



By Joe Byerly

Over the years I have collected passages and quotes in small notebooks that I continually refer back to in my writing and in personal reflection. They help remind me why I read in the first place. Two in particular are worth sharing in this chapter. The first is from the Greek stoic philosopher Epictetus who lived in the first century. He writes,

For even sheep do not vomit up their grass and show to the shepherds how much they have eaten; but when they have internally digested the pasture, they produce

externally wool and milk. Do you also show not your theorems to the uninstructed, but show the acts which come from their digestion.

He's using the sheep as a metaphor for the pursuit of wisdom. The purpose of self-development isn't to tell everyone we are doing it or to gain knowledge to impress bosses, but to let it show in our actions. And since humans first started writing practical advice for leaders, people have tried to figure ways to remember these lessons and incorporate them into their daily lives. This leads me to the second quote by a Stoic who lived shortly before Epictetus, the Roman Stoic philosopher Seneca who wrote:

We should hunt out the helpful pieces of teaching and the spirited and noble-minded sayings which are capable of immediate practical application—not far-fetched or archaic expressions or extravagant metaphors and figures of speech—and learn them so well that words become works.

We all would like to think that by reading books, we become better people, however there is a roadblock that gets in the way: Our memory.

The Problem of the Forgetting Curve

In 1885 German Psychologist Hermann Ebbinghaus published a ground-breaking study that directly affects our ability to achieve Epictetus's and Seneca's goal of turning words on the page into action. One of his most famous findings from this study came to be known as the Forgetting Curve. The Forgetting Curve describes the exponential loss of information from our memories starting minutes after we learn something new. The implications for us are that within 24-48 hours after finishing a book, we will forget 75% of what we read.

When I first started reading as a young officer, I wasn't aware of this memory shortfall and don't remember much from the books I picked up. It took years before I learned there are

ways to negate the power of the forgetting curve and to read in a way that we can continually reflect on those key lessons to inspire and enable us to turn words into works. These solutions are proven and simple. There are some pretty remarkable people from the history books who can back up these claims.

Grab a pen and a highlighter

General George S. Patton Jr. is undoubtedly one of the greatest tacticians in military history. During World War II, the Nazis feared him as he marched his Third Army across Europe to Hitler's doorstep. While Patton's military genius was on display in World War II, his path towards mastery began decades before he pinned a general's star on his uniform. It began in the margins of his books.

From the time Patton was a cadet at West Point, he underlined and marked key passages in his books as well as wrote notes to himself in the margins of the pages. His annotations included insights on tactics, strategy, leadership, and military organization. He continually referred back to these notes to develop his thinking on the aspects of warfare that would make him famous decades later.

In one of my favorite books, [*The Patton Mind: The Professional Development of an Extraordinary Leader*](#), Roger Nye connects the marginal notes of Patton's expansive library and the file cards he later produced from those notes to Patton's growth and maturity as a maneuver commander.

Patton's approach to reading directly attacked the forgetting curve. He used a pen to underline and make notes while he read; adding the sense of touch to what is typically a visual activity. While not known at the time, new research into the human brain demonstrates that this practice actually aids retention.

In their book, [*The New Science of Learning: How to Learn in Harmony with Your Brain*](#),

educators Terry Doyle and Todd Zakrajsek argue that by writing or highlighting when we read, we create multi-sensory pathways in the brain. They point out that research within the last twelve years demonstrates that when two or more senses are used together, learning and memory increase up to 50%.

Not only did Patton take a multisensory approach to learning by underlining key passages worth remembering, he also captured his insights in the margins. For example, in 1909 after reading a book about strategic leadership and operations, he reflected on the qualities that make a great general. In the inside cover of the book, he jotted down a list of words and phrases like “tactically aggressive,” “energy,” and “steadiness of purpose.” He continually reflected on this list, and adopted and honed many of these traits himself.

If we don’t capture our reflections or “ah-ha” moments in writing, we tend to forget them too. Once I began reading with a pen and highlighter in hand, marking the lines and paragraphs I thought important, and writing my ideas in the margins, I started doing a better job of actually retaining what I read.

I also began to take one more step to ensure I could easily review my notes, reflect on them, and add to them. So, there’s one more thing we need to have handy when we sit down with a good book. A notebook.

Grab your notebook

When we hear the name Leonardo Da Vinci, the word “genius” immediately comes to mind. His 16th century works “The Last Supper,” “Mona Lisa,” and “Vitruvian Man” are still popular today. The Da Vinci namesake is a part of our modern pop culture as well: [The Da Vinci Code](#) dominated the *New York Times* best seller list, he’s been represented in cartoons, movies, and TV shows, and the episode of [Epic Rap Battle](#) about him has had more than 74 million views on YouTube. In November 2017, one of Leonardo’s paintings broke a record, selling at auction for \$450 million.

There is something, however, we should know about his genius: he wasn't born with innate talent or guided to it through schooling (he didn't go to one) — he worked for it. And as Walter Isaacson argues in his biography, [*Leonardo da Vinci*](#), his style of creativity is exportable, because we can all learn from and adopt one of his most important practices — keeping a notebook. Leonardo's creativity and artistic abilities grew out his talent for making connections across disciplines. And it is within his notebooks where those connections were made.

His approach to creativity also helped him combat the forgetting curve because he wrote it down or drew it in his notebooks. Because paper wasn't cheap in his day, Leonardo had to fill the entire page with notes. His notebooks included drawings of nature and the human body, draft sketches of work he eventually painted, to-do lists, and books he read. He sometimes even went back years later and filled in blank spaces or the margins with knowledge he once was missing. By filling every inch, Leonardo was forced to see his old ideas over and over again until each page was full, and that gave him the opportunity to make connections between some of his many ideas.

So let's examine how keeping a Da Vinci style notebook can help us with memory. Research has shown that when we write things in a notebook, we will remember it better. It's called the "generation effect." In a 1978 study conducted by Norman J. Slamecka and Peter Graff, they found that people who wrote things down remembered them better than those who only read. They concluded that when we write, we're "generating" the words ourselves, which increases the amount of cognitive effort therefore increasing retention.

Leonard Da Vinci also continually reviewed the pages of notebooks, another key practice in attacking the forgetting curve. We all remember from highschool or college that when we only looked at the material once we rarely passed the test, however when consistently review the material, we increased the chances of getting a passing grade. This is because there are two important components to memory: the object we want to remember and the

retrieval cue for that memory. We need both to remember a quote or an event. Every time we review something we write down, we increase the strength of the memory. And in strengthening our retention, we are more likely to put what we've learned into practice.

Patton also kept a notebook of sorts. He didn't leave his marginalia within the books of his expansive library. He transferred many of his notes to typed note cards he maintained and, like Da Vinci, consistently reviewed them. For example, he produced multiple note cards with key points about leaders such as Frederick the Great and Napoleon Bonparte.

After learning more about these two men it became clear to me that their genius wasn't some innate gift, but they both took the steps to remember, recall, and turn their words into works -much like Epictetus's sheep.

A Few More Tips Before You Go:

- Keep a pen and highlighter nearby when you read. Mark key passages and write your insights in the margins. If something you read makes you reflect on a similar experience jot a few words down in the margins about that experience.
- After you finish a book, review your highlights and notes. Transfer them to a notebook or note cards. If you have new ideas while you write down your notes, write those down too.
- Take the time to occasionally review what you wrote down in your notebook. Keep strengthening that memory and those recall cues. I purchased a small 3×5 notebook that easily fits in my back pocket. I carry it with me everywhere, and found that I'm able to review my notes when I'm waiting in a checkout line or have a few minutes to myself.

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