

Practice, Repetition

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By John Leonard

Ever since **Dr. Anders Ericsson** spoke at the ASCA World Clinic in September, 2009, I've been obsessing about this idea of **10,000 hours of practice** in order to create an accomplished practitioner of . . . "anything."

I've spent a few hours in Tallahassee discussing the concept of practice with Dr. Ericsson and followed up at the CSCAA convention in May. I am trying to find out if what we do in swimming is really what Ericsson considers "purposeful practice".

And I've come to the conclusion that it is not. (but more about that later.)

One of the thought experiments I did was write down, year by year, what I thought the "best" practice schedule would be for a child who started at age 7 in the sport of swimming, and graduated from high school, after a "dedicated" swimming career, at age 18. And magically, I came out with something like 9,400 plus hours....within shooting distance of Dr. Ericsson's 10,000 hours. Close enough for thought experiment work. Gives some legitimacy to what we do as coaches, I thought.

But then, reading more of Ericsson's scientific papers, the criteria for **meaningful practice**, which includes **close and constant short feedback from coaches and intense, persistent problem solving by children**, just don't match up with the modern American swim practice once you get beyond the 8 year old level and you have to a lucky 8 year old to get that much attention. In fact, I speculated that less than 10 minutes of most young athletes practice came out to be what Ericsson would consider to qualify for meaningful practice. Compared with a child learning music, we run a playground. An hour a week, total and combined, might qualify.

Yet we turn out quality athletes, and have done so for many decades. We must be doing something right.

More thoughts . . . what Ericsson defines as "practice" could also be better (more closely) defined as "skill acquisition". **Skill acquisition is only one part of becoming an elite swimmer. There is also a lot of very hard training that takes those skill-trained muscles and whips them into racing condition and then fine tunes them for world class results.** In



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contrast, most of music “practice” appears to be skill acquisition, rather than “training.” So perhaps the definitions need to be more closely and carefully created . . . especially of the word “practice.”

Which leaves the question for all of us, what if we as coaches conformed more closely to Ericsson’s definition of meaningful practice in the early years of an athletes career? Would acquisition come faster, be more complete and deep-rooted, and become, over time . . . more . . . “automatic?” Or . . . would it just prove to not matter that much? (and, of course, could the Average American Swimming Parent tolerate watching things that don’t necessarily help Johnny and Susan “win now?”)

Just exactly what is that ideal practice session for a 7-8-9 year old? Can we learn a better way to “practice” that will be more effective?

“When the student is ready, the teacher appears,” so they say...

So I get an email from Eddie Reese telling me that I ought to be reading Daniel Coyle’s new book, “The Talent Code.” I always read what Eddie tells me to read, so off to Barnes and Noble I go.

And Coyle’s book is about the process by which we learn how to do cool tricks like swim down the pool, bounce a golf ball on our golf club and then whack it 200 yards down the fairway without letting it hit the ground and various other amazing physical feats, like walking. He talks about a “certain kind of practice . . . fueled by motivation. . .” It’s a process he calls “fire neurons, fix it, repeat.”

In the “repeat” is the magic. When “repeating” enough times, we physically (chemically) change our bodies by laying down a fatty sheath called a “myelin sheath” over the neurons that we have a nerve impulse travel over. I’ve heard of a myelin sheath since college and never “got it.”

Coyle says that scientists (he’s not one, he’s a writer) say that the myelin

sheath acts as “insulation” for that neuron, so the electrical impulse is not “slowed down” or “interfered with” by random other flashes of electricity in our system, say, when we see our neighbor in her new bikini watching us bouncing that golf ball on a stick. (and saying “what is that moron DOING?” . . . but I digress.)

The Myelin helps the nervous pathway fire more precisely and travel faster and smoother. Hence our freestyle begins to look more coordinated and smoothed out.

And, most coolly, the every time we do an action, we provide the stimulus for more myelin to be laid down . . . reinforcing what we doing again and again.

Wait a minute. Didn’t the old guys say that practice makes habit . . . only perfect practice makes perfect performance? Right again. Here’s the scientific explanation why allowing someone to do something incorrectly in practice, will pretty much guarantee that they’ll do it the same screwed up way in competition. And this makes it even more critical that when child are acquiring skills, that they get it right the first time, every time with endless repetitions of perfectly executed movements . . . before they ever attempt a “race.”

Coyle paints the picture of the Russian Tennis “factories” that turn out seemingly endless numbers of teenage tennis sensations, practicing for up to four years with just the racquet, executing perfect strokes of all sorts, before they ever allow them to actually hit a tennis ball. Groove the stroke, groove the results. (imagine the average American swimming parent watching their child do stroke drills for four years with no racing . . . wow, what a thought.)

So what should practice look like for those young skill acquiring athletes in swimming?

- 1) Short distance repeats. Start with 10-12 yard swims. (25 yards can be a survival test for some young would-be swimmers.)

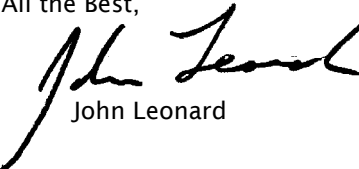
- 2) Short instruction verbally. Lots of visuals. Demonstrations of doing it correctly.
- 3) Huge amounts of repetitions. Do it CORRECTLY . keep doing it correctly. Lay down that myelin. If it’s done wrong, correct in short, and repeat and get it right.
- 4) Huge quantity of quality Feedback. Not speaking in paragraphs, speaking instead in phrases. Three second communications done over and over after each repetition. Use evocative words that elicit a response.
- 5) Listen/observe the Responses. Devise change based on them. Act.
- 6) Praise the effort, but praise correct final movement results the most.
- 7) It takes repetition to build the myelin in 10,000 hours of purposeful practice.

You earn your layers of myelin with repetitions. You fuel your motivation for doing the repetitions with expectations of success. Those athletes who expect to stay in the sport for life are much better at “committing” to the process. The more you care, the more intensely the neurons fire and the more myelin in laid down to protect the nerve pathway.

Great performance comes from great practice and great practice has laid down multiple layers of Myelin to allow the body to operate at peak efficiency.

Repetitions of quality skills in rapid fashion, with high levels of numbers of quality efforts. Lay down myelin well for 10,000 hours and you can do your best effort on demand, just like the great athletes.

All the Best,


John Leonard