Spaced Education: A Key Component of Effective Teaching & Learning

Have you ever heard the old saying “repetition is the key to learning”? Most often attributed to the famous basketball coach, John Wooden, this principle is an important one in education. Why? Because cognitive science tells us that the human memory is not reliable; we all experience decay in our ability to recall facts or details. Ever heard of “the forgetting curve”? Established originally in the late 1800s by a researcher named Hermann Ebbinghaus, it looks like this:

![Graph showing the forgetting curve](image)

What Ebbinghaus discovered is essentially this: we generally forget at least 40% of material we read in under 5 minutes! Because our memory is so unreliable, we have to find methods that increase the likelihood of retaining information. This is especially important in medicine, where physicians must carry with them facts that will enable them to function effectively in caring for patients. In an interesting study, Kerfoot et al sent weekly email messages to a randomized cohort of third year medical students after they completed their core surgery clerkship rotation. Students received the emails for variable time periods. The emailed material included a clinical case scenario, a clinical question in a multiple choice format, the answer to the question, a summary of teaching points related to the scenario, and a brief explanation of the answers. Each week’s email content also included overlap of the teaching points from the previous week’s content. Two randomized cohorts of students (one group that received the emails, the other one that did not) were then assessed at the end of the year using a standardized exam. The result? Students in the group receiving the emailed content performed better on the exam, and those who received emailed content for >6 months outperformed those who received emailed content for <6 months.

Apparently, we retain information better when we encounter it repeatedly, especially if we have to answer frequent questions about it. What are the implications of this approach for medical education? How can we put this approach to work in our own teaching? I would like to hear your thoughts about this one….and I’ll do my best to remember what you tell me!

David Musick, PhD

Professional development conferences can be a mixed bag—some sessions are relevant and outstanding and others not so much. This was not the case with the AAMC annual meeting last month. Our delegation of about a dozen members of the dean’s staff and four of our students all agreed it was overall one of the most educational and inspirational conferences we had ever attended. The workshops and other sessions provided us with superb ideas and professional how-tos in our respective areas, including diversity and inclusion and faculty and student affairs. We were also inspired by plenary speakers like Dr. Atul Gawande, health policy scholar, writer, and physician, and Doris Kearns Goodwin, presidential historian and Pulitzer Price-winning author.

The most riveting presentation for me was Dr. Lucy Kalanithi, widow of Dr. Paul Kalanithi, a neurosurgery resident at Stanford who died of lung cancer at the age of 37. Paul wrote a best-selling memoir, “When Breath Becomes Air,” that explored his own mortality. Lucy wrote the epilogue to the book after her husband’s death. She spoke eloquently about her experiences and the importance of living a meaningful life.

As a group, we had mapped out which sessions we would attend beforehand so that everyone returned with a wealth of new knowledge to share. Our debriefing session was lively, and we compiled what we thought were the best ideas to be implemented at VTCSOM in the coming year.

As if the meeting couldn’t get any better, our own Dr. Carol Gilbert was presented with the Arnold P. Gold Foundation Humanism in Medicine Award. Given annually, the award honors a medical school faculty physician who exemplifies the qualities of a caring and compassionate mentor in the teaching and advising of medical students. Students at each of the country’s 145 medical schools nominate one person from their school. Among those nominees, only one winner is chosen by the foundation. According to the grapevine, this year’s selection was no contest.

Carol was recognized at several events during the meeting and gave an inspirational speech that had multiple standing ovations. We were so proud. Not only was the award an honor for her, but it was also quite an honor for our school. Congratulations to Dr. Carol Gilbert for epitomizing the importance of humanistic qualities in medicine and teaching.

Read more about Dr. Gilbert’s award.

Cynda