

Thinking about Thinking about Your Success

Nick Marsing

Perhaps one of the greatest tendencies for humans is to become, and stay, comfortable. Change takes time, effort, and frequently discomfort. Moreover, we don't see the results immediately! All of these can make college a challenging experience. Luckily, Psychology has spent decades examining how people learn, change, and grow.

Common Myths About Learning & Why They Are Wrong	
You are Right or Left brained	You use both hemispheres of your brain. You are not necessarily right or left hemisphere dominant. Your brain utilizes hemispheric specialization based on the respective task.
You only use 10% of your brain	Your brain is immensely active, you use all your brain, just at different times for different things.
Intelligence sets the stage	Research has over and over again shown that there are factors far more influential than intelligence that influence a person's success in school or life.
I can multitask	Nope, you can't. Not only can you not multitask, but the belief that you can, is hurting your academic performance.
Learning styles	Auditory, Visual, and Kinesthetic "learning styles" are not backed by evidence. What research does find is that if a teacher attempts to improve instruction in one of those ways, everyone benefits. Students who think they have one of those learning styles may be less likely to try in a class they feel does not match their "learning style."
Intelligence & capability is inborn	Those who feel that they are incapable of performing some tasks or learning a specific subject have what is called a "fixed mindset". When people have fixed mindsets they see challenges as insurmountable and are likely to give up. Those who have "growth mindsets" are more likely to recognize that challenges lead to growth and success.

Myths about Learning

First, we need to understand some of the myths about learning. Why do we need to know about the myths? Because understanding how learning works also means understanding how it does not. If you know and understand the myths, you can avoid some of the common mistakes people make in their own learning (see Figure 1).

Figure 1

Assessing, Adapting, and Metacognition

Assessment has two parts. First, assess your instructor. You are not assessing if they are a good or bad teacher but rather what they want from you. One of the best ways to learn how to prepare for a class is to understand what a teacher expects of you on assignments and tests. You can do this by course, chapter, or even down to individual assignments. Most of the time, what the instructors are requiring falls into one of the levels of “**Blooms Taxonomy**” (an organizational structure of learning objectives). Take a

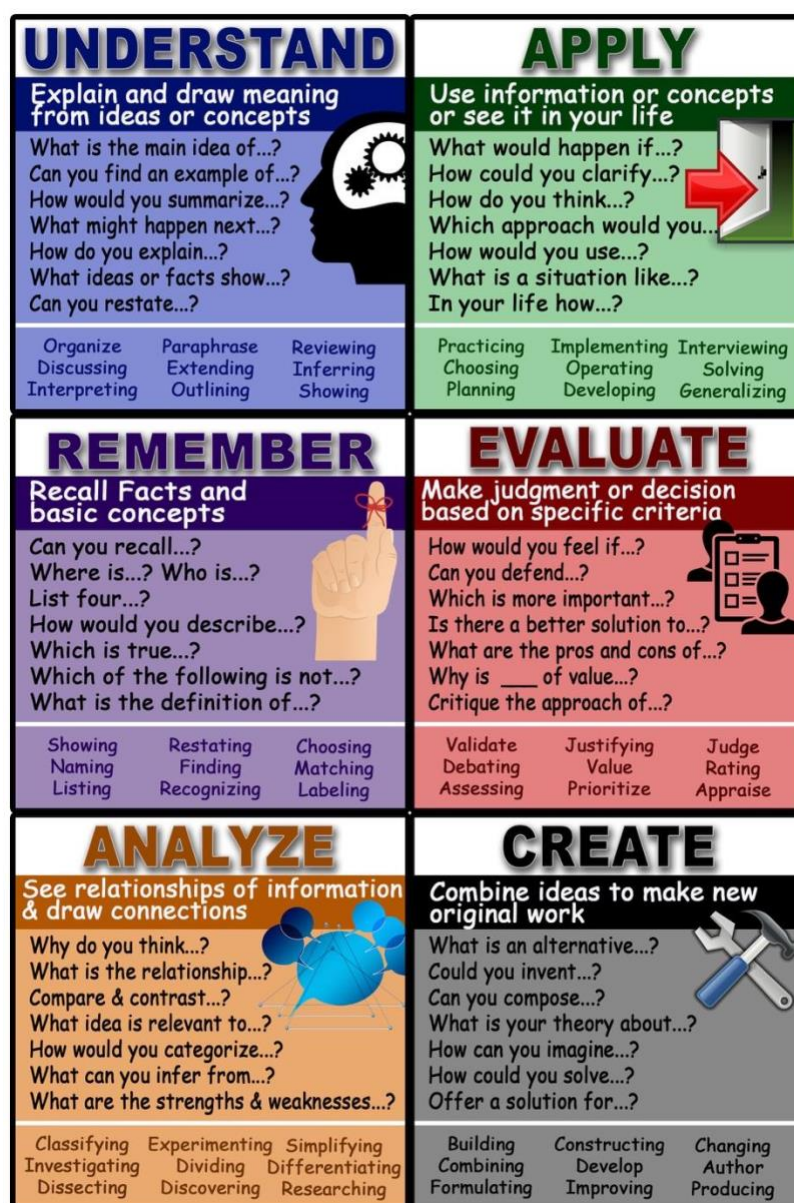


Figure 2

moment and think about what kind of questions your instructors ask on exams, what kind of assignments they give, and what kind of activities they do in class. All of these elements should guide you to deduce approximately what area of Blooms Taxonomy they prefer. Once you have that, you should start to think about how to adapt your participation, performance, and studying for that class. (See Figure 2.)

One of the goals is to learn to identify what the instructor wants from their students and then also begin to think like that instructor. When you find yourself saying “I think Professor _____ would ask a question this way” then you are on track.

The second part of assessment, is assessing yourself. This one may be one of the most challenging. You want to avoid the **Dunning Kruger effect** (it is really cool, look it up), you want to be as brutally honest as possible.

Before you can evaluate yourself, you will need to have something to evaluate. This process is called “**Metacognition**” or thinking about thinking.

Have you ever wanted to say to a professor one of the following statements?

- I studied everything but what was on the test.
- I wasn’t sure what you were asking.
- The questions were confusing.
- I am not sure what to study.

These are all statements that show ineffective use of metacognition because it means that while you may be studying, but you are not studying in a way that prepares you for that class. This is the true value in learning about metacognition. Metacognition has three basic parts: Plan, Monitor, and Evaluate. (See Figure 3.)

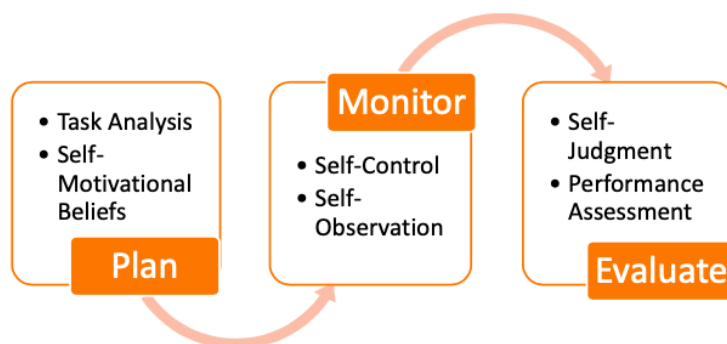


Figure 3

Plan

The planning phase of metacognition forces the learner to take charge of their study process. It could involve planning everything from a time, a location, or even who to study with. Most of us think, "Yea, I already do this one." However planning should involve doing a **task analysis** where you break down your project or studying into its smallest tasks so you know what to work on first. It then also involves planning what type of study strategy you are going to use and setting goals for your studying, making task analysis very important. You could say, "I want to get this far," but that does not really guarantee that you will learn much. The setting of goals should be more aligned with "I want to learn these three concepts really well." Also, the belief that you *can* set up an effective study plan, follow it, and succeed is called **self-efficacy**. If you don't plan, then you end up doing the least effective study methods. The last part of planning is taking what you learned in the "evaluation" phase and planning the changes you need to make so you can implement them.

Monitor

The monitoring phase of metacognition is focused on your performance as you are doing a task. You should be monitoring: 1) if you are on track to make a goal, 2) if you get off task, and what it is that gets you off task, 3) are you studying the way you planned with the strategies you planned, 4) are your breaks being productive or interfering with your task, and 5) if you need to make any mid-stream adjustments? These all deal with what *you* are doing, but you can also monitor how *a group* is doing.

Every now and again as you are studying, you should pause and go over some of those questions to see how you are actually performing. Don't wait until your assignment is done or test is taken to discover that you need to change something.

Evaluate

Evaluation, (or self-assessment) is probably one of the hardest but most beneficial parts of metacognition. You have to be brutally honest. If you are working to find your weaknesses, but you don't admit them, then you have gained nothing. You can't blame your friends, a confusing book, or even the instructor. When you look back at your study process you must be willing to identify what areas need work. When you do this effectively you can make those frail areas some of the stronger ones.

To help you with the evaluation process, you can look at the activities and the **exam wrapper** in the student resources canvas page. Exam wrappers are a helpful tool used to encourage people to look at their study strategies with specific questions. Some look at how you spend your time; others look at what types of questions you didn't do as well on.

One of my favorite ways to use the idea of "evaluation" to examine if your preparation

has been effective questions the standard method of preparation that students use.

Many students studying could be classified as SSSST (Study, Study, Study, Study,

Test). (See Figure 3.) Although a person who uses this may be studying, they may not be studying effectively. A far better option would be to use STTST (Study, Test, Test, Study, Test). In this format you are working to think more like the teacher, to generate your own questions and should not be relying on your



Figure 4

notes to see if you got it correct right away. This forces you to spend more time questioning yourself and your understanding in a way that encourages learning.

How does all of this work to make you a better student? If you can keep in mind how metacognition works and apply it in your studying and preparation, you will be much more likely to see improvement.

One of the ways scientists assess metacognition is through the metacognitive awareness inventory (look in the student resources canvas page for a link). A few of the

questions might give you some insight as to how it measures the way you manage your self-regulation and think about your studying.

- I know what the teacher expects me to learn.
- I am a good judge of how well I understand something.
- I have a specific purpose for each strategy I use.
- I use different learning strategies depending on the situation.
- I think about what I really need to learn before I begin a task.
- I think of several ways to solve a problem and choose the best one.
- I slow down when I encounter important information.
- I re-evaluate my assumptions when I get confused.
- I know how well I did once I finish a test.
- I understand my intellectual strengths and weaknesses.

Another way to think about this is, are you being cognitively passive or cognitively active about your learning? **Cognitively passive** means you go to class, read the chapter, etc. and expect learning to take place. **Cognitively active** mean you take ownership and “action.” You use study strategies like those discussed in this chapter and this book, ones that connect and engage you with the information. In active cognition you “take hold” of your education.

Breaks and Other Hazards

Taking breaks can serve as an important part of your studying. One of the first benefits of taking breaks refers to what is called **cognitive load**. Cognitive load is how much information your brain can take in and process at one time. Understanding cognitive load can help you. First, set up a specific time to dedicate to studying a subject or completing a project. Then focus on *only* that for the time allotted (about 20min is perfect). Then give yourself a break. But, make your breaks are meaningful. Give yourself a goal to achieve; for example, you could say that you can earn a break after you write two more

high quality pages on your paper. Doing this makes breaks serve as reinforcement for performance. However, your breaks can't be longer than your study sessions. It is ok to even let yourself daydream or get distracted every now and again. This a healthy process for your brain, as long as you can control it.

Next, give your studying a space. You will want both physical time and mental space. This is called the **Spacing Effect**. When you have a location dedicated for studying your brain knows that is what happens there (and hopefully it is a place where you can eliminate distractions). When you have a specific study time, it helps you keep a schedule. Mental space means when you are studying; do it one subject at a time, not too close to each other. This is where taking breaks can come in handy. If you are taking Psychology, Biology, and History, you will want to spend some time studying psychology, then take your break, and then come back and study another subject. This helps your brain separate the information you are trying to input, and it reduces **interference**, so you will be less likely to mix them up when asked to recall.

Finally, learn to use **distributive rehearsal**. This is when you spread your studying out over time. So, rather than spending 3 hours studying the day before the test, you spend 30 minutes every day for the six days leading up to the test. Psychologists have been researching this since 1913 and continue to come up with the same results. People learn more and better if they spread their studying or rehearsal out over time. This has several benefits; it exposes you to the material over and over so you can learn it at a deeper level; it provides routine (and your brain really likes that), and it discourages cramming and all-nighters (which can cause cognitive overload). You all have potential to achieve great things. Careful reflection on your academic performance and implementation of these principles can help you become the best student you can be.