

Do You Struggle With Unreliable Memory on Stage? Perhaps Your Memorization Strategy is Missing This Key Ingredient...

Description

For most of my musical life, my go-to memorization strategy was to play things over and over, and hope for the best on stage. I mean, maybe it was slightly more involved than that, but it was definitely not the most thoughtful or sophisticated memorization strategy ever.

Plus, because I wasn't very fond of practicing (never mind playing things through over and over), I tended to do as little of this as possible. So thinking back, it's kind of surprising that I didn't have as many memory slips as I probably should have.

I mean, sure, I did have a few pretty mortifying memory failures along the way (and plenty of near-memory slips, which can be almost as terrifying ?), but it wasn't generally a recurring issue.

However, as averse as I was to physical practice, I did do quite a bit of *mental* practice. Whether I was driving to lessons, sitting in the orthodontist's chair, or walking around campus, I was often going through the different pieces I was working on in my head.

Research suggests that the combination of physical and mental practice is more effective than either one by itself. So could it be that this blended approach to practice applies not only to our ability to *play* the notes on the page, but our ability to *remember* these notes as well?

A guitar study

A team of European researchers ([lorio et al., 2021](#)) recruited 26 classical guitarists from two music universities in Italy and Denmark, who were either pursuing their bachelor's or master's degree in performance.

The guitarists were divided into two groups – a **physical practice group** and a **mental practice group** – and tasked with learning the "[Sarabanda](#)" by Giovanni Zamboni Romano.

Day 1

On Day 1, the guitarists came to the lab to practice for 30 minutes. The physical practice group practiced normally for 30 minutes, while the mental practice group did 20 minutes of mental practice first, then were allowed 10 minutes of physical practice.

And what did their mental practice look like? It probably varied a little from guitarist to guitarist, but their instructions were to “[focus] on the pitch, finger movements, rhythm or any other mental [technique] they liked, but without physically playing the instrument or writing the piece.”

When their 30 minutes were up, they were tested in two ways. First, they did two recorded run-throughs to see how many notes they could recall. And then, they were given some blank staff paper, and asked to write out as much of the music as they could remember.

Days 2-6

The participants repeated their 30-min practice sessions at home for the next few days, with the physical practice group doing normal practice, and the mental practice group continuing their 20/10 split of mental and physical practice.

Day 7

And then on Day 7, the guitarists returned to the lab for one last 30-min practice session, after which they once again did two recorded run-throughs of the piece, and wrote out as much as they could remember on blank staff paper.

Day 17

Of course, it's one thing to be able to play a piece right after you've had a chance to practice it for 30 minutes with the music in front of you, and a whole other challenge to play it out of the blue, without having touched it for 10 days.

So to see how much learning really took place among each group of guitarists, they were all asked to return to the lab 10 days after their last day of practice, where they once again recorded two run-throughs of the piece, and wrote as much of the piece down on staff paper as they could remember.

So...was there any difference in memory performance between the two groups?

Memory differences

To find out, the researchers measured memory performance in two different ways.

They started by listening to the recordings, and tallying up all of the correctly played notes. Then, they tallied up all of the correctly recalled notes on the staff paper, and averaged the two tallies together to come up with a blended measure of memory performance.

Day 1

And at the end of practice on Day 1, there wasn't much of a difference between the two groups. The physical practice group recalled **39.47 notes**, while the mental practice group recalled **44.61 notes**. And yes, 44 is more than 39, but this was not a statistically significant difference.

Day 7

However, by Day 7, the learning gap began to diverge a bit. The physical practice group averaged **91.84 notes**, while the mental practice group averaged **114.89 notes**. Of course, this difference wasn't quite statistically significant either – though it was close ($p=.10$, if you were wondering).

So the next question was...what would happen if participants took a 10-day practice break from this piece? Would either group do a better job of recall than the other?

Day 17

As you can imagine, 10 days of not practicing the piece did lead to some forgetting. But this time, there was a pretty significant difference between the two groups. While the mental practice group managed to still recall an average of **100.28 notes**, the physical practice group could recall only **55.91 notes**!

If you want to dig into the numbers a little deeper, there were some interesting differences in recall between the two different types of memory tests, which you can check out in the chart below:

From Iorio, C., Brattico, E., Munk Larsen, F., Vuust, P., & Bonetti, L. (2021). The effect of mental practice on music memorization. *Psychology of Music, 50(1)*, 230–244.

So what can we take away from all of this?

Takeaways

I think the big takeaway, is that there is not just a physical (i.e. motor memory) component to memorization, but a cognitive or conceptual component as well. And that including both elements in one's memorization process could lead to much more durable, long-lasting, and reliable memory than either one alone.

So if you've struggled with memory in the past, and your approach to memorization has prioritized the physical part of memory over the mental, I hope you'll find this study really encouraging, and perhaps inspire you to include a little more mental practice into your routine.

Umm...but what should mental practice for memorization look like?

Well, aside from regular old mental practice where you imagine playing a piece away from the instrument, retired UConn psych professor Roger Chaffin has done a lot of terrific work in this area – which you can read more about [here](#) or [here](#).

And University of Arizona viola professor/“brain enthusiast” Molly Gebrian (with guest co-host, percussionist Rob Knopper) did a whole [podcast episode on the neuroscience of memory](#) a couple years back, and has a great [video series on performing from memory](#) which gets into the mental aspect of memorization too.

References

Iorio, C., Brattico, E., Munk Larsen, F., Vuust, P., & Bonetti, L. (2021). The effect of mental practice on music memorization. *Psychology of Music*, 50(1), 230–244. <https://doi.org/10.1177/0305735621995234>

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