

Practising shouldn't feel boring. With techniques drawn from sport psychology you can energise your routine and retain more of what you learn, says musician and performance psychology expert CHRISTINE CARTER

ATHLETIC ADVANTAGE

I STARTED FIGURE SKATING AT THE AGE OF TEN. After a year, the skaters in my group took part in weekly sessions away from the rink, where we would work with coaches on physical conditioning and mental skills training. I was not a good figure skater when this programme began, but the coaches knew the importance of the mental side of the sport, even for the youngest of skaters. This wasn't groundbreaking, given the immense body of sport psychology literature. For decades, coaches had been using techniques honed by psychologists to help their athletes learn faster and perform better.

When I think back to my first music lessons, no such attention was paid to the psychology of learning or performing music. In fact, throughout my musical education, I never received the structured performance psychology coaching readily available in sport. As I began working in various psychology labs, however, I realised that the absence of performance psychology in the music room was not for lack of an appropriate application: similarities between music and other high-performance fields abound. The more I studied, the more I understood just how much valuable information musicians were missing. My subsequent research in psychology has been an attempt to fill this gap. The following techniques are ways we can start using performance psychology ideas in our practice.

BEYOND REPETITION – HOW TO AVOID THE HABITUATION EFFECT IN THE PRACTICE ROOM

The most frequent complaint I hear about practising is that it is boring. This is not surprising given that the most common practice technique is repetition. We are trained to do tasks over and over again until they are consistently right. I have often come across the advice: 'Do it ten times perfectly before you move on. If you make a mistake, start again.' On the surface, this seems like a good plan. After all, we want to be able to perform passages accurately and reliably, and isn't it logical that repetition will get us there? But the very fact that this approach is boring is a sign that we are not optimising our potential for learning. If we are bored, our mind is not actively engaged, and mental processing slows down. This isn't our fault: we are hardwired this way.

If you repeatedly show an infant a specific object, they will gradually spend less and less time looking at it. This reduction in processing with repeated presentations of a stimulus is called habituation. This is not to be confused with fatigue. Present a new object, and the same infant's attention will again peak. Adults are no different. Our brains are designed to pay attention to changing stimuli, not repeating stimuli, so it is no wonder that we get bored with straight repetition in the practice room. It is time to interpret this boredom as a cry for a new approach, rather than evidence that we are lazy or bad at staying focused.

On a large scale, we can move away from the repetition model by restructuring our practice time. In order to adopt a new structure, however, it is important first to identify the existing structure. In my workshops, I often give the example of a swimmer who needs to work on three strokes in a one-hour time period. If I ask my participants how this hour should be divided (given that the swimmer needs to spend an equal amount of time on each stroke), the most logical answer usually follows: spend 20 minutes on stroke A, then 20 minutes on stroke B, and finally 20 minutes on stroke C. In sport psychology this is called a

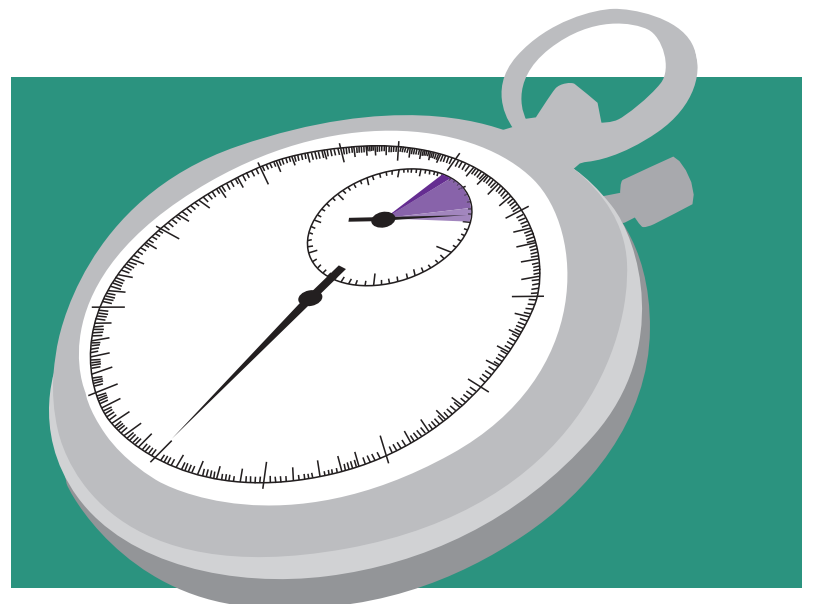
blocked practice schedule. Musicians are very familiar with this schedule, as it is what many of us do when we have multiple excerpts or pieces to learn. We work on one task from start to finish and then move on to the next task until we have completed our practice on all tasks for the day.

ALTHOUGH THE BLOCKED PRACTICE schedule is intuitive and leads to initial performance gains in the practice room, it is not the most efficient strategy for long-term learning. Many musicians have experienced the frustration of putting in a long day of practice and returning the next day only to find that the gains did not stick. Study after study has shown that a more effective technique for long-term retention is the random practice schedule. This takes the longer chunks of time and breaks them up into smaller recurring chunks. Let's look again at our swimming example. Another way to divide the hour would be to have the swimmer spend five minutes on each of the three strokes, returning to each of the strokes four times

Pick a few passages you would like to work on and alternate between them

(ABC, ABC, ABC, ABC). The swimmer could also spend two minutes on each of the three strokes, returning to each of the strokes ten times. The net result of these alternatives is still 20 minutes spent practising each stroke, but with far more variety. While a true random order might look more like ACB, CAB, BAC, CBA, a repeating sequence is often used in sport to prevent having the same task occur twice in succession, which would inadvertently create a longer block.

So how can the random practice schedule be applied in the practice room? Rather than spending long, uninterrupted periods of time on each excerpt or section of a piece, pick a few passages you would like to work on and alternate between them. If you want to spend a total of 20 minutes on a particular excerpt, practise in shorter segments, continually returning to that excerpt ▶



until you have achieved your 20-minute goal. Experiment with lengths of time. If you are practising very short excerpts, you may be able to switch between them at a faster pace than would be required for longer sections. You can use an alarm clock to time intervals, or take a more freestyle approach.

This practice schedule can also be applied to technique. Many musicians complete all of their scales and technical exercises at the beginning of their practice sessions, and often in the same order (for example, long tones, scales, 3rds, arpeggios). You can switch between these different exercises and also intersperse them with your work on excerpts and repertoire. An example of an hour-long practice session might look something like this:

Length	Exercise/Passage
2 minutes	Long tone, scale, long tone, scale
6 minutes	Concerto exposition
2 minutes	3rds, arpeggio, 3rds, arpeggio
5 minutes	Excerpt 1
5 minutes	Excerpt 2

Repeat this 20-minute sequence twice to fill one hour

The permutations are endless and the exact division of time is not important. What is crucial is that you are staying on your toes by varying the material. This is more challenging, of course, as you are repeatedly forced to restart different pieces, retrieving the mental script for the task at hand. But it is precisely this challenge that produces such valuable outcomes. In addition to increases in long-term learning, your mind stays more engaged and time seems to fly by much faster. Because of the short individual practice segments, you are also forced to be more goal-oriented. Although all time is finite, we are better at recognising the finite nature of 3 minutes, as compared with 60 minutes. When we know we only have 3 minutes to accomplish something, we are more likely to make good use of those minutes.

Although many studies have explored random practice schedules in a wide variety of fields, few have looked at this variable in music learning. I am currently running a study

on musician practice schedules at the University of Western Ontario's Brain and Mind Institute, and while this study is not yet complete, a preliminary review of participant interviews shows that students are far more goal-oriented in the random schedule. There are occasions, however, when a more blocked practice schedule is helpful. When preparing for a concert or audition, for example, full run-throughs of material become critical in the weeks leading up to 'game day'. You can still use random practice schedules to work out any problematic passages, but these can be balanced with mock run-throughs.

BAR BY BAR – THE RANDOM PRACTICE SCHEDULE ON A MICRO LEVEL

Within the resulting smaller time periods of the random schedule, you can increase variation even more. When you are working within a five-minute time slot on a challenging excerpt, for example, novel permutations of the same passage can further inhibit the habituation effect and promote long-term learning. Here are some possible variations:

Rhythmic variations

If you are working on a challenging running-note passage, play through the passage in as many rhythmic variations as possible. **Variations 1.1 to 3.3** (below, and on page 46) show some of the variations possible with a C major scale.

Grouping variations

You can also practise running-note passages by changing the beat groupings. For example, semiquavers (♪) grouped in four can be practised as triplets or quintuplets (**variations 4 and 5** on page 46). First place the beat on the first note of the triplet or quintuplet, then shift it to the second note, and so on. Similarly, you can practise triplet passages in groups of four or quintuplets.

Off-beat variations

Another type of variation involves putting the metronome on the off-beats. This forces us to subdivide, solidifying our inner ▶

Examples of rhythmic variations on a C major scale

VARIATION 1.1

VARIATION 1.2

VARIATION 2.1

VARIATION 2.2

PRACTICE TECHNIQUES

VARIATION 2.3



VARIATION 2.4



VARIATION 3.1



VARIATION 3.2



VARIATION 3.3



Examples of grouping variations on a C major scale

VARIATION 4



VARIATION 5



sense of pulse. If you are practising triplets, put the metronome on different subdivisions within the triplet. This technique is also effective at increasing direction and line.

It is possible to superimpose these micro-variations on the random practice schedule. If you are working on challenging passages in two different pieces, you can go through one rhythmic variation for the first piece, then one rhythmic variation for the second piece, and then back to the first piece for a second rhythmic variation, and so on.

PERFORMANCE FEEDBACK – YOUR CHEAP, UNLIMITED TEACHER

Coaches have long known the secret of objective performance feedback. By using video cameras, they can show their athletes exactly what they are doing. Once athletes are aware of a problem, they can immediately take steps to remedy it. As a (mediocre) figure skater, I remember numerous instances where my coaches told me I was doing something strange with an arm or leg, but I did not have the 'Aha!' moment until I saw it for myself on the video camera.

When we know we only have three minutes to accomplish something, we are more likely to make good use of those minutes

We have the same tool at our fingertips in music. Using a recording device can immediately show us what we need to focus on, especially during the majority of weekly hours when we do not have the luxury of expert coaching. Even the expert coaches use this technique: so many of the great players I have interviewed depend on recording as a vital form of self-assessment. If recording is effective and cheap, why isn't everyone doing it?

When I ask participants in my workshops to raise their hands if they think recording themselves would help them improve, almost everyone raises their hands. But when I ask who actually ▶

PRACTICE TECHNIQUES

records themselves on a regular basis, very few hands go up. The discrepancy between knowledge and action comes from the discomfort of having to face ourselves, weaknesses and all. A perceptual shift is required. We cannot fix what we are not aware of. Uncovering mistakes and problems in a practice recording can be exciting – this is the distance we have to improve.

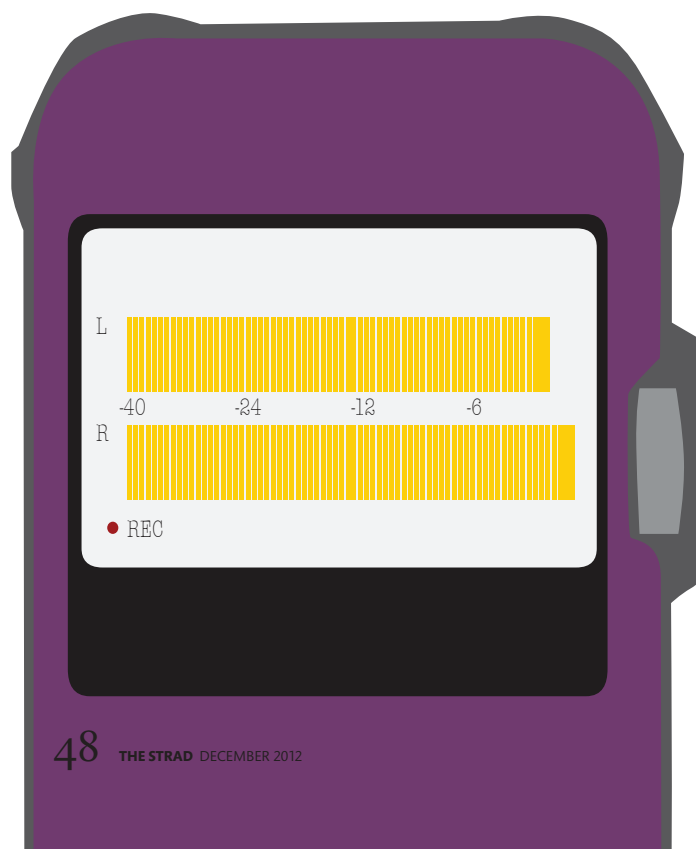
There are two main ways to use recording in the practice room. The first is to record a short passage, listen, and record again, so that you have an immediate feedback loop. I recommend this form of recording as often as possible. Working in this way keeps the mind focused by providing yet another form of practice variation, while simultaneously building in breaks from physical exertion. You will be amazed at how quickly you can fix problems. Don't wait for the passage to be 'good enough'. Start now. This process will tell you exactly what you need to know to make the passage good enough. The second approach is to record full run-throughs of excerpts or pieces and listen at the end of the practice session or day. I use this method in the weeks leading up to a major performance or audition. I play through the repertoire for the recorder, as I would on stage, and listen at home before going to sleep. I find it helpful to make notes on anything I would like to address the next day.

Throughout this process, it is important to be kind to yourself. Approach your own recordings as you would the recordings of a student – with compassion and a focus on what is going well, in addition to what needs to be tweaked.

MINDSET – HOW TO PRIME YOURSELF FOR LEARNING BEFORE YOU EVEN BEGIN

Before we even touch our instruments, our mindset affects how much we are going to learn in the ensuing practice session. We often think that we will be happy once we accomplish a given task. However, research in the burgeoning field of positive psychology is showing the opposite order of events: happiness

▼ Using a recording device can be helpful



seems to be an important precursor to success. In his 2010 book *The Happiness Advantage*, psychologist Shawn Achor explains:

Positive emotions flood our brains with dopamine and serotonin, chemicals that not only make us feel good, but dial up the learning centres of our brains to higher levels. They help us organise new information, keep that information in the brain longer, and retrieve it faster later on. And they enable us to make and sustain more neural connections, which allows us to think more quickly and creatively, become more skilled at complex analysis and problem solving, and see and invent new ways of doing things.

He cites some tangible examples of the power of this effect:

Doctors put in a positive mood before making a diagnosis show almost three times more intelligence and creativity than doctors in a neutral state, and they make accurate diagnoses 19 per cent faster. Optimistic salespeople outsell their pessimistic counterparts by 56 per cent. Students primed to feel happy before taking math achievement tests far outperform their neutral peers.

Given the significance of this research, it is important to address how we are feeling before we enter the practice room. The various stressors associated with being a performer – perfectionism, deadlines and competition to name a few – can easily put a damper on mood. And if we take this less-than-ideal state of mind for granted, we are hampering our learning without even realising it. It is easy to skip over this step. We certainly have enough to do in our busy lives. But taking a few moments to enter a positive headspace before practising will deliver rewards far greater than the minute time investment. ■

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