



ASCD Study Guide: Teaching Students to Drive Their Brains

Using the Brain's GPS

By Donna Wilson and Marcus Conyers





Explicitly teaching students that (1) learning changes the brain to support learner motivation and positive teacher expectations, (2) metacognition empowers them to monitor and adjust their learning progress, and (3) cognitive strategies improve their learning across contexts, can lead to a cycle of higher motivation and student learning in ways that help all students reach more of their potential.

This study guide and video featuring teachers implementing our “Drive Your Brain” approach is designed for nations, states, professional learning communities, and teachers who seek to support the learning and achievement of all students.

Introduction

This guide has been created to enrich your application of these research-based, practical, and original ideas for teaching metacognition. The Drive Your Brain® component is just one aspect of our popular BrainSMART® approach to teaching and learning.

This guide is not meant to cover all elements of the video but rather to emphasize key aspects that teachers have found useful: why it is important to teach using these ideas and strategies and how you can teach using our approach. We have found that teachers’ insights about their own learning have been quite powerful. Consider, for example, the following testimonials: “I can still learn important, life-changing things!” “Metacognition is a game changer for me, too.” “I love sharing this positively transformational approach with my students!”

You can use this study guide on your own, or you can pair with a colleague or form a study group. Teachers often enjoy sharing insights and lessons they have learned with colleagues to help students become more independent thinkers and learners.

Educators who want to implement this positive and practical approach to teaching metacognitive strategies might want to also read the book, *Teaching Students to Drive Their Brains: Metacognitive Strategies, Activities, and Lesson Ideas*, found on the ASCD website at www.ascd.org/drivetheirbrains.

The study guide includes a list of supporting resources to supplement, if you wish, your learning, and a series of guiding questions to help you reflect and apply that learning. Because the learning brain and metacognition are separate, but interlocking concepts, this guide addresses them independently, so that we can drill down into their specific details. Participants also will be delighted to learn that most of the supporting resources are available online. While the video was filmed in an elementary school, teachers can use most of the supporting resources across all grade levels and subjects.

Why Are Clear Intent, Goal Setting, Planning, and Self-Monitoring Important?

With the aim of guiding students to become self-directed learners, teaching them to use clear intent, establish their own learning goals, and develop a plan to achieve those goals equips them with valuable and versatile skills for success in school and beyond. Examples of setting and achieving their personal goals—such as saving money to buy a bike or developing an athletic or artistic ability—serve as practical models for applying these skills to school assignments.

Self-monitoring is at the very core of metacognition. When we think back to the time that we were in school, we may recall getting off the bus, going to class, hearing a bell ring, and answering questions posted on the board. The nature of traditional schooling often requires that students follow many procedures and the teacher's directions. However, it is vital for students not only to follow directions and procedures and learn key content, but also to think effectively and to learn how to monitor their own learning in order to achieve the independence necessary as they progress through school and into careers and adult life.

In order to complete learning tasks, students must be able to self-monitor to ensure they are on track to finish successfully. They must know when and how to use metacognitive strategies, to assess the effectiveness of cognitive strategies, and to adjust when necessary.

Clear intent, goal setting, planning, and self-monitoring are four very powerful cognitive assets for helping students internalize the process so that they want to have ownership of their learning. Once the process is internalized, each project becomes a motivational experience that serves as a catalyst for completing the student's next effort. Through the years, we have found that effective teachers enjoy using this approach because they want their students to be highly motivated and ready to start the learning task and carry it through to completion. From an educator's point of view, Kelly Rose expresses in the video her excitement for teaching young children these important tools for learning: "you start to see the improvements that they make, and through their conversations they . . . start to use it on their own. . . . It totally transforms how you teach kids—how you have conversations with kids!"

A related asset is cognitive flexibility, the capacity to objectively assess learning challenges and to recognize when to adjust one's thinking and actions. This cognitive asset helps in a variety of situations, from solving "brain puzzles," where creative problem solving comes in handy, to taking high-stakes tests, where some problems may call for "out-of-the-box" thinking. Developing cognitive flexibility will benefit students in school and later in the workplace, which prizes the ability to innovate and to understand coworkers' and customers' points of view.



Tips for Guiding Students to Use Clear Intent, Goal Setting, Planning, and Self-Monitoring

When teaching students to become independent learners by discovering how to use clear intent, goal setting, planning, and self-monitoring, follow these important guidelines:

- When possible, give students a choice about what materials they read, what projects they delve into, and what content they learn, so they can set learning goals based on individual interests;
- Introduce each term, define it, and use it often;
- Begin with an explicit lesson that uses the cognitive asset;
- Notice students using the cognitive asset and recognize them;
- Use the “Explain It to Your Brain” strategy that Marcus discusses in the video to help students learn to self-monitor;
- Celebrate the power of incremental learning as an aspect of self-monitoring along the road to meeting a larger learning goal; and
- Lead discussions that encourage students to share examples of the use of these important cognitive assets across academic content areas and in contexts outside of school.

Supporting Resources

If you'd like to delve more deeply into the topic of the brain's GPS, check out the following materials:



Articles:

“Inspiring Progress Toward Learning Goals” shares ways teachers can help students to monitor their thinking by setting goals, applying strategies, reflecting, and adjusting.

<http://donnawilsonphd.blogspot.com/2017/05/inspiring-progress-toward-learning-goals.html>

“The Boss of My Brain” shares how students in elementary, middle, and secondary school are learning how to think smarter by using metacognition and important cognitive strategies that emphasize planning, study skills, stress management, and metacognitive reading.

<http://www.ascd.org/publications/educational-leadership/oct14/vol72/num02/%C2%A3>

The-Boss-of-My-Brain%C2%A3.aspx

“Smart Strategies for Student Success” describes five techniques to use with students of any age, in any class, to boost their long-term learning outcomes.

<http://donnawilsonphd.blogspot.com/2017/06/smarter-strategies-for-student-success.html>

“Helping Struggling Students Build a Growth Mindset” discusses how educators can assist students, particularly those with learning challenges, develop a growth mindset.

<http://donnawilsonphd.blogspot.com/2017/01/how-growth-mindset-can-help-struggling.html>



ASCD Book:

Chapters 4 & 6, Goal Setting and Planning for Learning and Strategies for Self-Monitoring and Learning with Peers, in *Teaching Students to Drive Their Brains: Metacognitive Strategies, Activities, and Lesson Ideas* (ASCD, 2016)

Guiding Questions

After watching the video, use the following questions to reflect on what you have learned:

1. Early in the lesson, teacher Kelly introduces the Drive Your Brain metaphor—reminding students that they are the bosses of their brains. Why do you think that that students should become aware of this concept through the teacher’s consistent reminders?
2. In the video, Kelly reinforces the language of metacognition within the natural flow of the read-aloud lesson. What is the three-step process Kelly sets up for teaching student a simple process for planning?
3. In the video, Kelly introduces the cognitive asset of clear intent in the context of her student’s goal to catch a pop fly in baseball. What does the narrator mean by the statement, “This is how the language of metacognition becomes familiar and the practice of metacognition becomes part of the daily routine”? In other words, how do you think whole class conversations like these help students to use metacognition daily? Why is important to amplify the students’ personal examples?
4. When students are explicitly taught how and why it is important to set learning goals, in what ways and to what extent might their academic achievement increase?
5. Can you think of examples from your classroom in which teaching students the four key cognitive assets might improve learning outcomes?
6. In the video, Kelly shares a lesson featuring the positive outcomes that result from a “plan-do-review” approach of evaluating progress and correcting course when executing a plan. She notes that in some cases, these course corrections may lead to exciting new directions and unexpected breakthroughs. In your lessons and curriculum, where can you incorporate useful instruction about the metacognitive approach to assessing learning progress and changing course?
7. In the video, teacher Brittany states, “I think fifth graders need to learn how to drive their brain . . . especially with reading.” Why is it important for readers to be metacognitive in order to be motivated to read, comprehend what they read, and read fluently?



8. Brittany says in the video, “So, in fifth grade, I teach all kinds of reading comprehension strategies, but I let them use whatever cognitive asset works for them, as long as they’re making meaning when they’re reading.” Because all content requires reading, what cognitive strategies did you teach your students prior to undertaking this study? Has that changed as a result of your study with us? If so, how?
9. Cognitive flexibility can be a difficult concept to understand and apply. What examples and “learning moments” in your lessons and curriculum—perhaps a favorite story or fictional character, historical or current event, or science story—might help illustrate the benefits of cognitive flexibility?
10. Brittany reminds us that learning to drive their brains is key for her students because “an important aspect of fifth grade is that students are going from learning how to read to reading to learn.” Keeping this in mind, why do you think being able to wield essential cognitive and metacognitive tools across contexts is crucial for students as they go into their tween-age years and beyond?
11. Which self-monitoring strategies presented in this video might immediately help your students improve their reading, writing, problem-solving skills, and social skills?
12. In education, we often talk about lifelong learning. What do you think of the narrator’s statement, “While they listen to a thoroughly enjoyable story, these first graders are also learning a process for goal setting and planning they can use for the rest of their lives”?

About the Authors

For more than two decades, Donna Wilson and Marcus Conyers—cofounders of BrainSMART, Inc. and the Center for Innovative Education and Prevention—have been pioneers in bridging brain science and cognitive psychology to educational practice.

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