

The summer before I started law school I worked as an umpire in the northeast corner of Ohio. I umpired for youth baseball and softball and the kids I saw ranged from 9 to nearly 19. It's not a terrible gig, actually. I made \$25 to \$30 a game, which paid for a whole lot more gas in 1997 than it does now. The girls were usually courteous. The boys less so. The parents were... Well, I'll just tell you a little story. I was umpiring a game in Girard, Ohio. It was a game for 15- and 16-year-old boys. These kinds of games were rather enjoyable to watch when the teams were skilled and evenly matched. At this age, curveballs actually curve and fastballs arrive from the mound with a really enjoyable pop into the ready leather of the catcher's glove. I had arrived at the ballfield that day only to quickly realize that I was the only umpire in the standard two-umpire crew. The second man never showed. I would have to take the plate and, because I was alone, virtually all of the heat. And the heat arrived like a blast of southern sun skirting free from a dark cloud. I can't even remember the call I made that precipitated what would happen next.

I heard a father's voice shouting at me from the left field fence. This isn't Yankee Stadium, so it wasn't like he was 40 or 50 yards away from me. I looked quickly to my left just in time to see this father clearing the top of the fence and jogging toward me at home plate. I ripped off my padded metal mask, gripping the bottom bar and turning the metal side inward—in case I had to swing it from my right side up to his left cheek. Oddly enough, the short trip to home plate seemed to fill him with a deference he didn't have when he hopped the fence. He *almost* calmly spoke his piece and turned to leave, finally finding the ushering arm of the manager of his son's team. I simply wasn't ready for the whole encounter. In all my training to become an umpire, I had never practiced for *that*.

Here we are, at the start of another seemingly endless season of baseball. The Dodgers are dodging. The Brewers are brewing. The Mets are doing whatever Mets do. The whole thing makes me think of a fascinating study about practicing baseball. I know many of the readers of our little blog are advocacy coaches and advocacy program directors. I think this month's study will rattle us like an angry father coming over our fence. Frankly, I think it should.

The Cal Poly baseball team agreed to participate in a scientific experiment.<sup>1</sup> Perhaps one could guess that a team from that school might be extra willing to be test subjects for the sake of science, but I digress. The entire team engaged in extra batting-practice sessions twice per week for six weeks. During these sessions, half of the team took batting practice in the same way they'd always done their batting practices. Each player practiced hitting forty-five balls which were evenly divided into three groups of pitches. Fifteen fastballs. Fifteen curveballs. And, finally, fifteen changeups.<sup>2</sup> “[A]s the batter saw more of that type [of pitch], he got gratifyingly better at anticipating the balls, timing his swings, and connecting. Learning seemed easy.”<sup>3</sup>

The other half of the team practiced in a somewhat similar way. Each of these players also saw forty-five pitches in a practice session. These forty-five pitches were also divided into three sets of fifteen pitches. However, the batter wasn't told which of the three kinds of pitches he would see on any given pitch. Everything was random. “At the end of the forty-five swings, he was still struggling somewhat to connect with the ball. These players didn't seem to be developing the proficiency their teammates were showing.”

The first kind of practice is called “massed” practice.<sup>4</sup> It's the kind of practice you and I did for years and years prepping for exams. Find the exam topic. Dive into only that topic for hours at a time. Eyes on the ball.

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<sup>1</sup> Peter C. Brown et al., *Make It Stick* 80 (2014).

<sup>2</sup> *Id.*

<sup>3</sup> *Id.*

<sup>4</sup> *Id.*

The second, more random kind of practice is said to be “interleaved” as it brings in work on other, different skills.<sup>5</sup> It’s varied and any repetitions you have, from one fastball to the next, for instance, are spaced apart in time.<sup>6</sup> After the six weeks were complete, the hitters had all improved. Extra practice will do that for you. However, “Those who had practiced on the randomly interspersed pitches now displayed *markedly* better hitting relative to those who had practiced on one type of pitch thrown over and over.”<sup>7</sup> [Emphasis added.]

The authors of the book writing about this study relay several other studies that reveal the same thing about learning. The lesson from those studies is not one most learners want to hear: We learn better when we *don’t* mass-practice. We learn better when we leave a subject for a time, pepper in other subjects, and randomly circle back to the first subject. It makes the process of learning difficult. In so doing, however, our brains have to work harder to remember what we learned before—and the difficulty of recalling the past lessons actually helps those lessons take hold in long-term memory.<sup>8</sup> When we focus heavily on one subject and mass-practice the heck out of it, we see quick improvements, but they are more ephemeral and vanish quickly. The authors of the book have a name for those quick improvements, and we as teachers and coaches aren’t going to like it. They call them “illusions of mastery.”<sup>9</sup>

Now here we are, facing down a curveball of our own. You’re probably thinking of your course syllabi right now. It’s filled with mass practice. You never return to a subject once you’ve covered it. You’re thinking of your moot or mock trial practices as well. They’re quite a bit “massed” too, aren’t they? I admit that every time I think of these studies, and I think of the syllabi for a few of the classes I teach, I become as unsure of myself as that boy’s father finally arriving at home plate. Just a minute earlier, I was so sure of myself and sure of the ways I have (*we* have) always done things. I’m a slow convert, however. I haven’t un-massed all my masses but I’m mindful that I need to. What will you do with your classes and batting practices?

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<sup>5</sup> *Id.* at 49.

<sup>6</sup> *See Id.* at 48 for a discussion on the value of spaced practice. Like you might guess so far, it’s practicing the same skill in an un-massed way, intentionally leaving gaps of time between work on a skill or subject.

<sup>7</sup> *Id.* at 81.

<sup>8</sup> *Id.* at 100.

<sup>9</sup> *Id.* at 81.