GPS for the English Classroom

Understanding Executive Dysfunction in Secondary Students With Autism

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Imagine you are Bear Grylls (the "Man vs. Wild" adventurer on the Discovery Channel), and you have found yourself (once again) stranded in the wilderness. It's 15 degrees below freezing, you're wearing Bermuda shorts, and the only thing you have in your backpack is a bottle opener. Except you are not in fact Bear Grylls. You are you—an English teacher, a grammarian, a linguist, a book nerd. You have read novels about the wilderness and maybe even been camping. But even if you are the outdoorsy type, it is unlikely that you have the necessary skills to know which "bug burger" to eat for endurance. You need a survival guide, a manual of some sort, a map. Better yet, you need a Global Positioning System (GPS) to guide you to safety. Now assume this analogy holds true for a student with autism. Your English classroom is the Badlands, and your student has been abandoned—a GPS is needed, and you can help create one.

First Stop: Understanding Autism

Autism spectrum disorder (ASD) is the name given to a group of pervasive developmental disorders characterized by impairment in three core areas of function: language, social interactions, and behavior. Educators need to identify and integrate purposeful interventions in inclusive, general education classrooms for their students with "high-functioning autism"—frequently applied to people who demonstrate the three core deficits of ASD but show average or above average intellectual function.

This article identifies instructional strategies that capitalize on the cognitive strengths of students with ASD by exploring the executive-dysfunction theory of ASD (Hill, 2004; Ozonoff & Schetter, 2007). Here, we focus on the middle/secondary English classroom where students are often in inclusive settings with a general education teacher.

The Driving Issue: Executive Function

Let's look at executive function overall—as metacognition, the ability to think about one's thinking, followed by orchestration. This ability reflects the complex process of strategically planning and then using specific cognitive skills to carry out some set of thoughts or behaviors (Fernandez-Duque, Baird, & Posner, 2000). Some professionals have described executive function as the chief executive officer of the brain or the conductor of an orchestra (Brown, 2000). We like to think of it as the brain's complicated GPS instrument. Students with executive *dys*function may experience difficulty with memory, processing, attention, transitions, set-shifting, social behavior, self-monitoring, and modifying motor output and altering performance based on feedback (Cox, n.d.; see Table 1). For success in life, executive functions in multiple domains are critical in areas such as learning, social interactions, adapting to novel situations, and planning, as well as executing sets of behaviors. A lack of effective executive functioning may result in greater difficulty in the school environment.

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Seeing executive dysfunction as a hallmark feature of ASD is not new; however, attempting to directly intervene in underlying executive dysfunction is a new idea. Although there is a time and place for behavioral interventions for children with ASD, educators do this population of students a disservice if they ignore cognitive aspects of ASD. For example, new imaging technology has suggested frontal lobe involvement, both in ASD and in executive dysfunction (e.g., Ozonoff et al., 2004; Rudy, 2007). People with ASD demonstrate many executive function deficits that affect their ability to fully engage in a productive life (Hill, 2004). We need more investigations of variables that mediate or moderate executive function—and how to address them. For instance, there is evidence that anxiety has a negative effect on executive function (Airaksinen, Larsson, & Forsell, 2005); interestingly, people diagnosed with ASD show significantly elevated levels of anxiety (Thede & Coolidge, 2007). Perhaps by reducing students' anxiety in the classroom (e.g., not demanding eye contact or peer interaction, at least during instructional time), teachers can improve executive function in these students, or the students will be more responsive to instruction.

Alternative Routes: Executive *Dys*function in the Classroom

Educators have developed and implemented many instructional strategies to address the needs of students with ASD. One cognitive program specifically designed to remediate executive function is called "Learning the R.O.P.E.S. for Improved Executive Function" (Schetter, 2004). R.O.P.E.S. is an acronym representing Recall, Organization and planning, Prioritizing and goals setting, Evaluation and critical thinking skills, and Self-management. The R.O.P.E.S. program relies on graphic organizers to represent sequential thoughts, elucidate patterns, illustrate problem-solving strategies, and model flexible adaptation. This cognitive remediation strategy assumes that the visual nature of the program taps into the visual strengths often noted in people with ASD, providing them with a pictorial representation of steps and skills they need to perform.

Another strategy to consider seeks to reduce the demands on the executive-functioning process. For example, McCloskey (2008) noted that much classroom *assessment*, especially in the upper grades in which long-term projects and complex question forms are more common, frequently places high demands on the executive-functioning system. This higher demand on executive functioning is especially true in the

Table 1. Selected Executive Functions and Possible Signs of Dysfunction

Executive Function	Definition	Possible Signs of Dysfunction
Emotional control	Regulates emotional responses to be appropriate to situation	May exhibit inappropriate responses; may become easily upset or excited
Goal setting	Identifies and sets goals	May be unable to create realistic goals or fail to see value of goal setting
Inhibit	Does not act on impulse; appropriately delays certain activities for the sake of others	May appear distractible or impulsive; may not be able to delay gratification; may act without thinking
Initiate	Begins a task or activity	May have trouble getting started on tasks; may be inaccurately construed as oppositional or defiant
Organize	Establishes and maintains order of a place or activity	May have scattered, disorganized approach to storing materials, solving problems, or completing tasks
Plan	Identifies required steps to achieve predetermined future events or tasks; appropriately sequences steps	May start work at the last minute; may fail to anticipate consequences
Self-monitor	Periodically assesses actions during a task to check on progress toward goal or assess effect of self on others	May be unaware of the effect of own self on othe[r] may not check work for errors
Shift	Transitions from one task to another quickly and smoothly and adjusts as necessary	May have difficulty coping with unforeseen chang[e] of routine; may have difficulty transitioning from one activity or task to the next

Source: Adapted from *Overview of Executive Dysfunction* by Leslie E. Packer (1998). Retrieved from http://www.schoolbehavior.com/index.php?s=Functions+and+signs+of+dysfunction. Adapted with permission of the author.

secondary English classroom, where classical texts and universal themes naturally lend themselves to higher-level thinking and complex projects. McCloskey recommended that the following instructional practices be a regular component of classroom instruction for students with ASD:

- State the goals of the learning process.
- Provide cues about the process (not the product).
- Model metacognitive processes to students through the think-aloud process.
- Provide feedback on the student's process (again, not the product).

An important concept underlying McCloskey's approach is the proper framing of executive behavior as "can't" problems, indicating skills that can be learned, rather than "won't" problems, indicating negative behavior or personal characteristics, such as laziness or defiance. This reframing of the intent of the behavior of students with ASD will lead to a better understanding of the nature of the issues and related interventions in the classroom.

A third instructional strategy that many educators use with students with ASD is a program called TEACCH (Treatment and Education of Autistic and Communication related handicapped CHildren, 2007). This approach is based on the principles of Structured Teaching, an interventional approach predicated on a deep understanding of the characteristic emotional, cognitive (including processing), social, communicative, and behavioral features of many students with ASD. Though this person-centered approach does seek to promote skill development, the program also focuses on the fulfillment of fundamental human needs, including dignity, self-efficacy, self-confidence, and independence (Callahan, Shukl[a] Mehta, Magee, & Wie, 2010). The pr[in]ciples of Structured Teaching, which provides visual information and org[ani]zational supports, can be used in an educational setting, including gener[al] education classrooms.

You Have Arrived at Your Destination: The English Classroom

To get your bearings, let's consider [a] middle/secondary English classroom. Content-based curriculum can often [be] a struggle for a student with execut[ive] dysfunction skills. The subject itsel[f is] language based, which is one of the core deficits characteristic of ASD. [Fur]ther, students are expected to plan [and] organize essays, to process abstract ideas, to use figurative language, to work collaboratively, to differentiat[e] main ideas from supporting ones, a[nd] to perform other complex tasks.

For the student with ASD to succeed, the classroom teacher should consider the type of supports needed for students with executive dysfunction. Of course, these tools are critical for students with ASD, but can also support other students struggling with content-based instruction. These examples come from the secondary English classroom. The intent is to make one's classroom less taxing for students with ASD and to assist with their executive functioning.

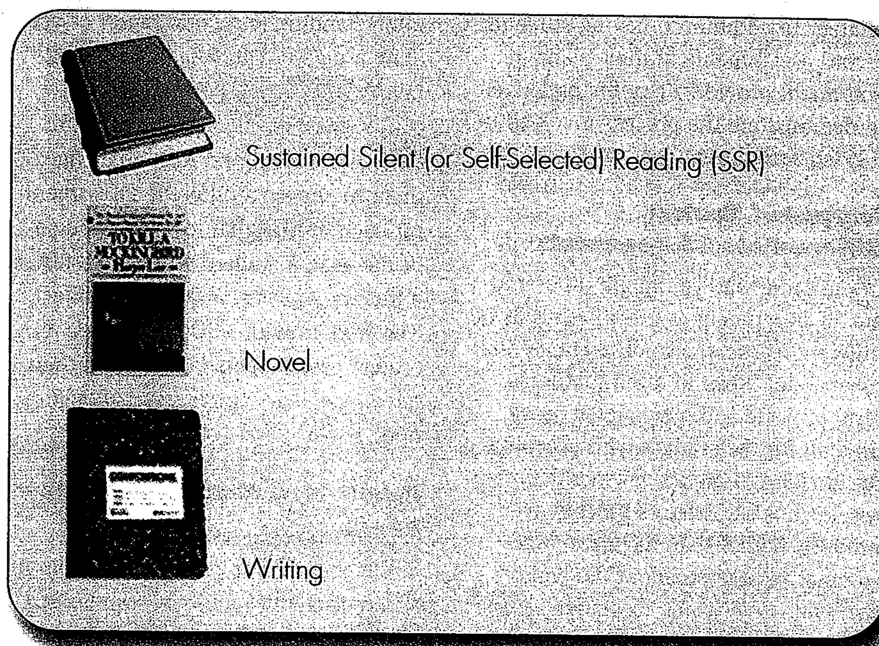
The Path of Least Resistance: Routines and Organization

Structuring one's environment is critical for students, especially students with ASD who thrive on routines and often lack organizational skills. Preplanning or knowing what you are going to do and when is critical. Make that plan obvious to students. Use pictures whenever possible, designating a spot in your classroom for the day's visual schedule. For example, photocopy the jacket of the primary text students are reading, a composition notebook, or research folder. Then, on a vertical schedule, post these images so that students can take a quick glance to see the schedule and the three or four corresponding pictures indicating the major chunks of the day's lesson (see Figure 1).

Ideally, try to have minimal variation in this plan daily. If you have a vocabulary unit, for example, try to keep it at the same time of every class meeting (e.g., always as a closing activity). Although you may strive for creativity (and, often, this is a great attribute), "creativity" due to lack of planning (e.g., "I just thought of this on my way to work!") can be disastrous for a student with ASD. If you have a great idea, sit on it for a day or two and think of ways to incorporate it into the existing schedule. In addition to the visual schedule, provide more detailed (but still limited) information on the Smart Board (or an overhead projector) that provides a scope of how today's lesson fits into the sequence of events (See Figure 2).

Providing this information will allow students to orient themselves to

Figure 1. Pictorial Schedule



the day's task and assist in goal-setting and planning for activities to come. It will also help students organize and prioritize major assignments from smaller ones.

Detours and U-Turns: Transitions

Students with executive dysfunction often struggle with attention and transitions. Therefore, a student with ASD may be easily distracted and not tuned in to transition time. As you transition from one activity to the next, attempt to search for external signals (e.g., ringing a bell, turning the lights off then on again, pointing to the schedule) to inform students that a transition is occurring. Further, transitions often result in elevated anxiety for many students with ASD. Thus, to decrease anxiety, work with your student with ASD to develop a clear "warning system" of impending transitions—perhaps a cue of three fingers on the student's desk as you walk by, then two, then one. A system like this lets the student know that there are 3 minutes until the transition, now 2, and now 1. Giving the student the simple gift of *time* to shift their cognitive set from one task to another can be an extremely useful accommodation for a student with ASD. Regardless of the approach, be purposeful with the intervention and, thus, plan for the specific need of the student with ASD. Employing a generic transition tool is often not enough for the needs of the student with ASD.

Roadmaps: Graphic Organizers

Make use of graphic organizers whenever possible. Do not limit the use of some type of organizer simply to the prewriting process of creating an essay. Consider using graphic organizers as mind maps to help students organize information, such as the relationship of characters in a novel or even a graphic of the week's or

Consider using graphic organizers as mind maps to help students organize information, such as the relationship of characters in a novel or a graphic of the week's or month's activities.

month's activities and how they are related. In addition to having students record assignments in their planners, you might provide a graphic organizer to demonstrate the process involved in a given assignment.

Suggested Routes: Differentiated Assessments

In the same way you might differentiate an assignment to meet the needs of different learners, also differentiate the assessment. Keep in mind that long-term projects and papers may prove difficult for the student with executive dysfunction; therefore, ensure that your assessment emphasizes process over product. Rather than having a large summative assessment at the end of the unit, use ongoing formative assessments or consider asking your student with ASD to keep a portfolio or learning journal for a test or project grade. Do the same for longer essays. Use continual formative assessments to assign points for each part of the writing process.

Stay focused on the big ideas of any given unit. What is the "take away" you want students to know? What are the essential questions? If you are teaching *The Odyssey,* you may have several big ideas you want students to grasp (e.g., hubris, journey to self, loyalty, temptation, cultural norms). A student with ASD may struggle with abstract ideas, such as excessive pride; so be open to alternative ways of allowing the student to demonstrate understanding (e.g., oral report or creating a map of Odysseus's pride "pitfalls").

Provide students with options for each assessment and then challenge them to choose a different assessment for each unit so that, over the course of the year, a student will have a test, a literary analysis, a skit, or a project. The student with ASD can choose "safer" assessments initially and then have models for the more challenging ones.

Navigation: Model Think-Alouds

Remember to emphasize the process of various activities and not assume that all students will have the tools necessary for thinking through the various steps involved. For example, if you're stressing that students should look for context clues when confronting an unfamiliar word, you may want to model what that sounds like in your own head, showing them how to think aloud:

> *Hmmm . . . I'm not familiar with this word. I'm going to stop here and look both ways before proceeding. First, I'll re-read the sentence that comes before, and then I'll look ahead and read the next two sentences. Okay, now I think I know what it means.*

If you are using a graphic organizer a prewriting activity, model a think-aloud as you draw the organizer.

> *I'm going to start with some bubbles because I'm not sure how these are all connected. I want to write about the theme "coming of age," and there are three kids in this book. Maybe I'll write each of their names and then brainstorm the lessons they learned that helped them grow up. Each kid could be the subject of a body paragraph.*

Meanwhile, draw a web that illustra your thinking.

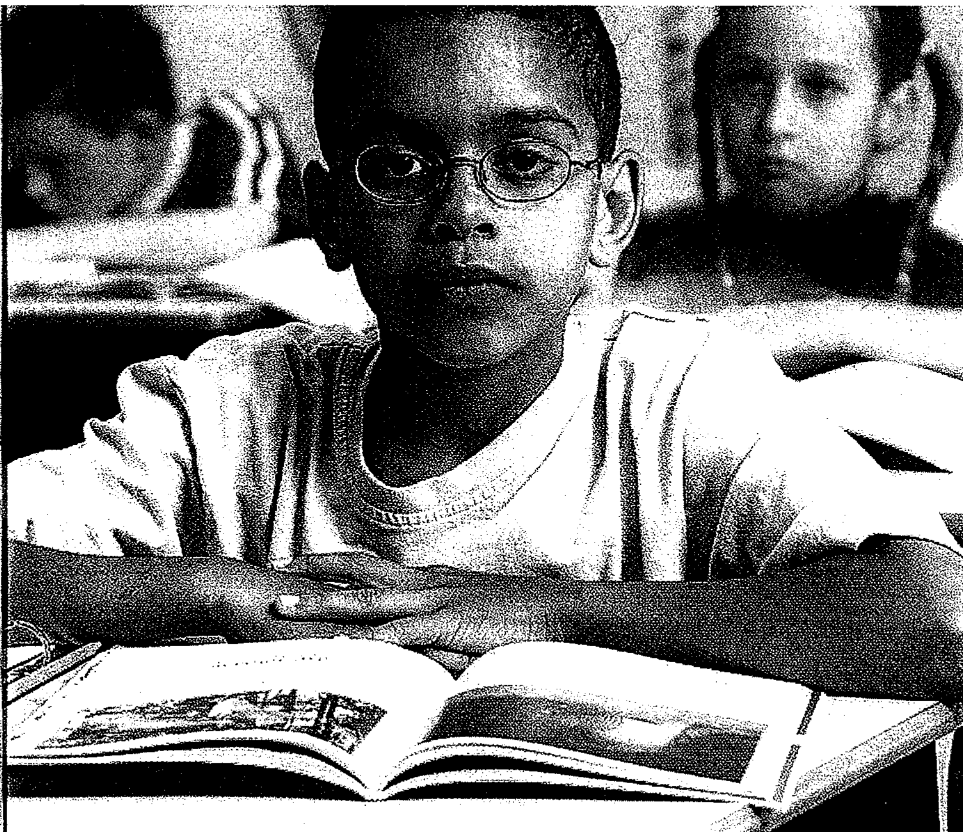
Calm Behind the Wheel: Reducing Anxiety

Finally, bear in mind that students with executive dysfunction may not have the skills necessary to deal wit the myriad stimuli in the hallways a in your classroom, e.g., the crowds the hallway, the cafeteria noise, the buzzing of the fluorescent lights, th bubbling of a fish tank, the unexpe announcement on the intercom, the looming threat and unnerving soun the fire alarm. For many students, these examples comprise the "stuff" school on any given day. For your s dent with ASD, however, dealing wi these potential anxiety-producing tri gers can be a daily challenge.

We recognize that the classroom teacher cannot control the noise lev

Figure 2. Organizer Showing Scope and Sequence of Learning Activities

Activity	Yesterday	Today	Tomorrow	Next Week
1	SSR	SSR	[Formative assessment] Journal Prompt	SSR (choose new bool
2	[Display book jacket] *To Kill a Mockingbird,* Chapter 4	[Display book jacket] *To Kill a Mockingbird,* Chapter 4 (continued)	[Display book jacket] *To Kill a Mockingbird,* Chapter 5	[Display book jacket] *To Kill a Mockingbirc* Chapter 5 (continued
3	[Assessment] Complete graphic organizer	[Focus on process] Write introductory paragraph	[Focus on process] Write first body paragraph	[Focus on process] First rough draft complete



in the hallway or the frequency of fire drills; however, the classroom teacher can create a predictable haven for the student with ASD. Cultivate awareness in all your students that many people become anxious due to unexpected noises or events. Show empathy if a student with ASD becomes anxious by providing a quiet place to regroup. Not only will you be respecting your student with ASD, but you will also be modeling empathy for all students.

Trip Highlights

It is our hope that the information on how students with ASD can become lost in the wilderness of the general education classroom, as well as the instructional strategies described to help them find their way, provides practical ideas you can use in your classroom immediately. Certainly we can get around without a GPS. Long before such technology existed, travelers survived along many routes with only simple maps. But just as the landscape of cartography is changing, so it is for students with ASD. As a result, teachers can better serve this growing and yet often underserved population by using advanced navigational tools to pave the way on what might otherwise seem like a treacherous path without clear directions.

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