

Can Younger Students Be Taught to Engage in Deliberate Practice Too?

Description

Every young musician knows that in order to get better, they have to practice.

But when you're new to practicing, it's not actually so clear what practicing is supposed to look like. I mean, it's clear that repetition is involved – that we can see. But the most crucial (and invisible) element of effective practice, are all the essential *thought processes* that underlie each repetition. The reflection, the analysis, the planning, self-monitoring, and so on.

I know there were some times over the years, when I would accidentally slip out of my default mode of mindless “shallow” practice, and into thoughtful, analytical, “deep” practice. But it probably wasn't until grad school that I really began consciously engaging in deliberate practice on purpose.

Better late than never, I guess, but there's a part of me that wonders how my life might have been different, had I really understood how to practice effectively from an earlier age.

But is it just wishful thinking to imagine that I could have been a better practicer at a younger age? Like, *could* I have grasped the tenets of deliberate practice at age two? Or at six? Or maybe at twelve?

Because there are two fundamental challenges here. One, you need to have a functional understanding of how to *do* deep practice. And then, there's a motivational piece too. Because while deliberate practice can be deeply satisfying, it does take a lot of mental effort, and is probably not “fun” in the traditional sense of the word.

So...is it possible to not only teach kids the “how-to” of deep practice, but cultivate the motivation to *continue* deliberate practice as well?

The age question

Well, as to the age thing, it wasn't super clear to me from the research I was able to find, what the minimum age at which kids are able to grasp the tenets of deliberate practice might be.

However, I did stumble across a 2016 paper ([Eskreis-Winkler et al.](#)), which provided some pretty intriguing insights.

Deep practice and math performance

One study involved 98 fifth graders and 111 sixth graders, from four different schools around the US.

Everyone started with a math test to determine their starting level of performance.

Then the students went through a 25-min online training session, with text, audio, video, and some activities.

Half of the students (**treatment group**) learned the key elements of deep practice – i.e. “a) focus on weaknesses, b) get feedback, c) concentrate 100%, d) repeat until mastery” and were also taught that talent and effort are both necessary for success, though effort and deliberate practice in particular are often overlooked. They were encouraged to “interpret frustration and confusion as positive signs that one is engaging in optimal practice activities” – so as to create the expectation that while deep practice is not always easy, it does pay off in the long run.

Meanwhile, the other half of the students (**control**) learned some time management strategies, and were taught memorization techniques like mnemonics.

Five days later, students began spending class time doing multiplication and division problems in [Khan Academy](#).

And did an understanding of deep practice lead to better math scores?

Who benefits the most?

Well, it depends on how well you were doing in math to begin with.

The students who started out with high pretest scores didn't benefit much from the deep practice training, as they basically spent their time going through a bunch of math problems that were already pretty easy for them.

But the students who started out with lower pretest scores totally did benefit from the training, and performed better than their counterparts who did *not* learn about deep practice.

So this seems really promising – but how much of a difference would this short training make in the long term? Like, would students continue to engage in deep practice weeks or months later?

Deep practice and GPA

A second study looked at 427 sixth graders from three different middle schools.

Everyone started by completing several sessions of a 45-minute math task that was specifically designed to measure how much deliberate practice a student would engage in.

How so?

Well, the task involved doing a series of math problems, where the goal was to keep leveling up to higher levels of difficulty by answering five problems correctly in a row. The students were told to treat the task as a regular classroom assignment – but informed that that they could take breaks and freely browse the internet as they pleased (i.e. YouTube, Facebook, etc.).

10 weeks later, half of the students received the deliberate practice training (**treatment group**), while the other half (**control**) went through a training module on the connection between deep interests and high achievement, motivation, and overcoming some of the hurdles that can get in the way of motivation and success.

The next day, participants completed the 45-min math task again.

And a month later, students completed the 45-minute math task one last time.

So did the deliberate practice training make any difference in the students' practice behavior?

What benefits were there?

The short answer is yes – and the finer details are pretty interesting.

For one, the students who received deep practice training reported a higher tolerance for frustration both on the day after training, as well as a month later. ?

These students also demonstrated more deliberate practice-type behavior during the math task, compared to the students who received the generic training on motivation. Once again, this was true both on the day after the training, and one month later. ?

And most notably perhaps, students who received the deep practice training *earned higher GPA's* in the following grading period than those in the control group. Particularly those who had lower GPA's to begin with. ?

It's not forever!

This is all super encouraging – but there's a bit of "bad" news too.

A follow-up study found that this enhanced practice behavior doesn't necessarily continue forever. Because when they asked students to do the 45-min math task *four* months later, the students had fallen back into their old habits.

Sure, this might seem like a bit of a downer at first. But keep in mind that all the teachers were kept in the dark about the content of the training, so the students were making all of these changes to their practice

behavior totally on their own.

And much as I'd love it if a 25-minute training could permanently transform my kids into deep practicing ninjas, it makes perfect sense that deliberate practice behavior would naturally drop off, without a teacher, coach, or parent around to provide ongoing support and encouragement...

So what exactly was in the training? And how could you help your youngster embrace the principles of deliberate practice?

Additional resources

The gist, to keep it simple and easier for students to remember, was “a) focus on weaknesses, b) get feedback, c) concentrate 100%, d) repeat until mastery.”

But if you'd like to read through the full script of the deliberate practice training that the students experienced, you can do so in the study's [supplementary materials](#) (begins on p.19 of the Word file).

Also, one of the co-authors of the paper, Angela Duckworth, has put together a whole lesson plan on deliberate practice for the classroom, with printable worksheets, etc. This was based on the same work, and is available at characterlab.org: [Expert Practice for Classrooms](#)

References

Eskreis-Winkler, L., Shulman, E. P., Young, V., Tsukayama, E., Brunwasser, S. M., & Duckworth, A. L. (2016). Using wise interventions to motivate deliberate practice. *Journal of Personality and Social Psychology*, 111(5), 728-744.

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