

## How to Get Excited About Topics That Bore You

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I used to be *the* prototypical young mathphobe: I flunked or barely passed any math course I was forced to orbit. For me, graduating from high school was thrilling in that I would never have to touch a math or science book again. Math not only didn't make sense but was also worthless and painfully frustrating; the same went for technology.

The young version of me would have been shocked to learn that I would eventually become a professor of engineering, enchanted with mathematics and comfortable in the world of technology. As I've discovered from both personal experience and research, it is possible to learn to like — even to grow to love — subject areas that look boring or that you once loathed. In today's fast-changing business environment, the ability to develop new passions is particularly important. Here's how to do it.

**Find a seed of motivation.** The first step in building passion for a subject you don't like is to identify a reason to learn it. One of the best motivators is wishing to make an improvement in your life. Wanting a lifestyle upgrade allows you to make a [mental contrast](#) between where you are now (say, in a job as an office assistant) and where you want to be (say, a certified public accountant).

For me, the mental contrast between where I had been, the lowest enlisted rank in the army, and the many civilian career options I dreamed of provided a powerful boost. That's how, at age 26, I found myself restudying remedial high school mathematics in an implausible attempt to become an engineer.

**Overcome the pain in the brain.** When we even *think* about something we don't like or want, it can [activate a portion of the brain](#) — the bilateral dorsal posterior insula — that is involved in our experience of pain. This means, for example, that thinking about math if you don't like math (or studying English if you don't like English) can actually feel physically painful. The result can be that your brain diverts your attention away from whatever sparked the pain. In other words, you procrastinate.

One of the best ways to overcome procrastination is the [Pomodoro technique](#), a diabolically clever approach developed by Francesco Cirillo. In this technique, you:



- Turn off all distractions (no little ringie dingies on your phone or computer).
- Set a timer for 25 minutes.
- Focus intently for those 25 minutes.
- Reward yourself for at least five minutes when you're done (music, talking with a friend, getting coffee).

For me, it was a pity that I didn't know about the Pomodoro technique when I was retraining my brain. Those little breaks help the brain [consolidate material](#), which would have allowed me to build my understanding while minimizing frustration. Speaking of frustration...

**Realize it's perfectly normal to *not* understand something on your first try.** People often don't realize that the brain has [two quite different ways](#) of experiencing the world. The first one occurs while focusing on a topic, which activates what psychologists call [task-positive networks](#). The second way occurs when we're *not* focusing on anything in particular. Not focusing involves the default mode network and other resting state networks — a *diffuse* rather than *focused* mode of thinking.

Most people need to [go back and forth](#) between focused and diffuse modes in order to learn a topic. When you can't solve something in the first focus, you're not stupid — you just need to allow time to toggle to the diffuse mode. This second mode gives your brain a chance to consolidate and consider the material from a different perspective.



The fact that no one had ever mentioned this simple idea, that “it’s *normal* not to understand,” was a big reason for my early failure at math. I genuinely thought any new concept I faced in math should just “click” instantly. Since it didn’t, I chalked it up to my having no talent for math and quit trying. Only years later, after the army helped me form a motivational mental contrast, did I persist long enough at individual problems to discover that I could indeed learn math and science.

**Build a collection of neural “chunks.”** When we’re learning something new that doesn’t come naturally to us, we often skim instead of internalizing. Yet no one would ever sing a song just one time and think it had been truly mastered. Developing expertise involves easy recall of and automaticity with key concepts and tools.

Try this exercise if you’re working in something related to math or science (you can easily devise a similar exercise in other subjects). See if you can solve a key problem entirely on paper, without looking at the solution. If you can’t, try it again. And again the next day, and over the next few days. Each [day of focused learning](#), followed by an evening’s sleep, strengthens your new neural patterns, which are “chunks” of learning. Soon you’ll find





yourself able to mentally “sing” the problem — when you just look at it, you’ll find that the solution steps will flow quickly through your mind. You’ve “chunked” the material. But no fair fooling yourself! You need to actively work the problem on paper a number of times before you start mentally solving it.

The bigger your collection of neural chunks related to solving different problems, [the greater your expertise](#). And the greater your expertise, the more you will like what you’re learning. Daily practice and development of neural chunks are important in learning not only math and science but also virtually anything: language, sports, music, dance — even driving a car.

By using these four steps, you can develop a passion for a subject you don’t like. Some subjects take longer than others to truly master, but the approach outlined here can help get you past the worst obstacles. Like me, you’ll be surprised at what you can find yourself learning to love.

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