



Episode 2: The Science of Learning: Evidence-Based Teaching Approaches (Part 2)

Featuring Michelle Daniel, MD

In Part 2 of this conversation, host Leslie Fall, MD, continues with Michelle Daniel, MD, Professor of Emergency Medicine and Vice Dean for Medical Education at UC San Diego, turning from theory to the practical work of helping educators actually adapt. Dr. Daniel argues the real barrier isn't a lack of evidence or theory, it's translation. Most clinician-educators are stretched across patient care, teaching, and research, and expecting each one to independently master education science is unrealistic. Her answer is both to build interdisciplinary teams where educational design is treated as its own form of expertise and to make the problem visible to faculty first: showing them, for instance, that a learner who reaches the right diagnosis can still have a fragile reasoning process, so theory stops feeling abstract and starts feeling useful.

The two dig into concrete ways AI can lighten that load for busy educators, from drafting assessment questions to facilitating chart-stimulated recall, walking a learner through their reasoning on a real case using a HIPAA-compliant AI tool. Dr. Daniel frames this as cognitive offloading for the educator, freeing up capacity for the coaching conversations that often get squeezed out by time pressure. Asked to redesign medical education from scratch, she proposes organizing training around how expertise actually develops rather than around courses and content blocks: building strong foundational illness scripts early, deliberately increasing case complexity over time, and shifting assessment away from isolated exams toward continuous, workplace-based observation—or "a thousand of points of light." She sees real promise in AI's ability to track what each learner has actually encountered, enabling truly individualized coaching and, potentially, more flexible time-to-completion.

Even so, Dr. Daniel draws a firm line. Asked whether AI collapses the distinction between student, intern, and resident, she says no: foundational expertise development still has to happen, and the greatest current risk isn't AI itself but learners' instincts to shortcut the "productive struggle" that reasoning actually requires. Technology can ease plenty of friction, she argues, but some things are supposed to be hard, and that difficulty is the point.

She closes with the question she thinks the field isn't asking honestly enough: not just how to incorporate AI into medical education, but which capabilities physicians must still develop and protect in themselves so that anything else can be safely offloaded. Ultimately, she says, the field needs to decide not only how to educate physicians for an AI-enabled world, but what kind of physician that world actually requires.

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