

Strategies

The range of strategies discussed in this section are all designed to build the organizational, planning, and study skills of students with executive function weaknesses. If taught explicitly and implemented with integrity over time, these methods are likely to engender feelings of greater academic mastery and control in students whose neurodevelopmental profiles make it difficult for them to generate and follow organizational systems.

Workspace and Materials Organization

Many students struggle at times with keeping their things and work areas neat, to various degrees. Most parents and teachers accept this basic fact of life, and therefore establish designated areas and related systems to help children keep track of the numerous items needed for academics. For many students with executive function weaknesses, however, the process of maintaining functional workspaces and possession of even the most essential learning materials is a daily exercise of frustration that defies the most tightly structured organizational systems. Books, pencils, folders, and even entire backpacks can be lost, found (or more typically, replaced), and lost again in a matter days (or sometimes, hours or minutes), leaving the student (or often, the student's caregivers) in a constant state of worry over whether the needed items will be in place when work needs to be done.

Although no system or method can guarantee elimination of the calamitous workspace clutter and Dumpster-like backpacks that drag down the productivity of students with executive function challenges, the following strategies—if consistently implemented—may result in fewer frantic searches for needed items as deadlines loom.

Dedicate a Homework Space

Parents should be encouraged to establish one (and only one) homework space and to design a materials management system for the space, which can increase the chances of it remaining generally neat and free of clutter. Just as too many cooks spoil the broth, too many home-based workspaces destroy organizational systems and homework productivity. If students are allowed to do their homework across a range of settings (e.g., bedroom, kitchen table, family room, sibling's room), the likelihood of essential materials being misplaced and/or destroyed increases exponentially.

Students with executive function weaknesses should have one clearly designated workspace in the home, with simple materials organization systems developed and consistently followed regarding its use. Whether it is the bedroom desk or the kitchen table, the child should be required to *always* do homework in this designated space and—most importantly—keep all academic supplies in their designated places in the workspace. If a child's workspace is the kitchen table, the materials can be kept in carefully marked plastic tubs or shoeboxes that are stored nearby and returned to the same location every evening when homework is completed.

Because students with executive function struggles are often easily distracted by extraneous stimuli, every effort should be made early in the school

year to habituate them to the use of the materials organization and storage systems. For example, it should not be okay for pens to be left strewn across the desktop after homework has been completed, or the glue stick lent to a younger sibling for a play activity. If students with executive skill difficulties are to develop effective habits of materials management, then adults have to be prepared to strictly enforce the organizational systems put in place in the home at the start of the school year regarding homework.

Encourage Parents to Supervise

As stated, it is essential for students with executive function weakness to have clearcut materials organization systems across home and school settings. However, as Dawson and Guare (2004) noted, the problems that these students have regarding the day-to-day organization of essential school supplies and the ability to get important papers back and forth to school often relates to a lack of adult supervision:

Mom: Jeremy, I don't know what else to do! Your father and I have bought you this expensive desk with a computer stand and put every single school supply you needed inside of it in labeled boxes, and still you've lost nearly everything in only a few days! It's amazing! How do you do it?

Jeremy: I don't know. I use the stuff and I guess I mean to put it back where it goes, but then something happens and I forget and then I can't find it again.

Here, we return once again to the concept of the surrogate frontal lobe. Because students with executive skill challenges may struggle with following even the most meticulously crafted organizational systems, systems and strategies alone will not solve the problem. Instead, parents and teachers of these children need to be prepared to provide the levels of individualized supervision of organizational strategy use needed for habituation to occur. Thus, before a homework session begins, a parent should directly supervise the child's retrieval and return of needed materials to their designated places.

Dad: Okay, Michael. Really nice job on your math homework today. I particularly liked the way you checked all your answers before you showed them to me. Now, let's go up to your room and you're going to show me . . . what?"

Michael (sighing): How I put everything back where it goes. Yeah, I know, I know

The same principle of materials organization management should apply in the classroom, to the extent to which teachers' case loads and the immutable laws of physics allow. If a child has substantial materials organization needs, it is incumbent upon school personnel to provide the student with both the organizational systems and individualized support needed to run the systems on a daily basis. Rather than just designing and teaching students the organizational strategies to be used in a given class, therefore, the teacher should directly monitor the implementation of the system by those students whose neurodevelopmental profiles make them in need of such overseeing. No child should be allowed to have a desk, locker, or backpack that is excessively messy. When this occurs, it is because the child's organizational needs

are poorly aligned to the materials management and supervision systems used in a classroom.

Use Checklists and Inspections

Students and teachers should use a daily school-to-home checklist, then inspect the backpack to make sure all needed materials are onboard before a student leaves school.

“I forgot my _____ at school” is the phrase that can almost certainly cause eye twitch in the parents of students with executive function challenges. Without the needed item(s), some key bit of homework or studying cannot be done, resulting in the usual family havoc wrought by a mad dash back to the school before it is locked up tight for the night. Among the strategies that can be most helpful in avoiding this stressful state of affairs is the consistent (and supervised) use of a daily school-to-home checklist.

The checklist provided in Appendix 9.1 focuses exclusively on the materials that need to make it into the backpack before the child leaves the classroom, and should be completed by the student in the first several weeks of use under the direct supervision of a classroom staff member. Once a youngster demonstrates sufficient mastery of the form in this supervised setting, responsibility for its use can be gradually released from the teacher in the form of once- or twice-weekly spot checks. Ideally, parents or caregivers should review the form (as well as assignments) every afternoon as soon as the student walks in the door to provide clear oversight of the system on the receiving end.

Daily Homework

In addition to homework difficulties associated with hopelessly cluttered workspaces, lost materials, and essential academic items left at school, the homework completion problems of students with executive function weakness are often associated with the following:

- Forgotten or only partially recalled assignment directions (e.g., “Oh my gosh! Mom, I know it’s already past my bedtime and all, but I just remembered that we’re supposed to write a book reflection for Language Arts tomorrow!”)
- Poor prioritization of homework tasks and time (e.g., “Martin, do you mean to tell me you just spent over an hour cruising around the Internet looking for a picture for the cover of your report, rather than getting started on the writing? Isn’t this whole thing due tomorrow?”)
- Weak task persistence (e.g., “Melissa, you’ve still only gotten 2 of the 20 problems done! That’s where you were a half-hour ago. What have you been doing up here?”)
- Fatigue (e.g., “I’m so wiped right now, Mom, that there’s no way I can even think about getting all this done. I’m totally fried, so please don’t push me.”)

Given the array of factors that can impede the homework productivity of students with executive struggles, it is not surprising that a lack of homework completion is the primary cause of their often problematic grades. Even

if these students possess the intellectual might to do well on tests without studying much and have sufficient wherewithal (or teacher support) to get in-class assignments done, their quarter and semester grades are often well below their presumed ability levels because of late or missing homework assignments. Although there are clearly no quick fixes to the homework production problems of most students with executive needs, the following strategies may help them to get assignments done and turned in on time.

Less Is More

Homework undoubtedly serves a number of important purposes with regard to the building of students' academic skills and work habits. It is equally true, however, that homework assignments that are poorly aligned to students' learning profiles tend to cause more harm than good (e.g., poor grades related to missing or incomplete work, family stress/havoc, skipped classes). To develop productive homework assignments for students with executive function weaknesses, teachers must bear in mind the cognitive/emotional fatigue levels these students tend to experience relative to peer norms by the end of the average school day. Their tendencies to view academic molehills as mountains also bears serious consideration, as do their difficulties with managing homework tasks and time in the context of the usual array of after-school activities in which children are generally involved. Therefore, teachers should be highly selective in framing homework requirements for students with executive function difficulties. The well-worn phrase *less is more* definitely applies here.

Because executive deficits tend to particularly impact academic tasks that have strong output requirements, it is often helpful to cut back on the production aspects of homework assignments. For example, teachers can emphasize reading and note-review tasks over activities that stress narrative writing and the self-directed organization of numerous details into new ideas. When considering specific modifications of homework for students with executive needs, the teacher should focus on the instructional intent of assignment given to the larger class. Often, the intent (i.e., the core instructional objective) can be effectively achieved by students with executive function weaknesses, even with the production demands ratcheted down quite a bit.

Establish Consistent Schedules and Routines

Among the best ways of getting anyone to do anything in a consistent, productive manner is to establish a consistent schedule for the activity. When things happen at the same time and for about the same duration every day, our bodies and brains become accustomed to the mustering and spending of cognitive energy during these periods. A random homework schedule is generally more difficult for students to accommodate to, often leading to distractibility, avoidance, and fatigue. Although the nature of many students' after-school activities schedule tends to confound parents' attempts at structuring homework around consistent times, it is still essential for children with executive weaknesses to have regularly scheduled homework periods that should be used for reading, personal journal writing, or some other quiet, cognitive activity on those days in which no homework has been assigned.

Use Highly Structured and Signed Assignment Books

They are known by many different names—assignment books, agenda books, daily homework planners, assignment sheets—but most teachers know them well, regardless of their label and style. When used as intended, these tools have many benefits, including the building of a student’s organization, time management, memory, and work completion skills. Given their explicit focus on executive function enhancement, one would expect these books and sheets to go a long way toward reducing the impact of executive function weakness on academic learning and production. However, assignment books are like parachutes and minds—they only work when open. Far too many children with executive function weaknesses use them as little more than backpack ballast:

Mom: Tim, do you have any homework tonight? Remember, you told us you’d start doing a better job keeping on top it.

Tim: Nope . . . Well, at least I don’t think I do.

Mom (sighing): Where’s your assignment book? Let’s give it a look.

Tim: It might be in my backpack, but I think I left in my locker. Wait, maybe it’s in the car. I haven’t written anything in it for the last few days, so it’s probably not going to help much anyway.

For assignment books to actually help children with executive function weaknesses, their use has to be highly structured and supervised on daily basis. Student compliance often jumps markedly when systems are in place to ensure that the teacher initials the books every day at school (vetting the accuracy of what has been written down) and a parent initials the books at home (acknowledging receipt and review of what has been written down). These compliance monitoring systems across home and school settings tend to work best if required of all students, but can still be effective if implemented consistently for only students with significant executive function weaknesses.

Just as important as daily school and home supervision of assignment book use is explicit teacher direction of what to write down. Even at the middle and high school levels, it tends to be far more helpful to students with executive skill deficits to have school staff tell them exactly what to write in assignment recording tools rather than asking them to rely too much on their own summarization of assignment details. If students with executive function needs are required to develop their own assignment book statements, it is essential that the teacher check them before the school day ends to ensure the accuracy/completeness of what has been recorded.

The structure of the assignment book can also matter a great deal. Although there is often strong temptation on the part of educators and school-based clinicians to include numerous elements into these forms (e.g., self-reinforcement plans, break schedules), one must remember that many students with executive function weaknesses are significantly adverse to writing tasks and are therefore apt to resist daily homework recording systems that involve a lot of writing. An example of a daily homework sheet and assignment book model is presented in Appendix 9.2. In addition to the usual assignment recording spaces, the forms on pages 1 and 2 include sections in which the student indicates the school materials (e.g., textbooks, notebooks) that must

be taken home for each assignment. The places for parent and teacher initials are also clearly indicated.

Time Management and Project Planning

Among the clichés about students with executive function weaknesses is that they often wait until the lamentable “last minute” before getting to work on larger assignments. Like many clichés, this one has some basis in logic and fact. Because so many executive skills are needed to manage the time and planning aspects of research papers and class presentations, a variety of problematic executive function profiles can contribute to projects being put off until the due date is just around the corner and panic/chaos ensues.

Although problems developing and following an organizational schema for projects are a major cause of their avoidance for lengthy periods, a contributing factor to the last-minute panic-and-scramble approach exhibited by lots of students with executive function weaknesses is what some psychologists refer to as *limited temporal sense*—that is, difficulty sensing with the accuracy of most peers the passing of time and/or predicting the amount of time different tasks will require. Some research, including a study by Barkley, Edwards, Laneri, Fletcher, and Metevia (2001), has shown that students with attentional and working memory difficulties can exhibit temporal sense difficulties relative to developmental norms. I have observed this limited sense of time in individuals with executive function challenges on many occasions over the years and have noted in particular its impact on project planning and completion. The phenomenon most often takes the form of significant underestimation of the time needed to complete larger academic tasks, as well as genuine surprise that a project’s due date or a scheduled test is far closer than expected.

Given the impact that temporal sense limitations have on project completion, it is important for interventions targeting longer-term assignments for students with executive dysfunction to address time-management difficulties in addition to planning struggles. Here are a few project-level strategy recommendations to improve functioning across both of these domains.

Limit or Carefully Structure Topic Choices

As was discussed in Chapter 1, the ability to make decisions is an executive skill. When faced with a potentially endless series of topics for a research paper or construction project, many students with executive needs become so bogged down in the decision-making process that several days or even sometimes weeks go by before they are able to choose the one on which they will focus. To minimize the time and energy these students devote to topic selection, it is almost always helpful to either limit the topic choices available to them (e.g., “You must do your biography paper on one of these three people”) or carefully structure/support the topic selection process so that it does not stymie them from moving on to subsequent project elements.

Turn Potential Mountains into a Series of Molehills

Students with executive function weaknesses may see tasks as insurmountable obstacles when most peers view them as essentially manageable. Therefore,

these students are apt to be overwhelmed by long-term project demands. When a child's neurodevelopmental profile includes both limited academic coping skills and the tendency to view manageable tasks as unmanageable, the likelihood of project abandonment increases. To keep students with this package of self-regulatory struggles engaged in larger assignments, it is essential to keep their task-related frustration and anxiety to a minimum as they move through the work. The best way to do this is to structure the assignment steps in such a way that each element is experienced as small and doable. This method allows the student to keep checking steps off as completed and, in so doing, to build a sense of project mastery (e.g., "Hey, I thought this research paper was going to be horrible, but I'm already halfway done. Maybe I'll get this finished on time after all").

Be Specific About Project Steps and Deadlines

To mitigate the impact of limited temporal sense on project organization and completion, teachers can take the time-management aspects of longer-term assignments out of students' hands. Rather than issuing somewhat vague spoken reminders about where students should be in the project process (e.g., "And don't forget to keep working on your Africa projects. I hope everyone has the materials together by now and is starting to put together the question-and-answer note cards we talked about last week"), it is far more helpful for students with executive needs to be given very specific project-step instructions linked to specific deadlines. The teacher might say, "Michael, the note-card step of the Africa project should take you about a week. That's it. To make sure you're making good progress, though, let's get started on it today, you and me, during independent work time at the end of the period. Then I want you to bring me five more completed note cards on your topic this Wednesday and five more the following Monday. Come on, let's get that written down in your assignment book. I'll also send your Mom a quick e-mail to let her know the plan."

Provide Lots of Individualized Project Coaching

Recall Martha Denckla's statement that the phrase *on your own* is a death knell to students with executive function deficits (Saltus, 2003). Although it is clearly essential that teachers work to build these students' independent planning, organization, and task completion skills, the least effective way of doing so is to simply insist they do longer-term projects at the same level of independence as most classmates (e.g., "He's got to learn to do these things on his own—he won't always have us to prop him up"). However, when students with executive function weaknesses are compelled to complete large-scale projects with the levels of individualized support provided to all classmates, their neurodevelopmental profiles are often not equipped to manage the resulting task demands.

Teacher: Claudia, why aren't you working on your Maine history project like everyone else? Remember, whatever you don't finish on today's part in school you'll have to do at home.

Claudia (whining): I need help. You won't help me, and I don't really know what to do right now.

Teacher: I guess I don't understand why you're so confused. We had your topic and planning conference yesterday, right? And even though you got upset I thought we set you up with a good plan. Why aren't you following the plan?

Claudia (whining louder): I don't remember and we didn't write it down! This whole thing is stupid, anyway. I don't think I'm doing it.

Complete a Structured Project Planning Form

The most practical way of developing the executive skills of all students is to build executive function teaching and practice right into the regular curriculum. Teaching methods that target the needs of students with executive struggles end up improving the project planning and time management skills of all students. Project planning forms, such as the one on provided in Appendix 9.3, can be helpful ways of ensuring that everyone in a class is making reasonable and timely progress toward the completion of long-term assignments. Adapted from a form developed by Dawson and Guare (2004), this planning sheet is meant to be completed by students at the onset of long-term projects to structure the topic selection, materials gathering, and other steps of the assignment completion process. This version of the form also requires frequent contact between the teacher and students to increase the likelihood that children with executive function weaknesses demonstrate their progress on a regular basis and receive the coaching they need as they move from step to step.

Notetaking

The importance of effective notetaking to the learning process, particularly at the secondary and college level, is beyond dispute. Because so much of the important information students learn in school is taught directly by instructors and because most people do not have the memory skill to hold in long-term retention everything of importance that is said in the classroom, notetaking skills are essential to the accurate storage of information needed for tests and projects. Notetaking has the added benefit of teaching students how to summarize and organize information, as well as how to distinguish major ideas from unimportant details.

Some students, because of their strong executive capacities, pick up notetaking skills fairly easily, even in the absence of much formal instruction on technique. These students' minds are able to perceive the organizational structure of a teacher's presentation and accurately represent it in summarized form in their notes. Because of the difficulties many youngsters with executive function weaknesses have with recognizing organizational patterns and saliency determination (i.e., teasing out what is more important from what is less important), they may have a hard time producing effective notes when listening to lectures or reading texts. Purposeful attention and working memory weaknesses can also greatly confound the note-taking process, as these executive struggles tend limit students' ability to hold information online in consciousness while simultaneously transcribing it in summarized form.

Although commonly used classroom accommodations such as the photocopying of the teacher's or classmates' notes do get effective notes into the hands of students who struggle with notetaking, this bypass strategy does little to build the note-taking skills of students with executive function challenges. It is possible to teach productive notetaking to students whose neurodevelopmental profiles tend to inhibit the independent development of this essential learning skill. To do so, however, requires a substantial amount of teacher-directed instruction, explicit modeling, and the use of structured note-taking templates. These intervention principles are discussed more detail in the following sections.

Explicitly Model Notetaking

Probably the best note-taking instruction I have ever witnessed for students with executive function weaknesses was in a ninth-grade Western Civilization class. Because of the rather heterogeneous nature of the academic and executive skill sets among the students in the class, the teacher determined early in the year that the only way she could ensure that all students took effective notes on the content she was teaching was to model the notes she wanted them to take on an overhead projector (as part of her teaching). As I sat in the back of her classroom, observing a student with Asperger syndrome, I saw this highly effective instructional strategy in action and how it benefited even the students whose executive needs tended to make them rather poor notetakers in other classes.

After presenting some specific bit of information and then opening it up to class discussion, the teacher would summarize the essential learning points on the transparencies on the projector while telling the group the reasons for the phrases/keywords chosen for inclusion in the notes. She also paused the discussion every several minutes, directed the students to copy what was on the projector into their notebooks, and then wandered the room to ensure that everyone was doing as instructed. By explicitly teaching note-taking as part of a discussion of key elements of the Roman political structure, this skilled teacher not only achieved essential learning objectives, but also taught her varied group how to summarize and organize the key information from the discussion on paper.

Use Note-Taking Templates

Studies have demonstrated that improved academic performance tends to result from the use of structured note-taking templates (Meltzer et al., 2007). These findings are not surprising when one considers that teacher-developed templates ensure that information conveyed/discussed in class or obtained from other sources, such as textbooks or web sites, is organized for students in ways that are easiest to understand and apply. In the absence of note-taking templates or explicit note-taking modeling of the type discussed previously, students must summarize information on paper on their own, using whatever organization schemes occur to them in the moment—a cognitive demand that commonly overwhelms students with significant executive needs. The best note-taking templates are those that not only make plain the most effective means of organizing information, but are also structured in such a way so that key information is recorded in a format that will ease its recall during upcoming tests and assignments. The following two formats, if ex-

**TWO-COLUMN (QUESTION/ANSWER)
NOTE-TAKING TEMPLATE**

Questions	Answers
<p>What were the main causes of the American Civil War?</p>	<ul style="list-style-type: none"> • Slavery in the south: the south's agrarian economy was dependent upon the widespread availability of slave labor. A threat to the institution of slavery, therefore, was viewed by southerners as a threat to their livelihoods and lifestyles. • Growing fears among southern politicians that their control over the federal government would steadily diminish as the north's economy and population steadily grew while the south's declined. • Widespread racism and support for slavery in the south (most southerners viewed more moderate northern views of race distinctions and slavery as a threat to the southern culture and way of life). • Cultural and economic distinctions between the north and south: the north in the early to middle 19th century was becoming an increasingly industrialized, heterogenous society comprised of a growing number of immigrant groups, while the south remained an agrarian, homogenous society made up mostly of the descendents of English/Irish settlers.

Figure 9.1. Example of a two-column note-taking template.

licitly taught and modeled, may be well suited to the needs of many students with executive function weaknesses.

Two- and Three-Column Templates

Structured around a question-and-answer framework, column note-taking formats can be particularly powerful learning tools because they associate essential information with questions that elicit it (questions similar to those that might be on a test). Figure 9.1 is an example of a two-column format. New information is summarized in a structured manner in the right-hand column, while a question that the information answers is placed next to in the left-hand column.

Three-column templates include a third column that encourages the learner to insert a strategy that will be used to remember the information. Figure 9.2 shows the a three-column template, adapted from the Triple Note Tote presented by Meltzer et al. (2007) and published as part of BrainCogs (Research Institute for Learning and Development and FableVision, Inc., 2002a). The benefit of the additional column is that it encourages students to link new material not just to questions, but also to a strategy that assists its organized storage and retrieval. Students with executive function weaknesses are especially likely to benefit from the explicit memory-strategy cueing because their abilities to develop memorization strategies on their own may be less developed than that of most classmates. A blank version of this template is provided as Appendix 9.4.

Graphic Organizers

Referred to by a variety names, including *mind maps* (Davis & Sirotowitz, 1996) and *thinking maps* (Hyerle, 2004), graphic organizers designed to support

THREE-COLUMN NOTE-TAKING TEMPLATE

Questions/terms	Answers/definitions	Memory strategies (How will I remember this?)
<p>What are names of the American great lakes?</p> <p>Which is the largest great lake?</p> <p>Which is the northern-most great lake?</p>	<p>1. Lake Michigan 2. Lake Erie 3. Lake Superior 4. Lake Huron 5. Lake Ontario</p>	<p>Use the 'HOMES' mnemonic</p> <p>Huron Ontario Michigan Erie Superior</p>

Figure 9.2. Example of a three-column note-taking template. (From *BrainCogs*, Research Institute for Learning and Development and FableVision, Inc. (2002); adapted by permission.)

notetaking require students to construct visual maps that represent the manner in which main ideas relate to other ideas and supporting information. Although there are now several styles and types of these visual maps, the kinds of note-taking organizers that are most likely to benefit students with executive skill weaknesses are those that have a straightforward, generally linear/sequential flow (see Figure 9.3 and Appendix 9.5). More complex “web-like” organizers (the ones that branch out in an assortment of directions and have many details) may be less helpful to students with significant executive function challenges because of the intense visual organizational demands of these graphics.

Study Skills

Although the reasons that students with executive function difficulties avoid or struggle with studying for tests may be as many as the number of students with executive function weaknesses, the test preparation challenges of this population often center on the following three factors:

1. *Forgetting to remember to study.* As a function of their distractibility and/or impulsivity, many of these students will forget their studying plans after becoming sidetracked by the many more appealing activities available in the home/community setting (e.g., “Shoot some hoops? Dude, that’s exactly what I need right now after a long hard day at school. Let’s go”).
2. *Leaving insufficient time for studying.* See the time management discussion earlier in this chapter for more details.
3. *Feeling overwhelmed by the demands of studying.* For many students, a failure to study relates to an inability to wrap their minds around the organizational elements of the studying process. When presented with a large amount of information to manage and memorize, these students get stuck

MIND MAP NOTE-TAKING GRAPHIC ORGANIZER TEMPLATE

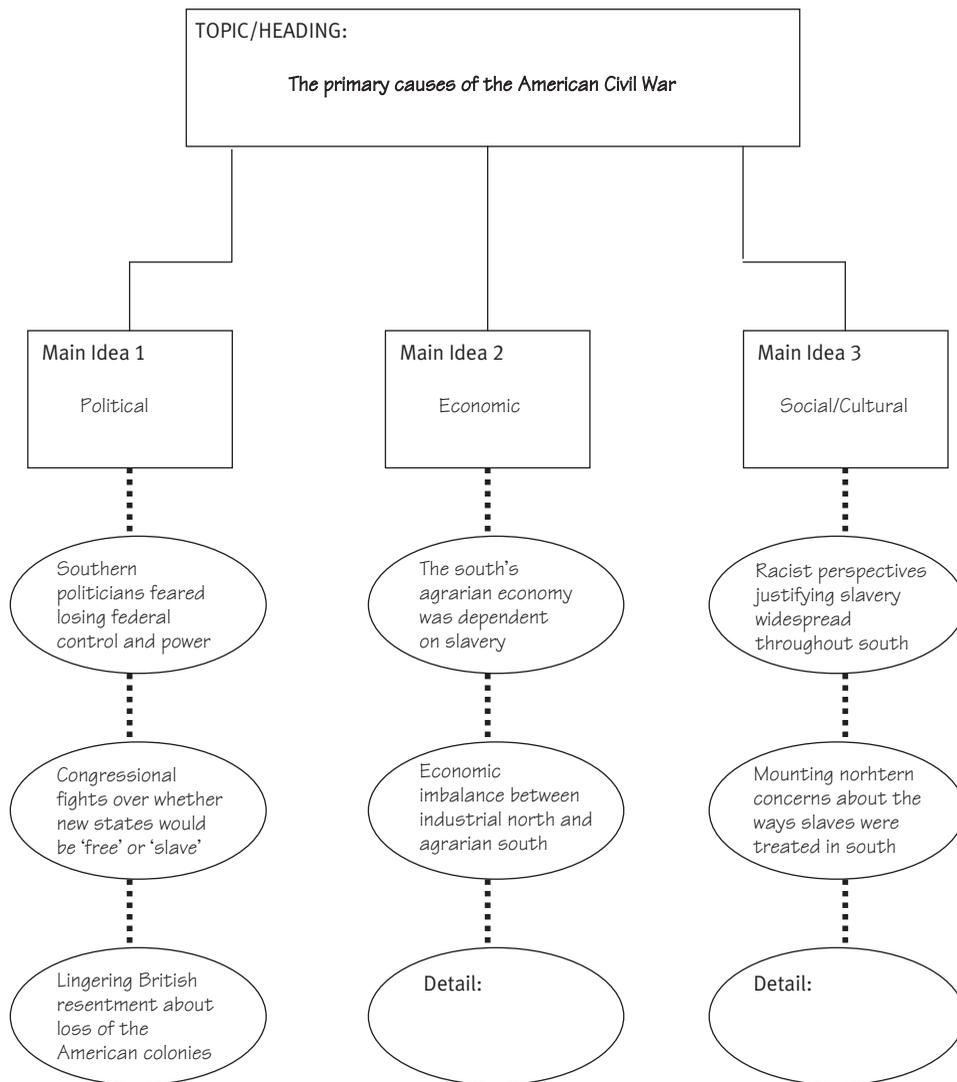


Figure 9.3. Example of a mind-map note-taking graphic organizer template. (Source: Davis & Sirotowitz, 1996.)

on the question, “Where do I start?” They therefore fail to start or get quickly bogged down by anxiety and frustration (e.g., “Forget it. It’s all just too much and I’m just gonna fail this test anyway, so why even bother?”).

Because students with executive function weaknesses are more likely to struggle than their classmates with structuring the studying process on their own, interventions designed to improve their study skills need to provide scaffolds in the form of highly structured test preparation routines and strategies. These interventions must rely heavily—at least initially—on teachers’ and parents’ prefrontal cortical capacity to review the range of material that might be on a test and develop schedules/routines and study strategies that

are well suited to the information to be learned. Often, once the *when* and the *how* elements of studying are clearly defined for these students, the quality of their test preparation jumps considerably, particularly if sufficient adult supervision is provided to ensure follow-through. The recommendations in the following sections examine this surrogate frontal lobe studying intervention model in more detail.

Establish Study Schedules and Routines

Just as a limited temporal sense will make it difficult for students with executive function struggles to accurately gauge the amount of time needed to complete daily homework and longer-term projects, so too will sense-of-time deficits hamper a student's ability to block out adequate amounts of time to study for tests. Because they are likely to underestimate the hours needed to prepare for examinations, they generally require more adult direction in scheduling and sticking to study time than might be predicted by age and grade levels. Tests that occur on a regularly scheduled basis (e.g., weekly spelling or vocabulary tests, biweekly unit tests, monthly laboratory tests) are the easiest for which to develop study schedules and routines, particularly if they occur with clockwork consistency. For these reoccurring quizzes and examinations, teachers and parents should develop weekly studying schedules that are written into assignment books several weeks in advance and adhered to with unwavering regularity. Thus, if a seventh grader has a science vocabulary test every Friday, then a half-hour of every Thursday evening should be consistently blocked out for science vocabulary review. Similarly, if a fourth grader has midweek spelling tests on Wednesday and final weekly spelling tests on Friday, regular spelling word-review periods should be blocked into every Tuesday and Thursday afternoon. Allowing students to skip one of their regularly scheduled weekly study periods because they claim to already know that week's material is almost always a bad idea, as it creates a precedent for study schedule variation that ends up defeating consistent study routines.

With lots of foresight and planning on the part of parents and teachers, reliable study routines can also be developed for tests that occur on a less frequent basis, such as unit tests, midterms, and finals. Students with executive function struggles may perform better on larger tests like these if the adults in their lives direct them in establishing definite and unwavering blocks of time to be used for test preparation:

Dad: Okay, Jonathan, so both you and your assignment book are saying that your biology midterm is next week. Oh, and we got an e-mail today from your biology teacher saying that she thinks you should devote about 4–5 hours in total studying for it.

Jonathan: Five hours? Come on, Dad, that lady is a freak about work and studying. No one is gonna study that long for this thing.

Dad: Well, freak or no, I think she knows her materials and tests and she also likes you a lot and knows your learning style. Let's block four studying hours into your assignment book between now and the day before the test. I'm also going to put another hour for biology review for you and me into your book for the night before. Got it?

Jonathan: This sucks, but, yeah, I guess I got it.

Show Children Exactly What to Study and How to Study It

One factor that can tank the test performance of students with executive function weaknesses is their difficulties with what Mel Levine (1998; 2002) referred to as *saliency determination*—that is, parsing out the really important information from that which is less important. Because they tend to view all information in a particular unit or course as equally salient, these students often struggle with managing the work and time demands of the studying process (e.g., “How do they expect us to remember all this stuff? It’s impossible!”). Therefore, they generally benefit from explicit instruction regarding the information and materials on which they should focus their studying efforts.

Although this accommodation tends to be less important at the elementary school level because of the rather limited range of information that is associated with quizzes and tests prior to middle school, secondary school students with significant executive function challenges face a number of formal assessments of their academic knowledge and skill sets from week to week. Preparing adequately for all of the quizzes, tests, and performance demonstrations taxes the executive skills of even the more organized and disciplined students, and places a particularly heavy management burden on students with self-management difficulties.

Concrete indication by teachers of the information that should be given greatest emphasis during study sessions helps level the playing field for these students, and also provides them with some explicit instruction regarding the prioritization of academic content. This study-skill intervention can be shifted from an accommodation to a form of specialized instruction (i.e., a skill-building activity) when it not only carefully delineates the specific material that should be studied but also provides clear strategies for remembering the information (i.e., shows the *how* of studying). Classroom teachers know the learning objectives that will be assessed by their tests better than anyone, so they are in the best position to help students with executive function weaknesses develop concrete strategies to learn and recall them. Special educators and executive skill coaches (see next section) can also help with the strategy teaching and practice process by helping students construct such study aids as flashcards, mind maps, and two- and three-column note-consolidation systems.

The bottom line is that students with executive function weaknesses often need help studying in more focused, time-efficient, and strategic ways. By completing study plan forms (see Appendix 9.5), teachers can help these students identify the information to prioritize and send them home with clear strategies to learn the material and recall it when needed at test time.

Order Form

BROOKES PUBLISHING • P.O. Box 10624, Baltimore, MD 21285-0624

ABOUT YOU (write in your specialty and check one field that best applies)

Specialty _____

Birth to Five K-12 Clinical/Medical Personnel 4-year College/Grad. Comm. College/Vocational Association/Foundation Comm. Services

Name _____

Address _____

residential commercial

City _____

State _____

ZIP _____

Country _____

E-mail _____

Yes! I want to receive e-mail about new titles and special offers. (Your e-mail address will not be shared with any other party.)

We auto-confirm all orders by mail; please provide an email address to receive confirmation of order and shipping.

Qty	Stock #	Title	Price
PAYMENT METHOD			Subtotal
<input type="radio"/> Check enclosed (payable to Brookes Publishing Co.)			6% sales tax, MD only
<input type="radio"/> Purchase Order attached (bill my institution) *Add 2% to product total for P.O. handling fee			5% business tax (GST), CAN only
<input type="radio"/> American Express (15 digits)			P.O. customers: 2% of subtotal
<input type="radio"/> Discover (16 digits)			Shipping (see chart below)
<input type="radio"/> MasterCard (16 digits)			Total (in U.S. dollars)
<input type="radio"/> Visa (13 or 16 digits)			

Credit card account number _____

Security code (3 or 4 digit code on back of card): _____

Expiration date __/__/__ Signature _____

Convenient ways to order:

CALL toll-free 1-800-638-3775 M-F, 9 a.m. to 5 p.m. ET.; **FAX** 410-337-8539;

MAIL order form to: Brookes Publishing Co., P.O. Box 10624, Baltimore, MD 21285-0624:

ON-LINE www.brookespublishing.com

Money-back guarantee! Ordering with Brookes is risk-free. If you are not completely satisfied, you may return books and videotapes within 30 days for a full credit of the purchase price (unless otherwise indicated). Refunds will be issued for prepaid orders. Items must be returned in resalable condition. All prices in U.S.A. dollars. Policies and prices subject to change without notice. Prices may be higher outside the U.S.A.

STANDARD GROUND SHIPPING & HANDLING

(For other shipping options and rates, call 1-800-638-3775, in the U.S.A. and Canada, and 410-337-9580, worldwide.)

Continental U.S.A.** territories & protectorates†; AK, HI & PR‡

For subtotal of Add*

US\$55.00 and under \$6.49

US\$55.01 and over 12%

**Continental U.S.A. orders ship via UPS Ground Delivery.

†U.S.A. territories & protectorates orders ship via USPS.

‡AK, HI, and PR please add an additional US\$12.00. Orders ship via UPS Air.

Please call or email for expedited shipping options and rates.

Canada

For subtotal of Add*

US\$67.00 and under \$9.99

US\$67.01 and over 15%

Orders for Canada are consolidated for shipping twice each month.

For minimum shipping time, please place your orders by the 9th or 24th of each month.

*calculate percentage on subtotal