



# ASCD Study Guide: Teaching Students to Drive Their Brains

The Selective Attention and Working Memory Advantage

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](http://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 Selective Attention and Working Memory Important?

The ability to focus one's attention on the task at hand is a fundamental aspect of self-regulatory behavior that can be enhanced through practice and useful strategies. Explicit instruction on selective attention can help students learn to become better listeners, to take the initiative on learning tasks, and to set a realistic pace for making steady progress on their learning goals.

The cognitive asset of working memory works hand in hand with selective attention. Emerging research from educational neuroscience suggests that working memory is a better predictor of school achievement than IQ, and that schools and teachers can help students enhance their working memory through explicit instruction and in the effective organization of classrooms and the daily learning schedule. Applying this research can have a significant impact on academic progress, especially for students with learning challenges.

### Tips for Guiding Students to Use Selective Attention and Working Memory

When teaching students to become independent learners by using selective attention and working memory, follow these important guidelines:

- Lead a discussion about the importance of focus;
- Help students identify when they have been focused and successful and provide examples of when they might have lacked focus;
- Introduce all terms, define them, and use them often;
- Begin with an explicit lesson that uses selective attention and working memory;
- Notice students using selective attention and working memory and recognize them; and
- Lead discussions that encourage students to share examples of the use of these two important cognitive assets (strategies) across academic content areas and in contexts outside of school.

In the video, we suggest the acronym CRAVE to remember five other strategies for keeping students' attention focused on learning and, thus, supporting them to increase their working memory:

- Build **curiosity** for learning with "teasers" that get students interested in a lesson.
- Look for ways to make lessons **relevant** to students' lives.
- **Ask** questions to engage students in learning and inquiry.
- Remember that **variety** is the spice of attention—a mix of learning activities helps keep students engaged.
- Evoke **emotions**. Just as emotions can distract, they can also enhance attention by making a lesson or learning activity more interesting.



## Supporting Resources

If you'd like to delve more deeply into the topic of selective attention, check out the following materials:



### Articles:

"Training the Brain to Listen: A Practical Strategy for Student Learning and Classroom Management" explains why it is important to teach students how to listen, provides information on the anatomy and psychology of listening, and shares the story of how a BrainSMART program graduate teaches the HEAR strategy in his classroom.

<http://donnawilsonphd.blogspot.com/2015/12/training-brain-to-listen-practical.html>

"Strategies for Getting and Keeping the Brain's Attention" discusses the importance of activating the correct neural network, recognizing how focus feels, adjusting the pace of your teaching, and more.

<http://donnawilsonphd.blogspot.com/2017/07/strategies-for-getting-and-keeping.html>

"Strategies for Students with Scattered Minds" offers tips on how students can strengthen their brain's executive function with "workouts" that let them practice pausing, prioritizing, improving their working memory, and mapping their options.

<http://donnawilsonphd.blogspot.com/2017/08/strategies-for-students-with-scattered.html>

*Ed Week*'s March 3, 2018, Classroom Q&A Response highlights Donna and Marcus's recommendations for using "Memory Scaping" as a long-term and working memory strategy linked to teaching social studies.

<http://donnawilsonphd.blogspot.com/2018/03/ed-weeks-classroom-q-response.html>

This *Ed Week* piece mentions this video in which Donna models a practical BrainSMART strategy that we developed to increase student engagement, learning, and memory in almost any content area.

[https://www.youtube.com/watch?v=lgg\\_j7re7qE&frags=pl%2Cwn](https://www.youtube.com/watch?v=lgg_j7re7qE&frags=pl%2Cwn)

"Putting Working Memory to Work in Learning" suggests tips for how teachers can strengthen students' conscious processing of information with techniques like repetition, gamification, visualization, emphasizing relevance, and peer teaching.

<http://donnawilsonphd.blogspot.com/2017/08/put-working-memory-to-work-in-learning.html>



### ASCD Book:

Chapter 5, Selective Attention and Working Memory, 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. What is the relationship of metacognition to the cognitive assets (strategies)? Why do students need to learn to effectively use metacognition as well as cognitive assets?
2. Why do you think we focus the discussion in this video on cognitive assets rather than cognitive deficits?
3. What are the four components of the HEAR strategy? How might you use the strategy to help students recognize and proactively block out “noise” from both internal and external sources as they listen? How might you incorporate teaching this strategy to emphasize the practice and benefits of active listening? What modifications, if any, would you make when you teach it in your classroom?
4. Why do you think HEAR would be a valuable strategy for students with challenges such as inattention, distractibility, hyperactivity, disorganization, and impulsivity?
5. It has been said that learning how to listen and use selective attention effectively supports higher student achievement and may also decrease classroom management issues. Do you think this is true, and if so, why?
6. What are the five elements of the CRAVE formula, and how might you incorporate these strategies into your lesson planning and delivery to help students focus and increase their attention and working memory capacity?
7. Which elements of CRAVE do you think are some of your teaching strengths? Which aspect of this strategy represents a potential weakness in your teaching? After watching the video and reading any relevant supporting materials, what knowledge and strategies might you try to increase your teaching effectiveness with CRAVE?
8. Taking the video and any supporting materials you reviewed into account, what ideas, lessons, and strategies might you want to use to increase student attention and working memory? Considering what you have discovered during this study, what might be most helpful as you seek to reach students with attention and working memory challenges?



## 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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