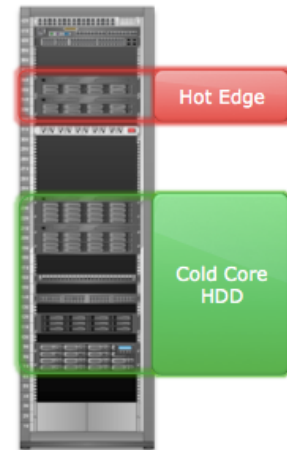


Learning About Learning

We are living in the Information Age. Over 90% of the world's digital data has been generated over the last two years¹. This creates a great opportunity to learn more deeply about familiar and new subjects. New learning tools such as Google search and Massive Open Online Courses (MOOC) create almost limitless learning opportunities. The challenge many people experience is the learning techniques they are using need to be updated to process all this new information. I recently completed the [Learning How to Learn: Powerful mental tools to help you master tough subjects](#) course through Coursera.

I was expecting to modernize some of my learning techniques. I learned a great deal about brain functions. Your brain has two types of memory, working and long term. Our memory is similar to a computer. We have four working memory slots that are high speed and like computer memory is not persistent. Your learning's need to be transferred to long-term memory in order to be available for long term recall. We learn in two primary modes: focused and diffuse. Focused mode is when we are completely focused on one particular topic. For example, reading a book, or solving a math problem. Diffuse mode is when your brain is learning while you are focused on something else. For example, when you sleep your brain is searching through chunks of previous learning's and experiences to solve an incomplete problem. Often I will wake in the morning knowing the answer to a problem I have been working. My brain was learning while in diffuse mode using the chunks of previous learning's and experiences to create a solution. It is important to validate learning's that come from diffuse mode thinking since these are new learning's, which may not be correct after review. Diffuse mode thinking was referred to as Zombie mode



¹ SINTEF. "Big Data, for better or worse: 90% of world's data generated over last two years." ScienceDaily. ScienceDaily, 22 May 2013. <www.sciencedaily.com/releases/2013/05/130522085217.htm>.

and it is a good idea if you are struggling to solve a problem using focused learning to take a break and allow your brain to work on the problem in Zombie mode.

Like many people I struggle with procrastination. I learned that procrastination shares characteristics with addiction. By avoiding a task you perceive as unpleasant you gain short-term gratification even though you know you are making the problem worse. When you are procrastinating your brain is actually associating pain with the task and making you more likely to try and avoid it. One way to reduce procrastination is to focus on the learning process you will use. Focus on creating a plan with a series of

smaller, achievable tasks that will allow you to complete the task over time. For example thinking of someone with the task of running their first marathon. Successful marathon runners don't start by running 26.3 miles the first



day. They follow a training program of several weeks where they train building endurance and speed. On the day of the race they are prepared to run the 26.3 miles. By breaking down their preparation (learning) into a series of manageable tasks they are able to train properly over a period of time. Using the same training method for projects and test taking reduces the impact of procrastination. I have found the Pomodoro technique to help me minimize procrastination. I will focus on a task for 45 minutes. I will schedule the time so it does not get pre-empted for what is urgent for the day. More information about the Pomodoro technique is available at:

<http://lifehacker.com/productivity-101-a-primer-to-the-pomodoro-technique-1598992730>

One challenge I am working to address is to be more aware when I am using closed thinking. Very often I will learn something based on my experience and current thinking. Being open to new ways to solving a

problem can be changed by new technology or discoveries. Often I have to suppress my urge to solve the problem based on what I know and consider the new information. The urge to solve a problem using the technique you know even when a better solution may exist is known as the [Einstellung effect](#). Often you have to be willing to unlearn what you know and learn the new solution.

With the explosion of data and the easy access provides unprecedented learning opportunities. Understanding more about human memory and the best ways to optimize your learning process is critical to taking advantage of all this new information. Managing learning challenges like procrastination and the Einstellung effect are critical to maximizing your efficiency.