

Practice Makes Perfect—And Not Just for Jocks and Musicians

Rehearsing tasks, from teaching to medicine to consumer service, frees the brain for complex work

No one disputes that practice is the way to prepare for a cello concerto or a tennis match—complex, physically challenging activities that have to be executed without a coach's immediate direction or the chance for a do-over. But these activities are not unique. Thousands of other tasks that are done "live"—from delivering employee performance reviews to examining a patient, from hearing a customer complaint to reacting to a student's question—would benefit from practice beforehand. The problem is that we seldom think of these other kinds of work as the sort of things that can be improved by routine and repetition.

Why is practice so helpful for complex, nonrote tasks? One reason is that the capacity of our brains is finite. You might be able to chew gum and cross the street at the same time, but you probably can't cross the street, solve a math puzzle and answer your child's question about why the sky is blue.

Practice lets us execute a task while using less and less active brain processing. It makes things automatic. When performers master one aspect of their work, they free their minds to think about another aspect. This may be why many of us have our most creative thoughts while driving or brushing our teeth. Rote learning and conceptual thinking often feed synergistically on each other, freeing our brain capacity for those tasks that require the maximum amount of attention and creativity.

Consider, for example, how this might be applied to developing customer-service skills. When faced with a customer furious at the quality of service and wanting someone to feel his pain, it is important to remain calm and express understanding—and not to argue the disgruntled customer into a deeper frenzy. So managers often, understandably, instruct representatives to concentrate with laser focus on managing their own demeanor. But it's also critical to listen, analyze problems and identify solutions. And this is the dilemma: The more that service representatives concentrate on maintaining the right tone, the more they risk doing so at the expense of actually resolving the situation at hand.

A better approach might be regular "irate customer" practice. Once a week, employees would practice maintaining the right demeanor as colleagues played angry customers. The result: Employees not only would be more unflappable but also could reserve more of their brain-processing capacity for troubleshooting.

They would succeed not by thinking about having the right tone but by *not* thinking about it.

In fact, practice can teach skills that even coaches do not fully understand. During World War II, as neuroscientist David Eagleman has recounted, certain "spotters" among the British defense forces could distinguish the sound of German planes from British ones long before they were in sight, but they couldn't explain the sonic difference. So a reliable spotter would stand next to a trainee while he guessed the nationality of an incoming plane. The spotter simply answered "right" or "wrong," and soon enough the trainees had learned to "spot"—even if no one could describe what it was they had learned.

The anecdote suggests the many ways that instructors, in talking about practice, are just as likely to get things wrong as to get them right. Here, social science can help. Research has established that fast, simple feedback is almost always more effective at shaping behavior than is a more comprehensive response well after the fact. Better to whisper "Please use a more formal tone with clients, Steven" right away than to lecture Steven at length on the wherefores and whys the next morning.

Similarly, we often like people who take feedback well. But is the employee who graciously admits flaws and perpetually promises improvement really better than the one who bristles but comes back the next day with new skills and a focused mind-set? Trainers and managers give feedback all the time, but they rarely ask individuals to use it. An explicit request can normalize the idea of "using" rather than passively "taking" feedback.

When giving advice during practice, it is easy to mistake critique for correction, a subtle distinction. What drives mastery is encoding success—performing an action the right way over and over. A long analysis of why a soccer player's ankle should have been locked when receiving the ball (critique) may be less effective than asking him to stand to the side and strike five balls in a row with his ankle correctly locked (correction).

Technology is a crucial new tool for getting practice right. In contrast to past decades, video is now easy to produce: For a careful assessment of whether someone is encoding successful behaviors, just record a few minutes of action on your cellphone. It also helps to recognize that recording a practice may be more valuable than taping a game.

For professionals, the tasks that can be practiced to the greatest benefit are sometimes surprising. Data show that one of the primary determinants of whether patients consistently take their medications is their relationship with their

doctor: Does he care about me? Listen to me? Notice if I don't take care of myself?

It's hard to rearrange doctors' schedules (and, sometimes, to modify their financial incentives) to let them spend more time with each patient. But a bit of training in the basics of patient interaction—establishing eye contact, smiling occasionally, nodding in response to comments and repeating key points—could improve medical outcomes dramatically. Practicing with actors playing patients, and with doctor's facial expressions recorded on video, could mean a big shift at a surprisingly low cost.

Whatever profession or skill is involved, when it comes to practice, simpler is often better. The brain likes to learn—but it prefers to do so, as cognitive scientist Daniel Willingham notes, in manageable leaps. Then it releases the chemicals that reward success and deeply encode behavior. Making practice too difficult can sometimes result in random adaptations to effective technique. Imagine a 9-year-old in a batting cage swinging at big-league pitches. The young hitter is as likely to try ineffective adaptations as effective ones.

Some of these strategies about practice are making their way into higher education. My colleague Norman Atkins, founder of the Relay Graduate School of Education in New York, likes to invoke the example of Michael Jordan, whose demanding methods of practice "reset" the habits of the Chicago Bulls and improved the team. Mr. Atkins adds, "Once you have good teachers who as a matter of course like to practice and rehearse and think, it's the most professional thing you can do. It will raise the expectations of teams in their field as well."

So his graduate school, in contrast to more theory-heavy programs, preps teachers for what they will do all day on the job. And he finds that they love it. "What they appreciate about practice is that they get immediate feedback focused on small bite-sized moves in a way they can't when they are teaching for real. And everybody gets a turn. If you swing and miss, you swing again."

—Mr. Lemov is a managing director at Uncommon Schools and the co-author of the new book "Practice Perfect: 42 Rules for Getting Better at Getting Better" (Jossey-Bass).

A version of this article appeared October 27, 2012, on page C3 in the U.S. edition of The Wall Street Journal, with the headline: Practice Makes Perfect—And Not Just for Jocks and Musicians.