

# Try This Now

How to start learning and teaching the ways the brain learns music best  
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## Spacing

### The most important things to know

- **Performance is the act of using working memory (in the moment)** to recall information in long-term memory (what you practiced/learned). Many of us experience working very hard on certain things then finding when we perform live, or in a lesson, that these things do not go nearly as well as they did in practice.
- **Once we get something learned we then have to be able to recall it immediately in real time in performance.** In practice we may have repped something many times, or worked on it for a period of time. Our previous attempts are fresh in our working memory to help guide our future attempts. In live performance there is a lot of time, and sometimes other playing, in between when we played those sections and when we need to *retrieve* them. We are trying to retrieve the information from long-term memory for which there is not a recent cue while in a unique, uncomfortable environment.
- **To practice this use spacing.** Besides making the retrieval during performance very strong this also adds another layer of technical improvement to the section in question. The idea is to put spaces of forgetting in between repetitions to gradually strengthen retrieval.
- **It literally takes no more than a total of a few minutes** over several days to try it.
- **This is a type of *retrieval practice*** which includes spacing, interleaving, random practice and more.

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1. Choose a section of music that has been isolated and practiced to the point it can be played accurately *very slowly*. It needs to be more than a few notes, but no more than several measures. We are creating the neural network in the brain that will represent this skill so make sure the movements are as accurate as possible. Speed will increase by doing this exercise, so don't worry about tempo right now. SLOW AND ACCURATE.
2. Play the section once, slowly enough to expect total control. If you make a mistake do not fix it. Just notice it for next time.
  - It may be very frustrating to leave the mistakes and move on, but this is crucial. We already have the information stored in long term memory. We know that because we've already played it slowly and accurately. Now we just need to strengthen retrieving that from LTM. Research shows that each time we do that and fail it strengthens future retrievals, something called the *testing effect*. Stay with it, and don't do any more than one rep at a time.
3. Start a timer for 5 minutes and when it goes off do step 2 again.
4. Repeat step 3 until the we finish practicing.
5. Do this for several days, and don't play the section at any other time than the spaced retrievals.
6. When the 5 minute repetitions become easy and sound good increase the interval to 10 minutes. This is a version of something called the Leitner system.
  - Understand that, just as sometimes happens whenever we perform the section live, it will not be as good as when we were isolating it. Don't get the impression the worse performance indicates that we are not learning. The struggle of retrieval *is* the learning. As we strengthen the retrieval process over a day or days it will not only improve, but it will improve when performed as part of the larger piece of music as well.
7. On the fourth day play the whole piece or section. If you don't know that much of the music yet play the section with a metronome and gradually increase speed to see how fast and accurately you can play it now (It should feel easier as well).

### **Spacing and Random Practice**

*Try this variation using another type of retrieval practice, random practice, along with spacing*

In the week or so leading up to a big performance do random spacing on the beginnings of all pieces being played. Set a timer and every 10 minutes go to the start of a random piece and play it once, slowly enough to be in control. Then continue with the practice/rehearsal. When the timer goes off again pick another random beginning and so on. Anxiety, which is the anticipation of fear, is usually at its worst right before we begin playing. Strengthening the retrieval of beginnings will lead to consistent strong starts that feel easy to play. This makes the ensuing fear during performance less and performance more enjoyable.

We can even try doing it with the beginnings of all the major sections of a piece. It only takes a few minutes of practice total, so why not try it with at least one or two pieces?

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## More information

- **Retrieval practice** There are many creative ways to apply this to improve many things. A good starting point is the book *Make It Stick* (reference below). It is an excellent book that goes into great detail about the ways and areas in which retrieval practice can be applied. These include academics, sports and music
- **The Forgetting Lab** at UCLA is run by two pioneering researchers in this area, the husband and wife team of Robert and Elizabeth Bjork. There is a lot of information at their website.

## References

- Bjork, Robert and Elizabeth. "Bjork Learning and Forgetting Lab." (n.d.) <https://bjorklab.psych.ucla.edu/research/>. Accessed 6/7/2019.
- Brown, Peter C., McDaniel, Mark A., Roediger III, Henry L. *Make It Stick: The Science of Successful Learning*. Cambridge: The Belknap Press of Harvard University Press, 2014. Print.