

## Robert Duke: On the Value of Errors, and How Learning Really Works

### Description

Growing up in the pre-YouTube VHS vs Betamax days, I remember watching videos of Oistrakh or Heifetz performing the concerto that I was working on, to see what bowings or fingerings my favorite musicians were using. Or I'd listen to recordings to see what sort of musical and expressive decisions other musicians had made.

Which I enjoyed doing, and found valuable for lots of reasons.

Occasionally, with much reluctance, I'd record and listen to my own performances or run-throughs too...

Which was painful (though still valuable for lots of reasons).

### If only...

What I couldn't do however, was watch videos of my favorite musicians *practicing*. And the idea of recording myself practicing never crossed my mind.

Which is a shame, because both might have enhanced my learning more than watching only the finished and polished performances of the pieces I was working on.

Because as it's often said in sports, you play like you practice. And I'm pretty sure I could have played heaps better, if I had practiced better. (The few recordings I've seen of me practicing as a kid are orders of magnitude more painful to watch than the videos of me performing.)

### Different times!

Of course, there wasn't a lot of research readily available on how to practice better in those days. But it's a different story today, as we're lucky to have tons more research about this accessible to us nowadays. Much of which has even been done for musicians, by musicians!

So I thought it might be fun to talk to one of the researchers in this area that I've looked up to for years.

### Meet Robert Duke

Robert Duke is Head of Music and Human Learning at The University of Texas at Austin, a clinical professor in the Dell Medical School at UT, and Director of the [Center for Music Learning](#).

Formerly a studio musician and public school music teacher, Bob has published numerous influential research papers, authored books on [effective teaching in music](#) and [notable facts & quirks about how our brains work](#), and also co-hosts the public radio program and podcast [Two Guys on Your Head](#) (where topics range from imposter syndrome to writer's block to Wordle).

In today's episode, we'll explore...

- 2:41 – How did Bob get started in this field?
- 8:42 – What are some of the misunderstandings we have about how people learn?
- 13:48 – The importance of acknowledging, and helping students get comfortable with the reality that everyone learns at a different rate.
- 19:19 – How is mistake-making a good thing?
- 20:49 – How do you fine what is and isn't an error, anyway?
- 24:09 – What are prediction errors, and why is this particular type of error integral to the learning process?
- 27:48 – Do more advanced players make fewer mistakes than less-experienced players?
- 28:48 – If students could watch video of their teachers practicing, what would they be most surprised by? Like, what do professionals and students do differently in the practice room? There's a study which looked at this exact thing!
- 33:16 – How much of what we do needs to be conscious?
- 37:43 – Two vital components of learning – listening to ourselves, and having a clear intention. How do the two interact?
- 39:34 – Why you should probably practice your scales (and other things) at different tempos, rather than at the same old tempo.
- 40:59 – What might happen if you limited the number of repetitions you could do in a practice session? Would this help or hinder learning?
- 51:15 – What did Bob do in his band teaching days, that flipped the script and led to a situation where his band students were asking him for permission to be allowed to practice *more*?

## Notes

Bob mentioned a number of former and current doctoral students and colleagues with whom he has collaborated on various studies. You can learn more about their work here:

- 27:48 – [Lani Hamilton](#) (how often do musicians of different levels notice a discrepancy between what they want, and what actually comes out of their instrument)
- 28:48 – [Amy Simmons](#) (how do students practice vs. how do professionals practice?)
- 41:04 – [Rick Palese](#) (what happens if you restrict the number of repetitions one can put in during practice?)
- 45:57 – I made a reference to Pamela Frank, and how she described limiting the numbers of repetitions she allowed herself in practice when recovering from an injury. You can learn more about this and other details about her approach to practicing in [this podcast episode](#).

- 47:57 – [Micah Killion](#) (on making the undoable, doable)

## More from Robert Duke

Wondering if Bob has written a book for teachers? He has! It's about the fundamental principles of learning, specifically with regards to teaching music:

- [Intelligent Music Teaching: Essays on the Core Principles of Effective Instruction](#)

Trying to find a productive way to procrastinate on practicing? There are lots more resources (like [The Habits of Musicianship](#)) and links to more studies for further exploration at Bob's lab website here:

- [Center for Music Learning](#)

Looking for a new podcast for your commute? Get weekly, bite-sized podcast episodes on topics related to your brain. With banter. And topics ranging from imposter syndrome to memory to happiness to multitasking:

- [Two Guys on Your Head](#)

### Date Created

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