The First 20 Hours: How to learn anything Fast.

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Chapter 1: a portrait of the author as a learning junkie.

- To make life even more interesting, we welcomed our daughter Lela, into the world. Lela is nine months old as I write this. Before Lela was born, Kelsey and I decided that if we were going to have kids, we wanted to make raising them ourselves a priority. One of the major reasons I quit my former management track job at a Fortune 500 Corporation was to have the flexibility to work from home, set my own schedule and spend as much time as possible with my family.
- Ten thousand hours equals eight hours of deliberate practice every day for approximately three and a half years, with no breaks, no weekends, and no vacations. Assuming a standard 260 working days a year with no distractions, that's a full-time job for almost five years, assuming you spend 100 percent of that time exerting 100 percent of your energy and effort
- Rapid skill acquisition has four major steps:
    - Deconstructing a skill into the smallest possible subskills;
    - Learning enough about each subskill to be able to practice intelligently and self-correct during practice;
    - Removing physical, mental, and emotional barriers that get in the way of practice;
    - Practicing the most important subskills for at least twenty] hours.
- Dr. Krashen calls this the monitor hypothesis. Learning helps you plan, edit, and correct yourself as you practice. That's' why learning is valuable. The trouble comes when we confuse learning with skill acquisition.
- In Mindset: The New Psychology of Success (2007), psychologist Carol Dweck cites a wide body of research that indicates individuals commonly hold one of two views of how their minds work. According to Dr. Dweck, people with a "fixed" mind-set assume that skills and talents are innate, that you're born with certain abilities that are what they are. If a person with a fixed mind-set is "not good at math," then extra effort practicing math is a waste. Why bother if you're never going to be good at it? People with a "growth" mind-set, on the other hand, assume that skills and abilities grow with practice and persistence. If a person with a growth mind-set gets a few math problems wrong, it's not because they're not blessed with good-at-mathematics; it's because they haven't practiced enough. With persistence and practice, it's only a matter of time before they will master the technique

Chapter 2: Ten principles of rapid skill acquisition.

- Here are the ten major principles of rapid skill acquisition:
    - Choose a lovable project.
    - Focus your energy on one skill at a time.
    - Define your target performance level.
    - Deconstruct the skill into subskills.
    - Obtain critical tools.
    - Eliminate barriers to practice.
    - Make dedicated time for practice.

- o Create fast feedback loops.
  - o Practice by the clock in short bursts.
  - o Emphasize quantity and speed.
- Popper said many wise things, but I think the following remark is among the wisest: "The best thing that can happen to a human being is to find a problem, to fall in love with that problem, and to live trying to solve that problem, unless another problem even more lovable appears."
- If you want a formula for living a satisfying, productive life, you can't go wrong with that one.
- Rapid skill acquisition requires choosing a lovable problem or project. The more excited you are about the skill you want to acquire, the more quickly you'll acquire it.
- -Internalizing this principle is more difficult for some people than others. Personally, I've always had a "Renaissance man" sort of temperament: there are hundreds of things I want to learn at any given moment, in hundreds of different areas. Emotionally, it's difficult for me to decide to deter learning new things I discover or hear about.
- When I try to learn everything at once, however, 1 don't really learn anything. Instead of making progress, 1 spend too much time switching between different skills, getting frustrated, and moving on to something else that's a recipe for extremely slow skill acquisition.
- I can't emphasize this enough. Focusing on one prime skill at a time is absolutely necessary for rapid skill acquisition. You're not giving up on the other skills permanently, you're just saving them for later.
- Instead of trying to be perfect, focus on practicing as much as you can as quickly as you can, while maintaining "good enough" form. In Art & Fear (2001), authors David Bayles and Ted Orland share a very interesting anecdote on the value of volume:
  - o The ceramics teacher announced on opening day that he was dividing the class into two groups. All those on the left side of the studio, he said, would be graded solely on the quantity of work they produced, all those on the right solely on its quality. His procedure was simple: on the final day of class he would bring in his bathroom scales and weigh the work of the "quantity" group: fifty pounds of pots rated an A, thirty pounds a D, and so on. Those being graded on "quality," however, needed to produce only one pot—albeit a perfect one—to get an A. Well, come grading time a curious fact emerged: the works of highest quality were all produced by the group being graded for quantity. It seems that while the "quantity" group was busily churning out piles of work and learning from their mistakes, the "quality" group had sat theorizing about perfection, and in the end had little more to ^how for their efforts than grandiose theories and a pile of dead clay.
- Skill is the result of deliberate, consistent practice, and in early-stage practice, quantity and speed trump absolute quality. The faster and more often you practice, the more rapidly you'll acquire the skill.

Chapter 3: Ten principles of effective learning.

- In that spirit, here are the ten major principles of effective learning:
  - o Research the skill and related topics.
  - o Jump in over your head.
  - o Identify mental models and
  - o Mental hooks. Imagine the opposite of what you want.

- o Talk to practitioners to set expectations.
  - o Eliminate distractions in your environment.
  - o Use spaced repetition and reinforcement for memorization.
  - o Create scaffolds and checklists.
  - o Make and test predictions.
  - o Honor your biology.
- For rapid skill acquisition, skimming is better than deep reading, by noticing ideas and tolls that come up over and over again in different texts, you can trust the accuracy of the patterns you notice and prepare your practice accordingly.
- If you're not confused by at least half of your early research, you're not learning as quickly as you're capable of learning. If you start to feel intimidated or hesitant about the pace you're attempting, you're on the right track.
- A counterintuitive way to gain insight into a new skill is to contemplated disaster, not perfection. What if you did everything wrong? What if you got the worst possible outcome?
- The best use of this technique is in instances where fast recall of information is essential. If you're learning common vocabulary words in order to acquire a new language, spaced repetition and reinforcement is valuable. In instances where fast recall isn't crucial, you're usually better off skipping the flash cards in favor of maximizing practice and experimentation time.
- Checklists are handy for remembering things that must be done every time you practice. They're a way to systematize the process, which frees your attention to focus on more important matters. Scaffolds are structures that ensure you approach the skill the same way every time. Think of the basketball player who establishes a pre-free throw routine. Wipe hands on pants, loosen the shoulders, catch the ball from J the ref, bounce three times, pause for three seconds, and shoot. That's a scaffold.
- According to Tony Schwartz, author of The Power of Full Engagement (2004) and Be Excellent at Anything (2011), the optimal learning cycle appears to be approximately ninety minutes of focused concentration. Any more, and your mind and body will naturally need a break. Use that opportunity to exercise, rest, have a meal or snack, take a nap, or do something else.

Chapter 4: yoga, though make it harder than it needs to be.

- The last straw came in the form of a YouTube video Leslie presented during one of his first online classes. In the video, Gil Hedley, a human anatomy teacher, is leading an educational autopsy of a human cadaver for a group of students. At one point in the video, Gil high lights an interesting feature of muscular fascia, the layers of fibrous tissue that encase our muscles. Just like ligaments and tendons, fascia is connective tissue: it binds our bodies together. By encasing muscle groups, our fascia helps us move by allowing our muscles to slide over each other more easily. There is, however, a drawback: when these layers of fascia are at rest, "fuzzy" strands of connective tissue, which have roughly the appearance and consistency of cotton candy, begin to grow between the fascias. Normally, that's not a big deal. Individual strands are very thin, so the sliding of muscles over each other breaks them easily. The trouble comes when you don't move enough. If you don't move your muscles for a certain period of time, the "fuzz" stays there and gradually builds up over time. When the fuzz gets thick enough, it can solidify, limiting your normal range of motion.

- At the core, modern yoga practice is about integrating breathing, movement, and mindfulness meditation. It's not about gymnastics, aerobatics, or becoming super flexible. Being super flexible or acrobatic does not make you a better yogi.

Chapter 5: programming.

- Tom Preston-Werner, best known as the founder of the open source code repository GitHub. Jekyll is designed to replace systems like WordPress by making it easy to run websites that don't rely on expensive requests. Imagine you have hundreds of word processing documents that contain important information and you need to make them all look the same— me font, same heading style, et cetera. If you wrote a program that could v" apply a given page design you choose to every file automatically (versus I updating every file by hand), it'd save you a lot of time. That's essentially what Jekyll does for web pages. Run a single command and Jekyll produces a complete website using the files on your computer that contain your website information and design template. If you make a change to the design or page content, you just run Jekyll again, and the entire site will be updated with the changes automatically, saving you / ours of effort. Jekyll presented a promising opportunity. In theory, I could replace WordPress with a simple folder of text files on my computer. My website would be blazing fast, ultra stable, and I'd save myself over one hundred I hours of server maintenance every year. There was, however, a catch: Jekyll is written in Ruby, a programming
- That's tricky, because the code you provide is all that exists as far as a computer program is concerned. It's like the quotation by Cad Sagan, the famous physicist: "If you wish to make an apple pie from scratch, you must first invent the universe."
- At the moment, Ruby boasts several major web application development frameworks, of which two are the most popular: Ruby on Rails^ and Sinatra.
- www.PersonalMBA.com, which is described in a tutorial created by Paul Stamatiou.
- In my Stack Overflow research, I found an online Ruby tutorial called Learn Ruby the Hard Way by Rob Sobers and Zed Shaw. The tutorial illustrates how Ruby works by giving you examples of simple Ruby programs and asking you to modify and run them to produce specific results.
- One of the applications I use on a daily basis is Backpack, which was developed by 37 signals. The primary benefit of Backpack is creating pages" that can contain pretty much anything: text, lists, images, files, et I cetera. When you save information in a page in Backpack, you can access it later from any computer, since all of the information is stored in the applications database.

Chapter 6: the touch typing.

- According to David Allen, author of the productivity uber-bestseller Getting Things Done (2002), if your work requires using any sort of computer learning how to touch-type is the single most significant thing you can do to improve your productivity.
- Four years later, in 1936, Dvorak filed a patent for the Dvorak Simplified Keyboard, which he claimed was far superior to other layouts. The basis for this claim was simple: Dvorak's layout placed the most commonly used characters directly under the user's fingers on the home row.
- Here's the story. Shai Coleman, a computer programmer, decided to try his hand at keyboard design. His goal was simple: to create a layout that had the relative efficiency of Dvorak, but was easier to learn. One of the major problems with Dvorak was that it changed everything. Every

- single letter key is different in Dvorak versus QWERTY. If you originally learned how to type on QWERTY, the magnitude of the change makes learning Dvorak an absolute nightmare.
- Based on Krzywinski's data, it takes almost twice as much physical effort to type on a QWERTY keyboard, compared to a Colemak keyboard. Colemak also beats Dvorak slightly, which is impressive, given Colemak only changes seventeen keys on the standard QWERTY layout, versus Dvorak's twenty-four.
- If you're interested, you can try the program yourself it's a at http://first20hours.com/keyzen-colemak
- Effective skill acquisition, particularly motor skill acquisition, seem to require sleep, which plays a major part in consolidating the skill into long term memory. Recent research suggests that, for greatest effect, it's best to sleep within four hours of motor skill practice: even a short nap is better than nothing at all.
- I'm two-thirds of the way to my target performance level of 60' WPM after only fourteen hours of deliberate practice. Can ambient practice carry me the rest of the way, without additional focused effort? I decided to do an experiment: I'm going to suspend my deliberate practice for thirty days and see what happens. I'll continue typing normally in Colemak, without switching back to QWERTY. With as much time as I spend on the computer, I should be able to get enough ambient practice to hit sixty WPM, right? After thirty days, I retook the typing test. Want to guess my typing speed? Forty WPM. Zero improvement. Even though I was typing quite a bit, I wasn't actively focused on improving my skills. Ambient practice wasn't enough to improve. If you want to improve a skill, you need deliberate practice, at least in the early stages of skill acquisition. Lesson learned.
- Back to deliberate practice: there's another test I want to try. Human languages, including English, follow a power law curve called Zipfs law: a very small set of words makes up the vast majority of actual usage. Based on an analysis of The Brown Corpus (1964), a 1 million-word collection of 500 modern English documents, only 135 words account for 50 percent of all English usage. The word "the" itself accounts for 7.5 percent, while "of accounts for 3.5 percent. You can take this idea even further: within most words, there are common sets of two- and three-character groupings that appear over and over again, like TH, AN, ING, and NCE. These groupings are called n-grams (or sometimes n-graphs): "n" is a variable that stands for the number of characters you're grouping.
- These lists are very useful. The better I'm able to type these sequences of characters, the faster I'll be able to type in general. Our brains are very good at this type oi thing: procedural memory is the term cognitive scientist's use for motor skills that happen in a certain order. By practicing the most common n-grams, I can train the procedural memory involved in typing directly. To do this, I downloaded a free program called Amphetype, which is designed for this sort of practice. The program allows you to create custom training sets, as well as set certain thresholds of performance, like words per minute and error rate.