

# Norcross MD Advocacy

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## Study Habits: Understanding your Brain while Studying

### What does it mean to study?

We've all had late nights of existential thought about an upcoming exam, wondering how some peers make it seem so easy to remember all of that information and ace their exams. Maybe you drink four cups of coffee like this gentleman on the right. Maybe you can't gather the motivation or push to do anything but lean on what you feel like you already know to lead you through the exam to the best of your ability. Let's throw all of that



out the window. **Studying is a process.** Done correctly and it can become a practice, and then a habit. The hardest part is building that habit up, but after that it becomes easier and easier.

In this month's newsletter, we're going to be tackling not only **general ways to study** but more importantly **what it means to study**. Deeper into that, we're going to be taking a look at how **understanding what kind of a learner and studier you are** to better shape your study strategies to suit your needs. Understanding how your brain retains information and how it learns is the first step needed to figuring out the most efficient method(s) to study.

I'm sure we've all looked into various ways that others study their material. The "fool proof" or "water tight" methods that will help you ace every exam you could ever possibly take! The reality is that we all learn in different ways, we all retain information differently. There is no one way for you to study that will perfect your performances, but let's start by figuring out who YOU are to nail down some good candidates.

## Figuring out your Study Brain

Our brains are all wired differently and this comes from how many variations can play a factor into why we learn differently, study differently, and overall function differently. Understanding what makes us all different is important in understanding what kind of a study brain you have. But not only that, it also allows us to understand people socially. A break from the discussion on studying, it is always important to remember:



**While we are all the center of our own world, we are not the center of the rest of the world. Understanding what makes us all different is important as it allows us to develop empathy. It helps us understand that everyone's pain is real, everyone's problems are real, even if they don't make sense to you. Keep the following pages in mind with how everyone is different and why everyone's feelings and experiences are just as important as yours.**

### **Biological Differences:**

It isn't a secret that biologically we are all put together differently from everyone in the world. The biggest factor that plays into how we study differently is that **different parts of our brains are more or less developed than others**. Someone with a more developed occipital lobe (dealing with visual processes of the brain) would likely be better visual learners than someone with more developed temporal lobe (dealing with auditory processes of the brain) who would be better auditory learners.

Genetically, we also have various abilities in being able to retain information. Some people are gifted with genetics that allow them to store and recall information easier than others while others might have genetics that don't have exceptional abilities in this area. So feel free to blame your parents or thank your parents to a very small degree with how you retain information! But with a pinch of salt, there are many other factors that play into how our memory and recall systems operate.

### Previous Experiences:

Previous experiences, specifically in an educational setting, do play roles. From a young age, when our brain is still raw and developing, **how early teachers and even how our parents teach us basic subjects**, we build senses for how to problem solve, identify patterns, reason, and whatnot.<sup>1</sup> As Vanderbilt Journal of Cognition and Development describes, these sorts of processes in our brain are built in our first 3-4 years of our lives, these being the most fundamental times of our brain’s development with specifics to complex cognitive actions.

Our life experiences after these first couple years of our life can also play a role as they can help us figure out what sorts of activities we enjoy doing. For example, if you’re someone who likes and has experience building things, either as a kid playing with Lego bricks or you work as an engineer or enjoy those subjects, perhaps more hands-on activities can help you study concepts and understand them better than other methods.

### Environmental Factors:

For young scholars and workers going into a field, often this comes with a heightened sense of pessimism or optimism, depending on the person. But a mentor offers a chance to balance out these expectations for yourself and set more realistic and attainable goals. Not only this, but staying connected with a mentor for long enough allows them to hold you accountable for these goals and help you achieve them, step by step.

### Psychological Factors:

Motivation plays a large factor in how much time we dedicate to studying. Studying requires being attentive, it requires being present, it requires being focused. When you’re distracted, your brain is not storing information in places it can be easily recalled later. When you lack attentiveness and focus, you also miss key information and you’re getting very surface level information only.

To the left is a chart about a concept of how we grasp information, referring to Bloom’s

## BLOOM'S TAXONOMY



<sup>1</sup> Rittle-Johnson, B. (2013). *Emerging understanding of patterning in 4-year-olds*. Journal of Cognition and Development.  
[https://cdn.vanderbilt.edu/vu-sub/wp-content/uploads/sites/280/2023/07/19031022/2013RittleJohnsonFyfeMcLellanMcEldoon\\_ATPT4a.pdf](https://cdn.vanderbilt.edu/vu-sub/wp-content/uploads/sites/280/2023/07/19031022/2013RittleJohnsonFyfeMcLellanMcEldoon_ATPT4a.pdf)

Taxonomy<sup>2</sup>, a system devised by Benjamin Bloom in 1956, later revised in 2001. The article by the University of Florida describes in more detail what it consists of, but in short terms, it is a level of complexity that can categorize information gained. The higher it is on the pyramid, the more complex the information is. When you lack attentiveness or focus, you limit the level of complexity of information you can learn.

Further psychological factors can include levels of stress, anxiety, etc. These things can not only make it harder to be focused and attentive but it can also decrease your motivation to study when you can't settle into a rhythm that you're comfortable with.

### **Social Factors:**

Peer influence plays a factor into how you might go through a class or a project or an exam while observing those around you. Most of us, consciously or subconsciously, think about how others are doing, what they're thinking, what they're saying. This could do harm in how we might lose motivation by feeling like we're behind or not good enough, it could also motivate us or give us tools such as a collaborative learning environment where we can find study methods that work for us from our peers.

### **Technological Factors:**

Various technological factors can also play roles in how we study or obtain information, mostly in our availability to study techniques or tools to help us study. Just in using different kinds of tools, some people may prefer paper and pencil or books and whatnot while others may prefer digital applications or tools to help them study.

Availability of these tools can influence what kind of study techniques are even possible for us to use. Poorer areas might not have as much access to the digital tools while more wealthy areas would. This would change what kinds of techniques kids grow up using in these areas. Some might work well with what they have available while others might struggle with their available tools and would benefit from receiving outside help.



<sup>2</sup> Bloom's taxonomy. Bloom's Taxonomy - Center for Instructional Technology and Training - University of Florida. (n.d.). <https://citt.ufl.edu/resources/the-learning-process/designing-the-learning-experience/blooms-taxonomy/#::-text=Overview,according%20to%20complexity%20and%20richness>.

## Smarter, not Harder! Learn your Brain

Like we discussed before, knowing how to efficiently study means knowing how the brain works when studying. Specifically, your brain. Let's help you figure out what kind of a brain you have.

Psychologists who study how the brain takes in and processes information have broken us all into generally 4 types of thinkers and learners. Take some time to reflect on yourself and think about which of these 4 kinds of learners reminds you of you.



### The Visual Learner

Very much grounded in the physical world, the visual learner absorbs information most efficiently through visual means. For example, these learners do well with images, diagrams, maps, and charts to take in information. Seeing the information displayed in front of these kinds of people helps them.

If this sounds like you, listen up! Using visual aids like color-coded notes, diagrams, and more are useful in helping us not only visualize the information we're studying, but also in how we remember it. This leads to the importance of forming mental images when studying. Forming mental images while studying by using these visual aids will help with recalling the information later when you need it. If you'd like to read more into this, this article about a concept called Dual Coding Theory<sup>3</sup> dives into the importance of how combining visual and auditory information input and output can help expand what we can learn. Lastly, things like posters, flashcards, whiteboards, etc. are all things you should surround your study environment with if you see yourself as a visual learner.

### The Auditory Learner

Auditory learners learn best through listening. They benefit from lectures, discussions, and audio materials. They often remember spoken instructions well and can follow verbal directions with ease. These kinds of learners benefit more from the other side of the Dual Coding Theory than visual

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<sup>3</sup> Last Updated November 30th, 2018 07:01 pm. (2018, November 30). *Dual coding theory* (Allan Paivio). InstructionalDesign.org. <https://www.instructionaldesign.org/theories/dual-coding/>

learners, however it is important to remember the value that can be derived from mixing elements of both.

Auditory learners benefit a lot from discussions. Discussing and hearing thoughts get tossed around, expanded onto, these help auditory learners develop their own ideas because talking about it can



often help profoundly with not only remembering information but also understanding it and finding pieces of concepts you might not fully understand. There is a popular learning technique partially focused at helping auditory learners called the Feynman Technique<sup>4</sup>. In simplest terms, the Feynman Technique works by having the subject write down information about a topic they are trying to study. By using what you've written as a framework, now try teaching this concept or topic to someone else. Let them ask questions. If you find you cannot answer a question, return to reading into the topic

and come back to teaching. Use analogies, simplify your explanations, using these will help you remember things by how you talk about it. Other various tricks for auditory learners include listening to recordings of lectures or simply reading notes or text aloud as opposed to in your head.

### **The Reading/Writing Learners**

Reading/writing learners prefer to interact with text. They excel at reading textbooks, taking notes, and writing essays. They often enjoy reading and can express themselves well through writing. It helps them to take their mind to places they can easily think about these concepts, in this case that being where they can write about the concepts in their own words.

The Feynman Technique is also geared towards people like this, people who find it beneficial for their study experience to include lots of reading and writing. The first part of the technique where it has you writing about a concept in ways that helps you understand is very beneficial for this community of

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<sup>4</sup> Csi-Admin. (2022, March 7). *The Feynman technique - the best learning method you've never heard of before*. Computer Systems Institute.

<https://www.csinow.edu/career-tips/the-feynman-technique-the-best-learning-method-youve-never-heard-of-before/>

people. Reading/writing learners benefit a lot from detailed and thought-out webs of notes while also benefiting from collections of books, articles, etc.

## The Kinesthetic Learners

If you're anything like me, experience is the best teacher. Being hands-on with your learning takes being a visual learner to a more intricate level in visualizing more. Kinesthetic learners thrive on these hands-on experiences. They learn best through movement and physical activities. They often have good coordination and enjoy learning through doing.

Similar to visual learners, kinesthetic learners also thrive from models, diagrams, images, etc. Being able to see concepts laid out for you might be a very big help in understanding them. But sometimes that isn't enough. Experiments, labs, things like these help us understand concepts by immersing ourselves into them. These can be harder to find to study but taking advantage of opportunities your professor might give to see these concepts first-hand, especially in STEM courses, is very beneficial. It is about feeling immersed in the concept, understanding it from the inside. Finding ways to do that is very helpful in studying and learning and understanding for these kinds of people.



## My Own Experience

While putting these words into a newsletter for you to read and reflect on might be helpful, it can be hard to find out truly what kind of learner you really identify as. I have struggled in finding what kinds of study methods work best for me and sometimes I get angry at myself or feel as if I should have tried harder. But it isn't always about needing to try harder, but rather just trying something else. Find something that works for you. Something that satisfies you to the results you want from studying.

Staying focused and attentive while studying has been a particular challenge for me. Something that has helped tremendously is setting timers to study. Not only this but keeping the timer open and in my view helps to zone in my focus on what is in front of me, including the timer. Setting timers for studying also helps with not feeling burnt out and pacing yourself.

**Find something that works for you. Don't be discouraged if you feel you haven't worked hard enough, maybe it was just working too hard on something that doesn't work for you.**

**Further resource links:**

*Studying 101: Study smarter not harder.* Learning Center. (2024, February 19).

<https://learningcenter.unc.edu/tips-and-tools/studying-101-study-smarter-not-harder/>

*10 tips on how to study effectively.* Victoria University, Australia. (n.d.).

<https://www.vu.edu.au/about-vu/news-events/study-space/10-tips-on-how-to-study-effectively>

Lparsons. (2023, November 8). *Top 10 study tips to study like a Harvard student.* Harvard Summer School. <https://summer.harvard.edu/blog/top-10-study-tips-to-study-like-a-harvard-student/> n