

8 Ways to Bolster Executive Function in Teens and Tweens

Middle and high school students suddenly face more complex schedules, tougher academic work, and an expanding network of friends. How can we help them manage it all?



By [Stephen Merrill](#)

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As a general rule, scientists like to define their terms before they commit to anything.

So when I begin a recent interview with the eminent psychology professors Angela Duckworth and Ethan Kross by promising to gloss over “easy questions about the brain’s executive functions,” I’m not surprised when they want to dig into the fundamentals.

“Actually, I think we should clarify what we mean,” Duckworth says. “I think the term originally comes from neuroscience, from an understanding of how the prefrontal cortex regulates lower-order areas of the brain, and I think there’s consensus that it involves working memory and response inhibition—turning down one part of the brain to turn up another. But the term is a little confusing because sometimes it just means ‘getting your act together.’”

Kross agrees. “Even among neuroscientists, there are probably eight different definitions of executive function,” he notes. “When thinking about kids in school, moving up one level to the question of self-control—which I define broadly as a person’s ability to align their thoughts, feelings, or behaviors with their goals—ends up being a lot more productive.”

While getting distractible teenagers to focus in school sounds great, especially to educators, the language of self-control can sound uncomfortably compliance-based. But the skills that make up the brain’s executive functions involve both cognitive and behavioral domains that are crucial to learning and self-realization—goal setting and long-term planning, for example—and “the connotation should really be one of autonomy and not compliance,” Duckworth contends.

“Everyone struggles with their impulses. Across cultures, and across the lifespan, self-control is usually the lowest or second-lowest self-reported capacity,” she says. “Who *hasn’t* struggled with the desire to procrastinate, or to eat unhealthy food?”

The problem of self-regulation is especially acute for teenagers, who are dramatically expanding their network of friends just as they’re besieged by new, complicated school schedules, increased academic

demands, and after-school obligations. It's a lot to keep track of, especially for novices. Still, there are plenty of evidence-based tools that teens and teachers can use to strengthen executive function, according to Kross and Duckworth.

We took some of their best insights, and pored over recent research, to find eight powerful, evidence-based strategies.

Talking Ourselves Into It

Talking to ourselves as a form of self-management starts when we're toddlers, and remains a fixture of our conscious efforts to exert self-control throughout our lives. "Initially, kids learn how to control themselves by repeating what their caretakers say to them out loud," Kross explains. Eventually, they progress to "silent inner speech" as they confront moral dilemmas, process sticky social situations, or prod themselves to rise to new challenges.

To help students manage stressful experiences like tests or arguments with friends, Kross says, we need to coach them in a variety of self-distancing strategies that allow them to "step outside themselves and broaden their perspectives." That can mean asking them to reconsider a pressing problem from the perspective of a friend—"what would your closest friend tell you?"—to helping them reframe and talk through an issue in "a more positive, challenge-oriented way."

Consider these strategies:

Recognize pressure points. Social and emotional safety and academic success are tightly linked—and at test time, a period of self-reflection might be as crucial to success as studying is. In 2019, for example, [researchers found](#) that when 9- to 13-year-old students took five minutes before a test and "silently spoke words of encouragement to themselves that were focused on effort," math scores improved.

Prompting this kind of inner speech shouldn't be confined to test-taking. A growing body of research suggests that giving students scheduled time to talk themselves through challenges like study habits, sporting events, or academic projects improves outcomes.

Have kids write about it. Writing activities appear to exercise the same muscles as internal monologues. A 2019 study that also focused on a helpful pre-exam activity—this time an "expressive writing" task—[concluded that when high schoolers wrote](#) for a mere 10 minutes about an upcoming test, reframing their anxiety as "a beneficial and energizing force," course failure rates plummeted.

Short writing prompts aimed at building social and emotional resilience also appear to benefit teens and tweens. In a [2019 study](#), 6th graders took part in a "belonging intervention" as they navigated the stressful transition to middle school. They read "typical quotes" from 7th graders who had overcome self-doubt and anxiety in their own middle school careers, then completed brief writing assignments responding to prompts like "name one or two reasons why a 6th grader like you might worry...about whether you fit in or belong at your school."

The results of this simple, highly replicable emotional processing exercise? Sixth graders concluded that there was "not something wrong with them," the [researchers reported](#)—paving the way for better grades, attendance, and behavior.

Empower peer advisors. Break students into groups to discuss preparation strategies for an upcoming test or presentation, for example, or ask them to write emails to peers (real or fictional!) about how to

manage their schedules. Unexpectedly, it's not just the receiver of the advice who benefits: [A 2019 study](#) of almost two thousand high schoolers, for example, concluded that teens who provide written guidance to peers about “optimal study locations and strategies” significantly improved *their own grades*.

When adults tell teenagers to put their phones on mute and hide them when studying, kids often disregard it. But when you ask teens to give advice to other teens, Duckworth explains, they say things like “put your phone on mute and hide it”—and are themselves convinced. The big takeaway: teens who dispense advice are often persuaded by it, probably because, as Kross confirms, “you’re actually wiser when you’re counseling someone else.”

Learning—Do It On Purpose

“It is either not possible or extremely difficult to tell a teenager what his or her purpose for learning should be,” [wrote a team of researchers](#) including David Yeager and Duckworth in 2014. In fact, they warned, “doing this could threaten autonomy, a key concern for adolescents.”

Instead, the study’s authors asked high school seniors to connect their learning to a higher purpose themselves. Students wrote solutions-oriented essays about an injustice “they found particularly egregious,” then submitted a brief testimonial to future students explaining how learning can make the world a better place. Separately, the same study assembled 9th graders to write about a “self-transcendent purpose” in their future careers, which had some freshmen casting themselves as stewards of the environment or geneticists tasked with increasing the world’s food supply.

Though it all took less than a single class period, students who connected learning to purpose improved their grades (particularly the low performers), attended and finished college at greater rates, and spent almost twice as much time on “boring but important” academic tasks—presumably because they looked forward to a future payoff.

To link learning and purpose, try these approaches:

Ask about interests and passions. It’s good practice to conduct beginning-of-the-year surveys about student passions, or to [engage in activities that might reveal student interests](#) early on. Some educators take “student inventories” (20 sentences that complete the prompt, “I am someone who...”), or assign “Laws of Life” essays (about the values and principles that govern a student’s life).

A teenager’s passion for music, politics, or the environment are points of leverage, enabling teachers to reframe assignments in ways the student finds compelling.

Pass the torch to the kids. Include regular exercises that get kids to connect their own learning to real-world outcomes. A [sample rubric](#) can be found on the Character Lab website—a nonprofit organization founded by Duckworth and two K-12 educators—but any approach that gets kids to regularly make connections will have value: journaling, a brief exercise after each unit which connects the learning to life, or researching and identifying interesting careers linked to ongoing schoolwork, for example.

Make time for (rigorous) projects. School can feel like a bubble, and teenagers “need better answers than something’s going to be on a standardized test” to feel engaged, Duckworth asserts. Good project-based learning (PBL) asks kids to articulate a real-world problem they’d like to solve, often in their own communities, and “wraps itself around” questions of student passion and agency, she says. A [2021 study](#), meanwhile, concluded that almost half of high school students in Advanced Placement

project-based learning courses passed their culminating tests, outperforming students in traditional classes.

Plan to Practice, Practice to Plan

When I ask Duckworth and Kross whether we should teach kids things like calendaring or making priority lists in the same way we teach traditional subjects, Duckworth nods but quickly adds a disclaimer: “Yes, I absolutely think educators should be teaching students how to make plans and to develop routines, but unless the student perceives that there’s a real need I don’t think it works very well.”

That’s a crucial insight. Self-control, Kross elaborates, actually has two parts: motivation and ability. “There are all these tools and hacks out there: self-distancing, perspective-broadening, calendars, other organizers, and that’s one piece of the puzzle. But you can have all the tools that exist—if a student isn’t motivated to use the tools they’re not going to achieve anything.”

The key lies in making things like calendars and long-term planning an integral part of your curriculum—a habit that’s indispensable to success—Duckworth asserts, so that the “skill or the habit will be rewarded” and students will be more “receptive and eager” to learn the skills.

Keep these tactics top of mind:

Scaffold scheduling, deadlines, and study habits. Model good scheduling and work habits by publishing—and regularly referring to—a master calendar with class assignments, due dates, and upcoming tests. To help students manage busy periods and complex assignments and projects, set up group discussions during which students break down upcoming work into priority lists.

Introduce your tech tools. You can [scaffold your tech tools](#), too, according to high school teacher Ian Kelleher. If you’re using an LMS like Google Classroom or Schoology, set aside class time for a “first assignment to help students learn the LMS fundamentals: how to view an assignment, how to submit and resubmit assignments, and how to access and use feedback,” he advises—and revisit the tools throughout the year.

That’s a lot of strategies—you can’t integrate all of them. In the end, though, if we’re going to teach executive function skills to teens as effectively as we teach traditional subject matter, we need to use the same fundamental principles of learning: retrieval, spaced practice, and frequent, low-stakes feedback.

Introducing a calendar once or twice during the year is not the same as integrating one into classroom routines, and a great gulf lies between assigning an essay that connects learning and purpose, and asking students to make those connections weekly. To get teens to start “aligning goals with behaviors,” in Kross’ words, we need to find ways to get them to practice, fail, and practice again.