<http://www.spencerauthor.com/metacognition/>

Top of Form

[CREATIVITY](http://www.spencerauthor.com/category/creative-process/)[PODCAST](http://www.spencerauthor.com/category/podcast/)

**Five Ways to Boost Metacognition In the Classroom**

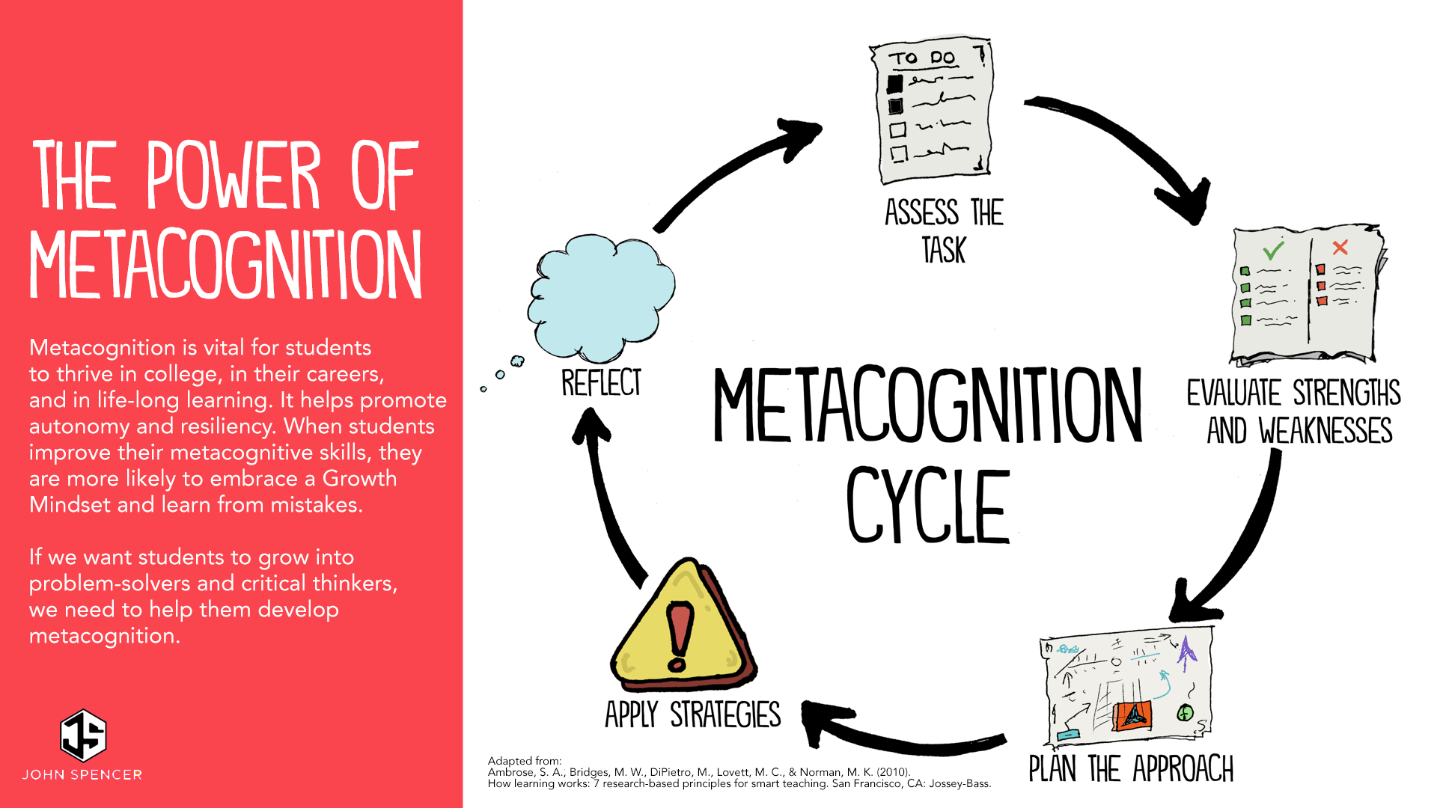
By [John Spencer](http://www.spencerauthor.com/author/admin/) August 13, 2018 [10 Comments](http://www.spencerauthor.com/metacognition/#comments)

**1.2k**

**SHARES**

[Share](https://www.facebook.com/sharer.php?u=http%3A%2F%2Fwww.spencerauthor.com%2Fmetacognition%2F)[Tweet](https://twitter.com/intent/tweet?text=Five%20Ways%20to%20Boost%20Metacognition%20In%20the%20Classroom&url=http://www.spencerauthor.com/?p=57922&via=spencerideas)[Pin](http://www.spencerauthor.com/metacognition/)

If we want students to develop into critical thinking, lifelong learners, we need them to develop metacognitive skills. Metacognition is vital for helping students become self-directed learners (both self-managers and self-starters). It will help them navigate the complexities of a changing world and it will help them as they engage in creative work. In this blog post, we explore how to make that happen.



**Listen to the Podcast**

If you enjoy this blog but you’d like to listen to it on the go, just click on the audio below or subscribe via[iTunes/Apple Podcasts](https://itunes.apple.com/us/podcast/the-creative-classroom/id1141442116?mt=2)(ideal for iOS users) or [Google Play](https://play.google.com/music/listen?u=0#/ps/If6y5vxnqqpslaz2bivvl3utwwu)and [Stitcher](http://www.stitcher.com/podcast/john-spencer/the-creative-classroom?refid=stpr" \t "_blank) (ideal for Android users).

Audio Player

00:00

00:00

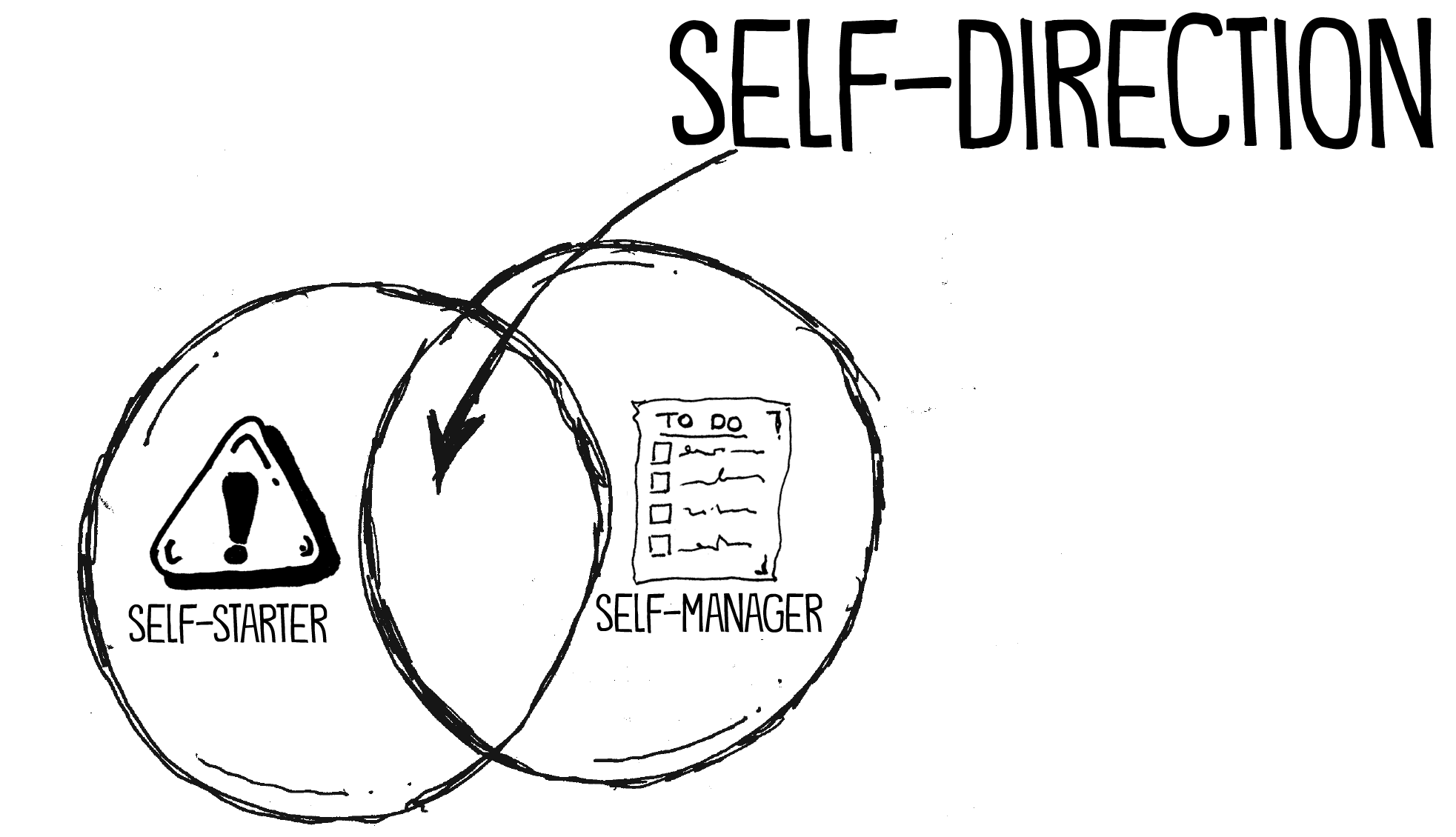
[Use Up/Down Arrow keys to increase or decrease volume.](javascript:void(0);)

**Navigating the Maze**

We live in an era where robotics and artificial intelligence will replace many of our current jobs. Global connectivity will continue to allow companies to outsource labor to other countries. Our students will likely [change jobs every five to seven years](https://www.fastcompany.com/3055035/you-should-plan-on-switching-jobs-every-three-years-for-the-rest-of-your-). The corporate ladder is gone and in its place, is a complex maze.  They will inhabit a world of constant change. But how do we help students navigate that maze?

We often hear that our current students will work in jobs that don’t exist right now. But here’s another reality: our current students will be the ones who create those jobs.

Not every student will create the next Google or Pixar or Lyft. Some students will be engineers or artists or accountants. Some will work in technology, others in traditional corporate spaces and still others in social or civic spaces. Some of them will work in high-skilled manufacturing. But no matter how diverse their industries will be, our students will all someday face a common reality. They will need to be self-starters and self-managers.



This is why metacognition is so vital. Metacognition happens when students analyze tasks, set goals, implement strategies and reflect on what we’re learning.

**The Critical Role of Metacognition**

People debate about which subjects will prepare kids for the future – whether it’s engineering or coding or philosophy. But I love way A.J. Juliani puts it, “Our job as teachers is not to ‘prepare’ kids for something; our job is to help kids learn to prepare themselves for anything.”

This is why metacognition is so important. When students have strong metacognition skills, they are able to anticipate change and navigate complexity. But that doesn’t always happen. According to a[Pascarella and Terenzini study,](https://www.amazon.com/How-College-Affects-Students-Research/dp/0787910449) one of the most significant challenges college students face is managing their own learning.

However, it goes beyond success in college and career. If we want students to become lifelong learners, they need to know how to own their learning; which means they need to know how to think about thinking.

I love the way the authors of [*How Learning Works*](https://amzn.to/2P6rYsK) put it, “To become self-directed learners, students must learn to assess the demands of the task, evaluate their own knowledge and skills, plan their approach, monitor their progress, and adjust their strategies as needed.”

**How Does Metacognition Work?**

The authors of [*How Learning Works*](https://amzn.to/2P6rYsK)describe metacognition as a cycle. Check it out in the video below.

It starts with the ability to assess the task at hand. Here, students have a clear picture of what they need to accomplish. This part sounds easy. However, this goes beyond simply reading instructions. It includes the ability to integrate prior knowledge with new knowledge and make connections between direct instruction and a new tasks. If a task feels too complicated, students can become overwhelmed and give up. Other times, they might oversimplify the task or get hung up on one specific detail.

In the second phase, students evaluate their own strengths and weaknesses. This can be tricky if students have an inaccurate view of their skills. Often, students who are highly skilled will suffer Imposter Syndrome, where they underestimate their skills because they are painfully aware of what they don’t know. On the other hand, students with a lower skill level might experience the Dunning Kruger Effect, where they overestimate their skills.

Afterward, students plan out their approach. Note that this does not have to be a detailed plan. In some cases, students might visualize where they need to be and what they need to do to get there. However, it’s interesting that experts tend to spend more time in planning than novices but are more effective in implementation, because novices experience more initial mistakes.

Students then take action and apply the strategies and monitor their progress, which leads to the next phase, where they reflect on their learning and adjust their approach. Here, they might determine new strategies that ultimately lead back to a re-assessment of the tasks. Effective problem-solvers are more likely to adjust their approach by highlighting what’s working and fixing what’s failing while poor problem-solvers are more likely to stick with an approach that isn’t working.

This cycle can happen rapidly or over a longer stretch of time. And it doesn’t always follow the sequence systematically. In some cases, it can almost feel so seamless that it’s invisible. However, even so, it is vital for learning. When students have strong metacognition skills, they are more likely to succeed in college, in their careers, and in life-long learning.

**Five Ways to Boost Metacognition**

Although there are many ways to boost metacognition, the following are a few ideas you might try out.  This is by no means an exhaustive list. If you have additional ideas, I’d love for you to share them in the comments section at the bottom of this post.

**#1: Use a Gradual Release Approach**

Metacognition is a natural part of the learning process. However, students often need additional support to see what metacognitive thinking actually looks like. Teachers can model metacognitive thinking by walking students through the process verbally and making the process visible for students. It shouldn’t be an isolated lesson plan on metacognition so much as an integrated part of direct instruction and checking for understanding. You can model the process in small groups or one-on-one as well. In some cases, you might provide scaffolding, such as sentence stems or graphic organizers.

It also helps to provide specific metacognitive strategies and structures. This will help students to assess the tasks and planning the approach. For example, you might help students learn how to look at a complex task and develop a to-do list or a checklist.

**#2: Integrate Self-Assessment**

When students engage in self-assessment, they learn how to identify their strengths and weaknesses (a key part of the metacognition cycle). Here, students can set goals for the key areas where they need to grow.

When students own the assessment process, they are able to figure out:

* What they have already know (prior knowledge)
* What they don’t know (areas of improvement)
* What they want to master (their goals)
* What they will do to improve (action plan)

Self-assessments might include self-reflection questions and surveys that help them articulate where they are in terms of mastery. But they can also include diagnostic rubrics and checklists to compare what they need to do with what skills they have mastered. Other times, it might be more open-ended, with students annotating their work with a critical eye. Notice that this type of self-assessment also helps students monitor their progress.

However, self-assessment doesn’t have to be solitary. Sometimes students experience blind spots and need fellow students to help provide more accurate feedback. Students can do a peer conference with sentence stems. You might provide a specific critical friends structure, like the [twenty-minute peer feedback](http://www.spencerauthor.com/the-20-minute-peer-feedback-system/) system or you might try a shorter structure like see-think-wonder, 3-2-1, or the feedback carousel. Teachers can play a critical role in this process, too, by using student-teacher conferences.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Feedback Conference** | **Reflection Conference** | **Assessment Conference** |
| The Focus | Targeted help/instruction in specific areas of reading | Guiding students toward self-reflection | A conversation about the mastery of standards |
| Role of the Student | Ask questions and seek out specific feedback | Answer questions and reflect on his or her learning | Talk about progress toward specific standards |
|  |  |  |  |
| Role of the Teacher | Answer questions with accuracy and precision and allow for students to practice a strategy under supervision | Ask questions, paraphrase answers and guide students toward self-reflection | Asks questions about progress and share information based upon evidence of student work. |
| Further Application | Students leave with actionable steps to fix a particular work | Students can select the strategies and plan for future improvement based upon self-reflection. | Students can figure out what standards still need to be mastered and how to get there |
| Role in Cultivating a Growth Mindset | Every student has a chance to admit to failure and learn from it | Every student has a chance to articulate areas where they are growing and where they still need to grow | Every student is able to realize that there are as many retakes as necessary until they master the standards |

If you’re interested in using these assessments, check out the free assessment suite that I included in the design thinking toolkit at the bottom of this post.

**#3: Practice Visualization**

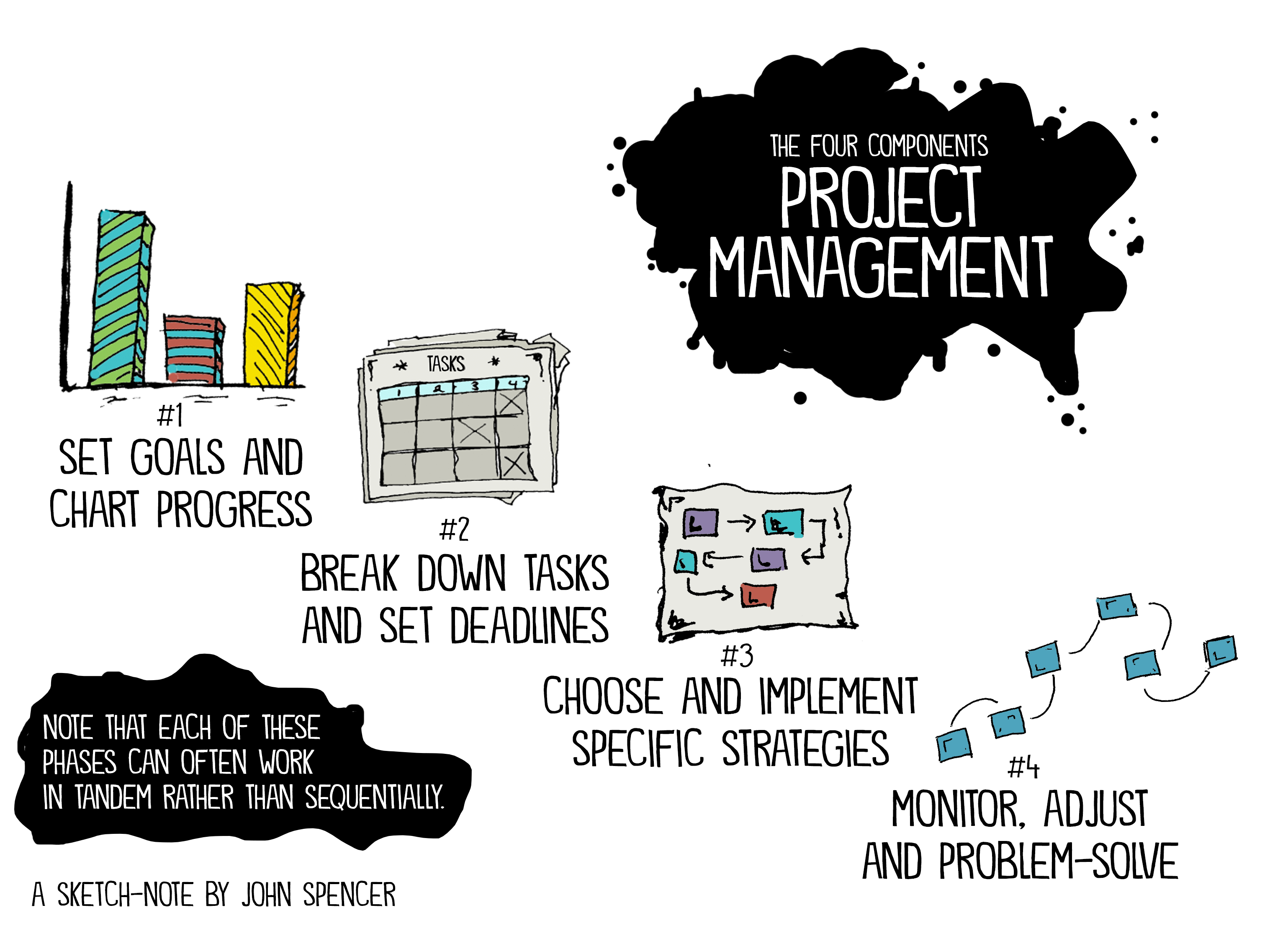
Visualization is a [critical component for metacognition](https://reflectionsciences.com/metacognition-executive-function/) because it helps improve executive functioning skills. You might simply ask students to start a class period by visualizing what they will accomplish. This helps support the idea of developing a plan. However, for longer-term planning, you might want to have students sketch out their plan. I once saw a teacher who had students sketch out a large calendar on butcher paper (despite the fact that she clearly wasn’t a butcher) and then create stick figure sketches as they broke down the tasks. Each day, students would unroll their butcher paper and review their visual planning document.

**#4: Incorporate Project Management**

For the longest time, I was the project manager for 30 different projects. I would chart their progress and nag them about getting tasks done. Or I would set specific deadlines for the entire class. Over time, though, I realized that my students could learn how to manage their projects on their own. This is also why I believe in guiding students through a project management process. It’s not perfect. Kids will still struggle to meet deadlines. Procrastination will still occur. As a teacher, you will need to do frequent check-ups to see if they are accurately monitoring their progress.

However, that’s okay. [Project management](http://www.spencerauthor.com/helping-students-learn-project-management/) is a skill that improves over time. As students learn how to break apart tasks and chart their progress, they develop improved metacognition because they are applying strategies and monitoring their progress on a regular basis. They learn how to modify their initial plans and troubleshoot when they hit a wall.

If you do a quick search online, you’ll see tons of different[project managemen](http://www.spencerauthor.com/helping-students-learn-project-management/)t models, apps, and programs. I’ve seen people who swear by one particular approach. However, it’s more of a personal preference. While the frameworks and programs vary, the important thing is that students are engaged in the project management process. Here are four key components to project management:



These components do not need to occur sequentially.  Sometimes students will change goals in the middle of a project and that’s okay. It’s all a part of developing improved metacognition.

**#5: Allow Mistakes and Reward Risk-Taking**

Students are more likely to develop metacognitive skills when they have the permission to make mistakes and grow from them. In [*How Learning Works*](https://amzn.to/2P6rYsK)*,*Susan Ambrose and her co-authors note that student attitudes and mindsets have a strong impact on metacognition. When students have a [growth mindset,](http://www.spencerauthor.com/seven-ways-to-help-students-develop-a-growth-mindset/)they are able to think about their learning and modify their approach as they go. Furthermore, they tend to be more open to feedback and more accurately assess their own strengths and weaknesses.

Here’s where it helps to reward creative risk-taking. Schools tend to reward students for getting the right answer quickly. However, when students have the permission to make mistakes and to take creative risks, they see learning as iterative and evolutionary. Here, they are more likely to assess and revise their own work and to seek out feedback in a space that feels safe and low-risk.

**Metacognition and Design Thinking**

When teachers empower their students, they help them develop metacognitive skills. This is why we integrated metacognition into the LAUNCH Cycle, a [design thinking](http://www.spencerauthor.com/design-thinking/) framework. Students get to ask the questions, choose the research strategies, and actively monitor their progress through project management. If you’re interested in this, check out the free design thinking toolkit. I’ve included the free assessment suite with templates for self-assessment, peer assessment, project management, and student-teacher conferencing.

**Get the FREE Design Thinking Toolkit**



Get this free toolkit along with members-only access to my latest blog posts and resource

Top of Form

First Name

Email Address

We use this field to detect spam bots. If you fill this in, you will be marked as a spammer.

I WANT THIS!We won't send you spam. Unsubscribe at any time.[Powered by ConvertKit](https://convertkit.com/?utm_source=dynamic&utm_medium=referral&utm_campaign=poweredby&utm_content=form)

Bottom of Form



[**John Spencer**](http://www.spencerauthor.com/author/admin/)

*My goal is simple. I want to make something each day. Sometimes I make things. Sometimes I make a difference. On a good day, I get to do both.*[*More about me*](https://www.spencerauthor.com/about-me/)

**10 Comments**

* [***Five Ways to Boost Metacognition In the Classroom. | "Όποιος ελεύθερα συλλογάται, συλλογάται καλά" Ρήγας Βελενστινλής***](https://vservou2.wordpress.com/2018/08/14/five-ways-to-boost-metacognition-in-the-classroom/)

[August 14, 2018 at 2:54 am](http://www.spencerauthor.com/metacognition/#comment-13045)

[…] <http://www.spencerauthor.com/metacognition/> […]

[Reply](http://www.spencerauthor.com/metacognition/#comment-13045)

* **http://0.gravatar.com/avatar/697aa4d203bf07c4ebd715454db5a6e1?s=60&d=mm&r=g*Hiba***

[August 19, 2018 at 2:10 am](http://www.spencerauthor.com/metacognition/#comment-13135)

Hello  
I found this post great cz I believe in metacognition and its power to elevate learners’ productivity. Hope to get more of resources for assessment and reflection since I think they are the core for metacognition.  
Thank u  
Hiba

[Reply](http://www.spencerauthor.com/metacognition/#comment-13135)

* [***Sharing Diigo Links and Resources (weekly) | Another EducatorAl Blog***](https://educatoral.wordpress.com/2018/08/19/sharing-diigo-links-and-resources-weekly-25/)

[August 19, 2018 at 3:50 pm](http://www.spencerauthor.com/metacognition/#comment-13152)

[…] Five Ways to Boost Metacognition In the Classroom – John Spencer […]

[Reply](http://www.spencerauthor.com/metacognition/#comment-13152)

* [***Digital Technology and Quality Teaching Tweet Recap, w/e 08-18-18 - Tech Pubs***](https://techpubs.info/digital-technology-and-quality-teaching-tweet-recap-w-e-08-18-18/)

[August 19, 2018 at 9:31 pm](http://www.spencerauthor.com/metacognition/#comment-13155)

[…] Five Ways to Boost Metacognition In the Classroom […]

[Reply](http://www.spencerauthor.com/metacognition/#comment-13155)

* [***Just News from Center X – August 24, 2018 – UCLA Center X***](https://centerx.gseis.ucla.edu/just-news-from-center-x-august-24-2018/)

[August 24, 2018 at 12:24 am](http://www.spencerauthor.com/metacognition/#comment-13217)

[…] Five ways to boost metacognition in the classroom […]

[Reply](http://www.spencerauthor.com/metacognition/#comment-13217)

* **http://1.gravatar.com/avatar/7fb4833da500ee4e9aacfe8b8cd749b6?s=60&d=mm&r=g*Jessica Baker***

[October 11, 2018 at 2:54 pm](http://www.spencerauthor.com/metacognition/#comment-13809)

I really enjoyed reading this. I think it is extremely important in today’s world that our students develop a sense of metacognition. I really liked how this article laid out steps we can take to help develop and grow student’s metacognition. Having students self-assess. What do they know and what do they need to know. How are they going to discover the information they want to know. Incorporating project management is a difficult task for students and I truly believe building students metacognition and management skill together, there will be a great effect. I also love the idea of letting mistakes happen and being rewarded for taking risks. Students need to be comfortable to take risks and be able to fail and pick themselves back up. It is a huge skill that will “help kids learn to prepare themselves for anything.”

[Reply](http://www.spencerauthor.com/metacognition/#comment-13809)

* [***Carrying the Cognitive Load – Feaster Charter***](https://feastercharter.wordpress.com/2019/02/03/carrying-the-cognitive-load/)

[February 3, 2019 at 11:13 am](http://www.spencerauthor.com/metacognition/#comment-16520)

[…] the learning. John Spencer wrote a great blog post about the metacognitive process – Five Ways to Boost Metacognition in the Classroom -it is also a […]

[Reply](http://www.spencerauthor.com/metacognition/#comment-16520)

* **http://2.gravatar.com/avatar/58f9c5eb5aec610881ae04ef45c24f03?s=60&d=mm&r=g*Matthew Williamson***

[February 15, 2019 at 3:11 pm](http://www.spencerauthor.com/metacognition/#comment-16636)

This is great! Nice work and thank you for providing a resource such as this for us teachers!

[Reply](http://www.spencerauthor.com/metacognition/#comment-16636)

* [***Fostering Critical Thinking and Problem Solving Strategies - Nexus Education***](https://www.nexus-education.com/fostering-critical-thinking-problem-solving-strategies/)

[March 4, 2019 at 12:34 pm](http://www.spencerauthor.com/metacognition/#comment-17219)

[…] This is where metacognition comes into play. There are many facets to enhancing critical thinking and problem solving skills, but metacognition plays a large role. Educators need to make metacognition a regular part of the learning experience. How regularly do we ask students to think about their thinking, thereby thinking about their learning? This is very similar to the strategies for intentional reflection I have written about previously. Much is learned through the reflective process because we are pausing with the intention to grow. There are several metacognitive cycles out there to use for engaging your students’ thinking processes. I’m a bit partial to one shared by John Spencer: […]

[Reply](http://www.spencerauthor.com/metacognition/#comment-17219)

* **http://1.gravatar.com/avatar/121be8154a4008148f099a070e6fa11e?s=60&d=mm&r=g*Maria Razi***

[March 22, 2019 at 12:45 pm](http://www.spencerauthor.com/metacognition/#comment-17617)

This was really helpful for me in understanding the true meaning of Metacognition. It will help our students to be good refectors.  
And it will not only help them in their studies but also help them to refle to  
reflect upon their daily lives stuff and decisions and will help them succeed in every walk of life too..  
As I believe we as teachers are responsible to uplift our learners as successful and better citizens. Who must be able to reflect and learn from his/her mistakes.  
Thank you.

[Reply](http://www.spencerauthor.com/metacognition/#comment-17617)

