THE LEARNING COACH

NO MORE PLATEAUS:

Practical Ways To Play Better NOW!

The strong survive, the smart thrive. How we learn matters, talent does not.





The way practicing works is really different than what most of us think. The few that figure out the really weird ways it works seem 'gifted' and 'talented,' but the truth is anyone can learn to practice like a pro. Here's how to get started.

HOW GOOD CAN WE BE?

If we take a close look at the notion of talent, we'll find there is not much there. It really seems to boil down to where discipline meets desire meets dedication meets determination. I highly recommend the book Talent is Overrated by Geoff Colvin for a scholarly and entertaining overview of this phenomenon.

SO THEN, WHAT SHOULD I DO?

Interestingly, the first answer to that has little to do with practicing scales, etudes, concerti, whatever; it has to do with self-control. How are we going to practice for however many minutes a day if we can't even get started?

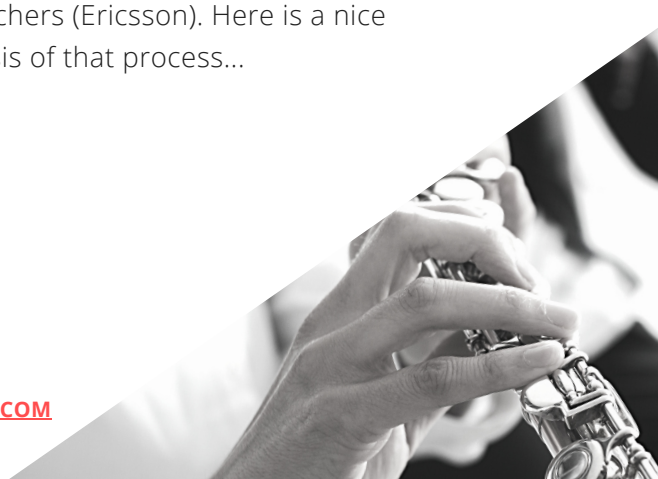
If we need to establish some regular practice, we should begin building positive habits little by little. The book The Power of Habit by Charles Duhigg can be helpful here. The good news is we'll only need about 10 minutes a day for 5 days to make some pretty amazing improvements.

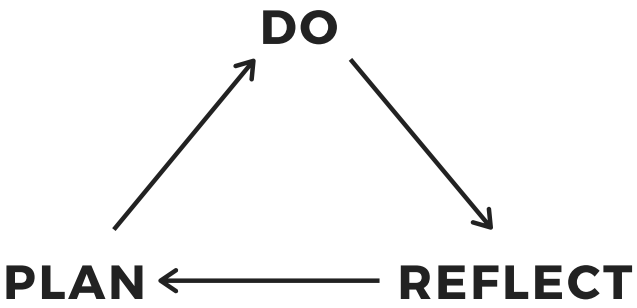
OK, WHEN I DO IT, WHAT SHOULD I DO?

Here is where the magic happens, or not. The most important element that determines how well we will perform is not 'talent'; it's how we go about our practice time once we get started. Most of us are not taught how to practice, and we end up with a 'play and pray' strategy. We have no plan and randomly try things we hope will work. If you're like me, you've found these things usually don't work well enough.

However much we may be practicing, and however much practice we build, how we do it is the key difference between us and that "really talented person" we know who just seems to perform everything so well and so effortlessly.

The process of learning something, which has been around since the dawn of humanity, has been given the name "deliberate practice" by cognitive researchers (Ericsson). Here is a nice synopsis of that process...





In the process of learning something new, repetition is essential. And an essential part of repetition is time for thought between each attempt, to, at the very least, ensure that it was done correctly. If the repetition (do) was not correct (reflect), then make a (plan), any plan, to correct it.

If it makes things worse, then alter the plan; if it makes things better, then refine it until we can play what we are trying to learn slowly and accurately. *It does not matter how slow, only how accurate the movements are.*

Try it with something you're learning. Go through each step thoughtfully and you'll almost surely start to notice things you never did before. Now you know what to work on for your next repetition. No more 'play and pray'; now it's 'play and plan.'

Don't worry if it is hard to come up with things in the reflect stage at first. This is a new skill and it may need to be developed. In that case, work on thinking about what you're doing *while* you're doing the repetition so that you have something to think about when you reflect. If thinking like this while playing causes difficulty, that is just the learning process. Just keep going, you'll see.

If we do this over time, we will improve; if we do not, we will not get very good. The choice is ours. Just don't be surprised at the results either way.

Let's be clear; this is like all of learning – simple, but not easy. Focus, concentration, whatever we may call it is built like a muscle: a little bit at a time.

If you have not been practicing this way, do not be surprised if you can only do 10 minutes or less without having to take a brain break whereas before, doing it the other way, you could do more.

This is mental fatigue and research shows that a recovery period is necessary for learning to continue.

Don't worry; those minutes are far better than the old way you were doing them. (Ask your teacher which she would rather have you do!) Those minutes will grow over time as you exercise this technique.

"This information is pure gold. I've practiced my guitar with it for several days, and I am already nailing songs I'd been working on for months. I am so grateful, you have no idea."

Lynne Goodman, Guitar

THAT SEEMS WEIRD. HOW DOES IT WORK?

Our motor skills are physically represented by neural communication networks that we build in our brain. We build these networks by applying deliberate practice. Repeat thoughtfully and slowly, trying to correct every repetition, until your movements are accurate at a slow tempo.

That is why it is so crucial to do repetitions in the learning phase slowly and accurately. We are building neural networks (specific brain cells that 'talk' to each other to produce our movements). Each time we do something, it initiates a process called myelination, which strengthens and speeds neural communications.

Doing something wrong over and over in the learning phase, even slightly, strengthens the neural representation for that mistake. Do it right and build/activate the right neural network.

Speed does not come from trying to play fast, but from first building accurate and efficient neural networks in the learning phase.

WHY IS IT SO UNCOMFORTABLE?

Researchers have found that the sustained mental focus required for deliberate practice produces feelings of discomfort and aversion; it is mentally hard to do. This can be expressed as feelings of frustration or mental confusion. These researchers refer to this as effort constraint – something that gets in the way of our good effort.

The only solution is a period of recovery – taking a break – when our brain becomes too tired to concentrate. Practicing through the fatigue does not help learning, and some believe it hurts it.

In other words,

> *...disregard of the effort constraint on deliberate practice leads to injury and even failure. In the short term, optimal deliberate practice maintains equilibrium between effort and recovery. In the long term, it negotiates the effort constraint by slow, regular increases in amounts of practice that allow for adaptation to increased demands.*

(Ericsson 371)

"It works so well it is almost like Voodoo."

Thulane Akinjide-Obonyo, saxophone teacher, Zimbabwe

Continued...

HEY, IT DOES MAKE ME BETTER, BUT THEN THINGS PLATEAU AND THE REPETITIONS STOP WORKING. SEE, I TOLD YOU I DON'T HAVE TALENT!

What you are experiencing has been described as the power law of practice (Newell, Allen, and Rosenbloom, 1981).

They use this to describe the documented drop-off in improvement as repetitions increase. Each repetition of something produces less benefit than the one before. This means the value of doing the same thing over and over will be high at first, but quickly become nearly ineffective.

So, you and everyone else suffer from this. The difference between what we think is talent and what really makes for excellent performance, in this case, is being able to reset the power law to make the same initial gains again and again.

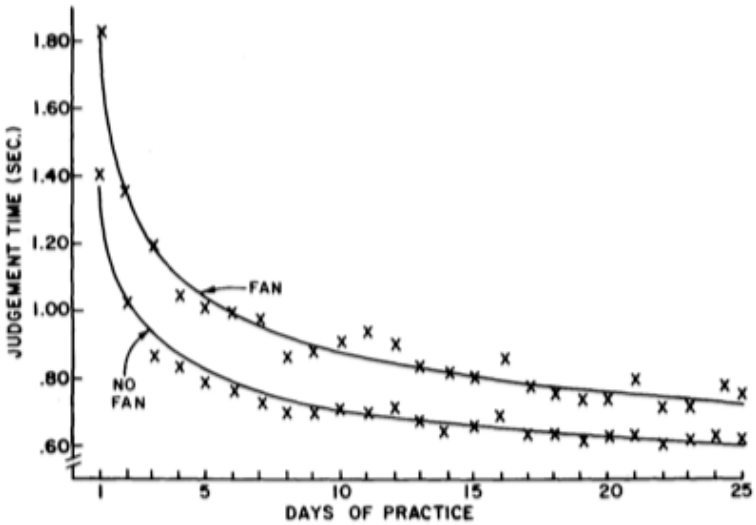


Figure 1. Practice effects on reaction time and interference in Experiment 1.

I CAN'T FIX THAT, CAN I?

Yes, you can.

Further research found that you can reset the power law by changing things up (Delaney, et al.).
Research has shown that learning occurs in the area of problem solving. This is not fun and requires creating a state of confusion, solution, confusion, solution. That is what learning is. I call it the burn of learning or the 'Blearn'.

Turns out a couple of researchers at UCLA noticed the same thing and gave it a real name: desirable difficulty (Bjork and Bjork). Be willing to make mistakes, figure it out, and make more mistakes. We teachers have a word for that – *learning*.

One way to make this happen is to apply *contextual interference*. This refers to altering the context in which we practice something we are trying to improve. We do it in order to make it *more* difficult and feel confusion (yep, that is the goal). This is *desirable difficulty*. Each time we do this, we reset the power law so that as we work our way through the confusion we get the initial improvements all over again, and the improvements will be astonishing.

"FEEL THE BLEARN!"

Repetitions at the beginning produce great benefit, then drop off significantly and nearly level off (Pirolli and Anderson, 139).

FINE THEN, WHAT SHOULD I DO, MR. SMARTY PANTS?

Well, my pants don't feel any smarter. Let's get to work.

What follows is a step-by-step plan, 10 minutes a day for 5 days, to introduce some contextual interference into our practice. This will create desirable difficulty. As we do this, things will get worse before they, almost magically, get much better. Just keep working in the way described because this difficulty is desired. If you'd like to see players on several different instruments using this to improve in real time, check out my YouTube channel – *Learn Like a Genius*.

CLICK TO PLAY

Go to: ***ggoodhart.com/LLAG***

If this works, and it will, then a whole new world will open up to you. If it does not, then you've wasted, at most, 50 minutes trying to get better. There really is no reason not to try it.

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Gregg Goodhart

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FIVE DAY PLAN

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The goal here is to create desirable difficulty. If you have already tried dotted rhythms, played jazz, or just have really good rhythmic knowledge, this might not be hard for you. Usually the reverse dot trips people up, but sometimes not. If you find the dotted rhythms easy, then go to the In Case of No Difficulty, Break Glass section for an alternative.

DAY 1

1. Pick something that you've already been working to learn that you just can't seem to perform the way you would like no matter what you do.
2. Learn to play it with even rhythms as if all notes are quarters. Each note should be the same duration as the others, no rhythm. This will likely be the first moment of desirable difficulty but should not be too hard. Using the deliberate practice model, do slow repetitions, stopping and starting as necessary while playing to work out any confusion. Reflect between each repetition. Get to a point where you can play it AS SLOWLY AS NECESSARY to play it without stopping. *It does not matter how slow you go,* as you are creating a neural network, so make sure it is accurate.
3. When you can play it through pretty accurately, no matter how slowly, then repeat that 5 times.
4. Begin to learn to play it with a dotted rhythm (see page 8). You do not need to get this perfect, just spend some time trying to learn it. You will experience some desirable difficulty. This is good. Slowly work through it.
5. No need to get frustrated.

DAY 2

1. Do FIVE repetitions of the passage with no rhythm (all notes of the same duration like you learned yesterday) as slowly as necessary to be accurate.
2. During each repetition, notice any imperfections you can correct or any improvements you can make for the next repetition. *No detail is too small.* Don't worry if you don't perfect these things, just keep noticing and trying improvements.
3. Review/finish learning your dotted rhythms. This may require some re-learning. That's perfectly normal, and you'll be able to get it together much more quickly this time.
4. Once learned, do 5 dotted repetitions even if they are not perfect.

DAY 3

1. 2 reps with even rhythm, 2 reps with dots. If you need to review dotted rhythms to get two correct reps, then no problem.
2. Begin learning reverse dotted rhythms (also called a Scotch Snap).
3. Warning: Reverse dots are harder than dots and may be very frustrating. How grateful we are to have this device to get us into that intense state of desirable difficulty! Feel the Blearn!
4. You may not finish perfecting this today; just do your best. It will be there for you tomorrow when you get back to it.

DAY 4

1. 2 reps with even rhythm, 2 reps with dots.
2. Continue learning reverse dots. If you keep *Feeling the Blearn*, you should be able to get this down today.

DAY 5

1. 2 reps each of regular, dot and reverse.
2. Play the section two or more times as it is supposed to be played, with the right rhythm. Do this slowly enough to play it correctly and do it with a metronome – VERY SLOWLY for total control. Note the metronome number, this is your 'safe' speed.
3. Repeat the section over and over, each time increasing the metronome number. As it starts to get significantly faster, notice how it sounds and how it feels to play it.
4. Enjoy your awesomeness, and start applying this to everything you are learning. This is just the beginning.
5. We can make this much progress every practice. Get in touch for some Practice Coaching and we'll work on it.

Pro tip – if you've got a metronome that goes up one number at a time, i.e. 100-101, don't increase by that small amount. Do it by fives, i.e. 100-105-110

HOW TO LEARN TO PLAY A DOTTED RHYTHM EVEN IF YOU DON'T READ MUSIC:

If you, or your students, have trouble understanding a dotted rhythm, or can't read them, try the following method.

Slowly count 4. For a dotted rhythm play on 1 and 4, and for reverse 1 and 2. Soon you'll be able to feel it. At that point, referring to dotted as "long-short" and reverse as "short-long" can help understanding as you move away from the learning scaffolding of counting.

Play notes on the **bold** numbers and pause on the others.

Dot: 1 2 3 **4 / 1** 2 3 **4**

Reverse: 1 2 3 4 **/ 1 2** 3 4

IN CASE OF NO DIFFICULTY, BREAK GLASS

So, you've broken the emergency glass because dotted rhythms did not cause desirable difficulty. Here is something that should do it for you.

NOTE GROUPING IN THREES

Play the first three notes and hold the final note for at least twice as long as the previous note. Hold it as long as you like. Continue this pattern throughout the passage. So you'll play notes 1, 2, 3 PAUSE, then 4, 5, 6 PAUSE and continue that until you are done. It is very possible you will lose count, so play very close attention to only playing three notes at a time. After that, play the first note PAUSE and then continue with groups of three. 2, 3, 4 PAUSE, 5, 6, 7 PAUSE. Then start with two notes and a pause, then continue. That should do it for you.