning taxonomy pyramid toward robust critical thinking skills coupled with the ability to be effective communicators, we as faculty must also take this journey, and then lead them on it. ■

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