Learning on Steroids:

The Apply-First Method

by Scott Young

In this guide I'm going to share a method that I've found incredibly useful for self-education and learning which I want to apply effectively. It's radically different from the way most people learn in schools, so it may seem backwards when you first hear it. However, it's powerful if used properly.

Learn First, Apply Later

Most academic learning is done under the formula: learn first, apply later. First you learn about a skill or topic, then you answer questions on it. You learn about derivatives, then you find them. You learn how to construct a cash-flow statement, then you're given a problem to solve.

The idea here is that trying to do problems before you're taught how is wasteful. The assumptions are usually:

1. You'll learn bad habits instead of practicing the “correct” method
2. You'll be overly frustrated and then give up
3. Your method won't conform to the standards

Because schools value immediate efficiency, conformity and memorization, this theory makes sense. However, that doesn't mean it holds true for you—either in your self-education or in trying to learn the material your professors are dropping on you.

Apply First, Learn Later

An alternative strategy, which in my opinion can often work better, is to apply ideas first, then learn the “correct” method to solve them. Yes, this method can be a little bit more frustrating

initially, but it has the potential to create much deeper understandings than with the learn-first method.

With this strategy, instead of seeking out how to do a problem first, you try to solve it on your own. You seek out explanations, but only as little as you need to actually solve the problem. After you struggle through this process for a few questions, you read up on the "correct" solution.

Why This Method Works

There are two reasons this method works well:

First, you work on a need-to-know basis. This eliminates a lot of fluff and centers you on what is essential to solve the problem. This is unlike learning-first which presents a lot of material which you may not understand how it fits into the core issue. Thus, for self-education, it becomes more efficient.

Second, by exposing yourself to hard problems without solutions, you force yourself to think. Instead of just following formulas and spewing out the premade thoughts of other scholars, you start from scratch. You don't need to reinvent the wheel, but you put yourself in a position where you're hungry for the best method to solve a particular problem. That hunger means when

you finally get it, you'll savour it and remember what it taught you.

I'll explain how this impacted me in one of the few classes I've been in where this style was actually taught. It was a case-based managerial class I took in France. The professor created cases of companies which had obvious problems (they were losing money, big competition, etc.) and an overwhelming amount of detail which made it difficult to divine what the best response would be.

Instead of starting by teaching the models to solve these cases, he simply handed them to us and forced us to work on them for a few hours. Only after we had come up with an answer (usually wrong and inexact) he would share a simple model that could immediately bring clarity to the decisions to be made in the case.

However, had he started with the model first, it probably would have been too obvious. We wouldn't have remembered the model because, once known, the cases became relatively straightforward. As a result, we would have forgotten them the next time a similar problem came up.

Using Apply-First Learning

Apply-first learning doesn't just have to work on business cases. It can work on any kind of problem where you're learning a method to solve the problem, be it finance, computer science, mathematics or philosophy.

The best way to do it is to flip to the end of a chapter and find cases or problems which are solvable, provided you have the right methods. If you're self-studying, search online for example problems and force yourself not to read the explanations first.

The Apply-First Method

Next, set a timer for 20-30 minutes and force yourself to go through the problems, before knowing the correct method. Try to devise your own method to solve it, and don't give up even if it seems impossible. The goal isn't to reinvent the wheel and rediscover calculus, but to build a deep hunger for the best solution.

After the timer is up, go back and read through the methods and apply it to the problems you were struggling with. You'll probably find:

1. The methods you did devise may have been somewhat inaccurate
2. The “correct” solution is simpler
3. The correct solution handles problems you hadn't considered

What's more, because you experienced the frustrated state of applying without understanding, the actual answer sticks with you. Instead of shrugging it off, or marveling at its complexity, it becomes a practical tool you can use in the future.

When Should You Apply-First?

This method feels backwards and wasteful to many students. After all, time is limited. Why waste 30 minutes just to build an interest in an answer instead of going straight for it?

My answer is that the 30 minute warmup are often more valuable than 30 minutes of studying later. Even if you can't do 30 minutes, 5, 10 or 15 minutes can be enough to make you hungry for the correct answer.

The Apply-First Method

You've actually already experienced apply-first learning. Think back to anytime you've ever encountered a brain-teaser. You have to try to solve it before the method for solving it becomes known to you. That period of struggle before the answer is revealed creates more learning than studying the answer for a similar amount of time.

My suggestion for apply-first is that it should be used in classes which emphasize methods. So any class which uses formulas, processes, models or sequences. It isn't as useful when the subject to be learned is factual (like who the King of England was) or inconclusive (arguing in favor or against a particular idea).

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Using apply-first can be as simple as reading the problems and spending 5 minutes on them before going to read the chapter. This primes your mind to look for answers you wouldn't have otherwise asked before.

Good luck with this tactic and I'll see you on the other side!