The executive functions are mental processes that direct a child's thought, action, and emotion, particularly during active problem solving. Specific skills include (a) selecting appropriate goals for a particular task, (b) planning and organizing an approach to problem solving, (c) initiating a plan, (d) inhibiting (blocking out) distractions, (e) holding a goal and plan in mind, (f) flexibly trying a new approach when necessary, and (g) checking to see that the goal is achieved. The executive functions are also responsible for controlling a child's emotional responses, thereby allowing for more effective problem solving.

1. *Inhibit* is the ability to resist impulses and to stop one's behavior at the appropriate time. Children with similarly reported concerns often have trouble resisting impulses and considering the potential consequences of their actions before they act. Children with similar difficulties may display high levels of physical activity, inappropriate physical responses to others, a tendency to interrupt and disrupt group activities, and a general failure to "look before leaping."

2. *Shifting* is the ability to make transitions, tolerate change, problem-solve flexibly, and switch or alternate one's attention from one focus or topic to another. This might include difficulty moving from one activity to another or shifting her attention or focus from one thing to another. Problems with shifting can compromise problem solving efficiency. Caregivers often describe children who have difficulty with shifting as being somewhat rigid or inflexible, and as preferring consistent routines. In some cases, children are described as being unable to drop certain topics of interest or unable to move beyond a specific disappointment or unmet need.

3. *Emotional control* reflects the influence of the executive functions on the expression and regulation of one's emotions. She may overreact to events and may demonstrate sudden emotional outbursts or emotional explosiveness. She may also experience sudden or frequent mood changes and excessive periods of feeling upset. Children with emotional control difficulties often have overblown emotional reactions to seemingly minor events. For example, such children may cry easily or become overly silly with little provocation. They may also have temper tantrums with a frequency or a severity that is inappropriate for their age.

4. *Initiation* is the ability to begin a task or activity without being prompted to do so. Key aspects of initiation include the ability to independently generate ideas, responses, or problem-solving strategies. Initiation difficulties typically do not reflect noncompliance or disinterest in a specific task. Children with initiation problems typically want to succeed at and complete a task, but they have trouble getting started. They may need extensive prompting or cuing in order to begin a task or activity. Children with initiation difficulties are at risk for being viewed as "unmotivated."

5. *Working memory* is described as the capacity to hold information in mind in order to complete a task, encode and store information, or generate goals. Working memory is essential for carrying out multistep activities, completing mental manipulations such as mental arithmetic, and/or following complex instructions. She may have difficulty sustaining working memory, which may make it difficult for her to remain attentive and focused for appropriate lengths of time.

Children with working memory difficulties may have trouble remembering things (e.g., instructions, phone numbers) even for a few seconds. They may lose track of what they are doing as they work or forget what they are supposed to do when they are sent on an errand. They often miss important information such as complex instructions for an assignment because it exceeds their working memory capacity.

Working memory is also needed to sustain attention. Children with working memory difficulties may not "stick to" an activity for an age-appropriate amount of time and may fail to complete tasks.

6. *Planning and organization* are important components of problem solving. Planning involves setting a goal and determining the best way to reach that goal, often through a series of steps. Organization involves the ability to bring order to information and to appreciate main ideas or key concepts when learning or communicating information, either orally or in writing. She may underestimate the time required to complete a task and/or the level of difficulty inherent in a task. STUDENT may also have trouble determining and carrying out the multiple steps needed to reach a goal. She may have good ideas but is unable to express them adequately on tests and written assignments. Children with planning difficulties often feel overwhelmed by large amounts of information. They may approach tasks in a haphazard fashion, and often get caught up in the details while missing the "big picture." Parents often report that such children typically wait until the last minute to begin a long-term project or assignment for school.

7. Another aspect of organization is the ability to order and organize things in one's environment, including the maintenance of orderly work, play, and storage spaces (e.g., school desks, lockers, backpacks, and bedrooms). This type of organization involves organizing, keeping track of, and cleaning up one's belongings, as well as making sure beforehand that the materials needed for a task are available. She reportedly has trouble organizing the materials needed for projects or assignments. Children who have difficulties in this area often do not function efficiently in school or at home because they do not have their belongings readily available for use. Pragmatically, teaching STUDENT to organize her belongings can be a useful, concrete tool for teaching greater task organization.

8. *Monitoring* can be viewed as consisting of two components: *Task-oriented* monitoring (or work-checking habits) and *Self-monitoring* (or interpersonal awareness). Task monitoring reflects a child's ability to check his or her own performance during or shortly after finishing a task to ensure that he or she has accurately or appropriately attained the desired goal. Self-monitoring reflects a child's awareness of the effect that his or her behavior has on others. Children like STUDENT tend to be less cautious in their approach to tasks or assignments, and they often do not notice or check for mistakes in their work. They are often unaware of their own behavior and the impact this behavior has on their social interactions with others. Caregivers often describe children with task-oriented monitoring difficulties as rushing through their work, as making careless mistakes, and as failing to check their work for mistakes.

Inhibit

External Structuring and Modifications

A student with inhibitory control difficulties often requires additional structure in her environment at the outset in order to maintain more appropriately controlled behavior. STUDENT might need a more explicit, extensive, and/or clear set of rules and expectations, and might need these reviewed with her regularly.

Often, it is important to limit distractions that are problematic for a student with inhibitory control difficulties. This might include visual and auditory distractions as well as other students or activities that can pull STUDENT's attention away from a task.

Environmental structure can be an important consideration for children like STUDENT. Open classroom settings often have too many distractions and too many opportunities for impulsive behaviors.

A student like STUDENT often benefits from careful placement in the classroom. This is not necessarily in the front and center, but might be close to the center of activity to help her feel more involved or in a place where frequent eye contact with the teacher is likely.

Disinhibited children often require more frequent redirection and more frequent limit-setting from the teacher. Placement in close proximity of the teacher can facilitate greater interaction without disturbing other students.

STUDENT might benefit from sitting with or near more well-controlled and more focused peers who can serve as models and can resist her distracting tendencies.

A lower student-to-teacher ratio may be necessary to allow for more frequent interaction between STUDENT and her instructors. The inclusion of aids, parent helpers, or other paraprofessionals within the classroom can help provide the additional external structure STUDENT needs to remain more appropriately controlled.

Often a child with impulse control difficulties finds typical homework loads daunting. STUDENT may need her homework requirements reduced to within her capabilities at the outset, with stepwise increases in expectations as she demonstrates success.

Student-Based Interventions

Response delay techniques can be helpful for some students. STUDENT might be taught strategies such as counting to 5 or 10 before responding verbally or physically.

Several “stop and think” methods are available that teach students to inhibit their initial response, to consider the potential consequences of their behaviors, and to further develop a plan of approach to a situation. Some are cognitive-behavioral strategies, and others are available as games for guidance counseling or therapy.

If STUDENT demonstrates an impulsive approach to tasks, she might be asked to verbalize a plan of approach before starting work. This places a short time period between the impulse and the action and can allow for better planning and a more strategic

approach. STUDENT's teacher or parent can ask her to explain how she will approach a task, including her goals for accuracy and time.

It is often helpful to require a student like STUDENT to develop and express more than one plan of approach to a task before starting. This helps her to focus her attention on possible consequences, and alerts her to alternative strategies.

A child like STUDENT often needs more frequent breaks, particularly with motor activity. Breaks can be a reward for work completed and only need to be one or two minutes in duration. STUDENT might be asked to complete some independent desk work within her capabilities before running an errand, taking a bathroom break, or simply bringing her work to the teacher for review.

It is often important to set goals for accuracy of work when a child tends to rush through her work. Acknowledging the speed with which STUDENT completes her work can help her feel good about her accomplishments; increasing accuracy or neatness might be suggested as additional goals.

Behavior programs are often a necessary component for addressing impulse control difficulties, particularly when there are behavioral problems (e.g., the child acts in a physically or socially impulsive fashion). It is important to appreciate that, by definition, a child with inhibitory control difficulties cannot consider potential consequences of her actions in the moment, even though she may demonstrate appropriate knowledge of consequences. Therefore, behavioral programs geared toward controlling stimuli that precede or lead to impulsivity are likely to be more successful than those that focus on the consequences following an impulsive action.

Controlling antecedents, or what occurs prior to an impulsive behavior, is often an important method of reducing problematic behaviors. Parents and teachers can likely anticipate times when STUDENT is likely to act in a disinhibited manner. Intervening at that point may be more effective than attempting to apply consequences during or after a problem. Limiting stimuli or situations where STUDENT might be impulsive can be important, or discussing the likelihood of impulsive behaviors and expectations may also be helpful. For example, if STUDENT has difficulty with behavioral control on the playground, she might meet with the teacher for a few minutes before joining her peers to discuss expectations and actions that STUDENT or her teacher might take to avoid problems.

Consequence based systems may be an effective support for STUDENT. While she may have difficulty considering consequences at the moment, reinforcement for appropriate behaviors and response costs for inappropriate behaviors may be helpful and necessary.

It is usually important that any behavior program be implemented across settings for consistency. STUDENT's parents, teachers, and other involved individuals should be consistent in their use of behavioral techniques.

Ongoing behavioral consultation is often important. Behavioral interventions typically require ongoing adjustments to address new situations or challenges, to modify reinforcers and consequences as needed, and to ensure consistency. Often counselors, a behavioral specialist, or a therapist can serve as the behavior program manager.

Social difficulties often become apparent for a child with inhibitory control difficulties. A child who behaves impulsively with peers may say or do inappropriate things and peers will learn to keep their distance. It is important to intervene early to avert social difficulties and the negative effects on STUDENT's self-esteem. Some suggestions include

- Employing cross-age tutoring or mentoring with an older student who can explain and model appropriate social behaviors can be an effective means of increasing social success.
- STUDENT might benefit from small group activities with more focused and well-controlled peers. Her peers can serve as role models, but may need adult guidance in ways to respond to STUDENT's impulsive behaviors.
- Guided observations of peer interactions may be helpful for STUDENT as a means of learning more appropriate social skills. A teacher or parent might meet with her briefly at the outset of an activity and discuss how other children are behaving.
- STUDENT may need more limited time in unstructured activity in order to maintain appropriate behavior. She might join an activity with a prearranged expectation that she will take a break from the activity after a set period of time. This break time can be used to review her successes and any areas of difficulty before returning to the activity.

Shift

External Structuring and Modifications

Remaining consistent is an important aspect of structured, systematic teaching, and it promotes learning and generalization across settings and time. Consistency in teaching and management does not imply rigidity, but rather a systematic form of teaching and dependable, predictable environments. Increased consistency is often necessary at the outset for a child with difficulties shifting or adjusting to changes in routine, schedule, or activity. This may include the use of teaching and behavioral strategies that remain the same across time, environments, and people.

Often a child's preference for sameness or insistence on routines and sameness reflect the degree of anxiety and distress she experiences with change. While respecting STUDENT's need for the comfort which her routines may provide, the learning and home environments can gradually and incrementally introduce minor changes, one at a time.

A child with difficulties shifting can often adjust to changes in schedule or routine with the use of visual organizers such as pictures, schedules, planners, and calendar boards. This will let STUDENT know the order of activities for the day, and can alert her to variations in the usual sequence of events before they occur.

Adherence to routines and resistance to change may reflect STUDENT's need for predictability in her environment. An essential tenet of intervention is to facilitate feelings of security by maintaining a set of basic routines, then adjusting routines slightly in a stepwise fashion. Larger steps may provoke resistance and distress.

Displaying a daily schedule and reviewing it at the outset of the day can help a student like STUDENT anticipate the sequence of events and can serve as a useful reminder of any changes in her daily routine.

Student-Based Interventions

For a child who benefits from routines or who rigidly adheres to routines, development of positive routines and a set of alternative routines can be functional. Essentially, STUDENT's day can be viewed as a sequence of routines, such as a morning routine, a school routine, and an evening routine. These can be further broken down into several subroutines, such as brushing teeth, washing up, getting dressed, and packing a backpack for school. STUDENT may then be able to learn alternative subroutines, such as different ways to get to school, that can be practiced and swapped in and out of the larger routines. This can build in the appearance of flexibility.

A child like STUDENT with difficulties shifting attention and cognitive set often needs to focus on only one task at a time. Presenting one task at a time and limiting choices to only one or two may be helpful.

STUDENT might benefit from practice with shifting attention and cognitive set. Working with two or three familiar tasks and rotating them at regular intervals can build in the appearance of greater flexibility and help STUDENT become more accustomed to shifting.

Some children can benefit from external prompting to shift attention, behavior, or cognitive set from one activity or focus to the next.

One of the most effective strategies for a child with difficulty adjusting to change in routine is the use of the "2-minute warning." Teachers and parents can alert STUDENT that one activity is about to end and another will begin. Allowing a few minutes of "down time" or leisure activity between the end of one activity and the beginning of the next can also facilitate transitions.

Making the change in activity another form of routine may be helpful. That is, it may be useful to indicate a change and to complete the change of activity in a similar fashion each time. For example, giving a 2-minute warning that the activity is about to change, providing a signal to indicate that the activity is changing, and putting away materials for one task then bringing out the next can make the change itself a comfortable routine.

Any changes in scheduled activities, persons, or events can be placed on STUDENT's schedule and called to her attention with as much advance notice as possible. This provides more time for her to adjust to the change.

Some children can benefit from set time limits for each task before a shift to the next task is required. STUDENT might work on one activity or assignment for a set period then an alternative activity for the next period. Use of a timer can facilitate STUDENT's adjustment to change in activity.

Developing a "routine for when the usual routine changes" can assist the child in adapting to unanticipated change. Anticipating possible changes in the child's everyday routine (e.g., when the child's favorite cereal is not available for breakfast) and building

in a new routine (e.g., reviewing a preestablished menu of other breakfast foods) can reduce the chances of a crisis and can promote more adaptive response to change.

Sometimes working in small groups or pairs with peers can help a child like STUDENT shift her focus or cognitive set. Peers can model that it is time to change, cuing STUDENT by their behavior.

Emotional Control

External Structuring and Modifications

It may be useful to manage stimuli or antecedents that appear to produce emotional changes or outbursts in STUDENT. Some situations, peers, or tasks may need to be initially avoided or limited until she experiences more success in managing her emotional expression.

It may be helpful for STUDENT's parents and teachers to model appropriate emotional modulation. They might talk aloud through a situation that provokes feelings of anger or sadness and explain how they will deal with their feelings.

If STUDENT responds with emotional outbursts to school work, it may be helpful to return to mastery or success levels and to adjust academic demands.

Clear rules and expectations for behavior, including emotional modulation, both in the classroom and at home, may be important for STUDENT. Such explicit expectations can provide predictability and a feeling of control over the situation, which in turn can facilitate better emotional modulation.

Student-Based Interventions

Children with executive difficulties, particularly with fragile inhibitory control and/or difficulties adapting to change in their home and school environments, may express their feelings more strongly and more directly than most children. This can make them seem more angry, irritable, sad, or silly than their peers. Such emotional expression should prompt evaluation to rule out mood or affective difficulties. When difficulties with modulation of affect occur in the context of other self-regulatory problems, management of the child's executive difficulties may be helpful.

Difficulties with emotional control can often be viewed as one expression of disinhibition. Thus, techniques for supporting inhibitory control and reducing impulsivity may be helpful.

STUDENT might benefit from opportunities to discuss upcoming situations or events that may provoke an emotional outburst. Increasing her awareness of the potential for emotional reactivity and the likely consequences to follow may help her modulate more effectively in the moment.

Processing situations that have led to emotional outbursts with STUDENT in a nonthreatening setting and manner is important. Choose a situation where she is relaxed and therefore more receptive to objective analysis of what happened. This can help STUDENT gain better control while increasing her awareness of her reactions.

Peer modeling may be helpful for STUDENT. Placing her in activity-focused, small groups with well-controlled peers may help her emulate their behavior.

STUDENT might benefit from learning response delay techniques, similar to those used to help with inhibitory control (e.g., practice leaving the situation, counting before responding, and/or developing two or more possible responses). Also, thinking through potential ramifications of her responses may reduce the frequency or intensity of an immediate emotional reaction.

A child with strong emotional responses to events or situations may benefit from learning a concrete, simple metaphor to help increase emotional monitoring and increase the likelihood of a more appropriate response. For example, STUDENT might work in therapy or with a counselor to develop a "thermometer" or "speedometer" metaphor for measuring anger or distress. She might label each temperature or speed to reflect degrees of anger, such as "10 = normal, 20 = irritated, 30 = getting mad,…. 100 = out of control." Each level can then be tied to a specific concrete behavior, such as counting to delay responses, terminating the conversation, seeking adult intervention, or immediately leaving the situation.

STUDENT might benefit from increased awareness of the strength of her emotional reactions and the impact this has on others. Discussing a recent situation with STUDENT when she is calm is one way to help increase her awareness, while also considering other ways she might approach a similar situation in the future. Peer group counseling can provide an opportunity for feedback from peers. Methods for increasing self-monitoring of behavior may be appropriate.

Some children with difficulty modulating affect require psychotherapy to help them develop a clear, practical, affective vocabulary. Such work can help them differentiate and label complex, overwhelming feelings of "upset" into more specific feeling states (i.e., angry, nervous, sad) as well as practice alternative ways of expressing emotions. She might benefit from learning an "emotional vocabulary" or "scripts" for dealing with situations that provoke strong emotions.

A child who experiences difficulty with emotional control often needs short breaks or a cooling off period to consider her response to an event or situation. This is best taken before an emotional outburst occurs. STUDENT might be given permission to take a "time out" when needed or to leave the situation and seek an identified adult with whom she can discuss her feelings. It is important to avoid viewing "time out" as a punishment, and to reward STUDENT for removing herself from a situation independently.

Behavioral programs that are designed to support independent use of coping skills can be an important aid. Reinforcing STUDENT's ability to identifying stress-inducing situations ahead of time, her use of relaxation methods, or her implementation of more modulated forms of emotional expression (e.g., verbalizing feelings associated with a stress response or verbalizing the impact of the stressor) may be helpful.

Initiate

External Structuring and Modifications

It may be helpful to appreciate that children with initiation difficulties have trouble "getting going" or starting. This can be exhibited in a number of ways: (a) behaviorally, such that they cannot get started on physical activities such as getting up; (b) socially, such that they have difficulty calling friends or going out to be with friends; (c) academically, such that they have trouble getting started on homework or assignments; or (d) cognitively, such that they have difficulty coming up with ideas or generating plans. Deficits in "primary" initiation are relatively rare and are often associated with significant neurological disorders (e.g., traumatic brain injury, anoxia, radiation). More commonly, initiation deficits are the secondary consequence of other executive problems (e.g., disorganization) or emotional disorders (e.g., depression, paralyzing anxiety). Basic tenets of intervention include providing additional external structure, prompting and cuing, and helping with organization and planning.

Increased structure in the environment or in an activity can help with initiation difficulties. Building in routines for everyday activities is often important, as routine tasks and their completion become more automatic, reducing the need for independent initiation. For example, the morning routine can be broken down into a sequence of steps, and these steps can be written down on index cards or a simple list. STUDENT might then follow the list of steps each day with supervision as needed until the routine becomes automatic. STUDENT can learn to use such lists as prompts.

External prompting may be necessary to help STUDENT get started. STUDENT's teacher might stop by her desk at the outset of each task and prompt her to start her work, or perhaps demonstrate the first problem of a worksheet. At home, her parents might need to similarly prompt her to get started on homework, to perform chores, or to go out with friends.

Peers can often help serve as models to help STUDENT get started on tasks. Working in pairs or in small groups may be helpful, as STUDENT's peers will serve as external cues. Cooperative projects may be most useful as the interaction with peers will continuously prompt STUDENT.

Some children benefit from having time limits set for completing a task. Use of a timer may facilitate increased initiation and speed of task completion.

Many children with initiation difficulties are viewed as "unmotivated." It is important to reframe the problem as an initiation difficulty rather than lack of motivation.

Problems with initiating may be exacerbated by the child's sense of being overwhelmed with a given task. Tasks or assignments that seem too large can interfere with STUDENT's ability to get started. Breaking tasks into smaller, more structured steps may reduce her sense of being overwhelmed and increase initiation.

Methods designed to increase overall level of arousal or basic "energy level" can be useful for children like STUDENT who have difficulty initiating on their own. Physical activity, group interaction, frequent short breaks with motor activity, and variation of

pace or stimulation may be explored as means of increasing arousal and supporting initiation.

Guidance through the first problem of a set for deskwork or homework will often support greater initiation. Stopping by STUDENT's desk and demonstrating the procedures for the first problem of a worksheet will help her get going on the remainder of the problems.

It is often helpful to provide examples or work samples that serve as a model of what is expected. STUDENT can then follow the example to help cue what is next.

Provide STUDENT with realistic opportunities for initiating a task with appropriate wait time that allows for the child to "recruit" their plan and skill for the particular activity or task.

Provide appropriate supportive signals or cues that remind the child to initiate an activity (e.g., cues by caretaker, cues by devices such as alarm watch, personal digital assistant). Use natural cues whenever possible, including peers in social or academic situations when appropriate.

It is important to appreciate that different tasks place varying demands on STUDENT's ability to initiate. Tasks that are inherently motivating often require less internal initiation than tasks that are less motivating. Similarly, more complex tasks may require greater initiation.

Those who work with STUDENT should be aware of the natural tendency to do things for her, rather than support her own participation. It is important to support independent task initiation, thus avoiding the risk of "learned helplessness." This requires a balance, however, as constant or repeated prompting may feel like "nagging" to STUDENT.

Student-Based Interventions

Children like STUDENT who demonstrate difficulties thinking of ideas may benefit from learning a structured, systematic approach to idea generation. They can be taught idea generation strategies to help develop ideas for topics, for performing activities, or for ways to approach problems.

Providing "to do" lists on paper or index cards can be a method of developing automatic routines and can serve as external cues to begin an activity. Some children benefit from keeping a binder or "cookbook" with lists of steps for each activity. They can look up a page with steps for completing a specific task, and use the list to guide their activity.

As with any executive difficulty, it can be helpful to increase STUDENT's awareness of her difficulty with initiation. As she becomes metacognitively aware of her own difficulties getting started, she can then participate more actively in using strategies.

Learning activities that increase motivation or arousal can support better initiation. STUDENT might benefit from more interactive, hands on, or laboratory learning activities rather than desk work. Active learning methods can be interspersed with more sedentary methods to spark higher levels of motivation and arousal.

Topics or activities that STUDENT finds particularly interesting will likely lead to greater initiation ability. Help STUDENT find topics or methods that are of interest for projects and assignments.

Computer aided instruction can be a useful means of increasing arousal and initiation. Many educational programs include regular or continuous prompts that will supplant STUDENT's need to initiate on her own.

Difficulties with initiating are often a problem of knowing where to start. Providing STUDENT with greater organization for a task and demonstrating where to begin and what steps to follow may help her overcome initiation difficulties.

Working Memory

External Structuring and Modifications

Preteaching the general framework of new information and guiding attention to listen for important points can be an essential tool for circumventing working memory difficulties when they interfere with the ability to capture new material. STUDENT might meet with a resource teacher or aide at the outset of each day and preview the gist of what will be learned that day.

Establishing eye contact with STUDENT prior to giving essential instructions or new material will help ensure that she is ready to listen carefully. Children like STUDENT with working memory difficulties often need to be alerted when essential material or instructions are being presented.

The rate of presentation for new material may need to be altered for STUDENT. She may need additional processing time or time to rehearse the information.

A child like STUDENT with working memory difficulties often needs tasks or information broken down into smaller steps or chunks.

Changing tasks more frequently can alleviate some of the drain on sustained working memory for a child like STUDENT. STUDENT's focus is likely to fade more quickly than her peers. Changing from one task to the next sooner can help restore her focus for a brief period of time. Tasks can be rotated, such that she might work for 10 minutes on math problems, 10 minutes on reading, and then return to another 10 minutes of math.

A child with difficulties sustaining working memory often needs frequent short breaks. Breaks typically need only be 1 or 2 minutes in duration. Observing when STUDENT's ability to focus begins to wane will help determine the optimal time for a break.

“Attentional breaks” are best taken with a motor activity or a relaxing activity. STUDENT might walk to the pencil sharpener, run a short errand, get a drink, or simply bring her work to show her teacher or her parent.

Teacher “check-ins” can be an efficacious method of providing a break with motor activity and an opportunity for reinforcement. STUDENT might be asked to complete only a few problems of a set or a few lines of a paragraph before bringing her work to her teacher or her parent for review. This provides a built-in break that STUDENT can anticipate, forces a stepwise approach to the task, includes motor activity, and an opportunity for reinforcement for work completed.

Lengthy tasks, particularly those that STUDENT experiences as tedious or monotonous, should be avoided or interspersed with more frequent breaks or other, more engaging

tasks. STUDENT might be rewarded with a more stimulating activity such as computer instruction time for completing the more tedious task.

Given the negative impact of competing information on working memory, it is important to reduce distractions in the environment that can tax or disrupt sustained working memory.

STUDENT may need increased supervision. Preferential seating can be an important accommodation for children with limited ability to sustain working memory. Placing her seat near the teacher provides greater opportunity to observe when she is adequately focused and when she is fatiguing, and redirection or breaks can be more easily implemented.

Placing STUDENT where she can feel more "in the middle" of activity may help increase her arousal and help with sustained focus.

Information may need to be preorganized for STUDENT to reduce demands for working memory and to make encoding more efficient at the outset.

Often children with working memory deficits also exhibit word and information retrieval difficulties. They frequently experience the "tip of the tongue" phenomenon, or may produce the wrong details within the correct concept. STUDENT may need additional time to retrieve details when answering a question. Cues may be necessary to help her focus on the correct bit of information or word. It is often helpful to avoid open-ended questions and to rely more on recognition testing which does not require retrieval.

If STUDENT answers an open-ended question incorrectly such as a "fill in the blank" or short answer question, it will be important to follow-up with increasing levels of questions to determine whether STUDENT knows the information. Offering cues for the missed response, then following up with recognition format questions will clarify whether STUDENT missed the answer due to retrieval difficulty or whether she needs to relearn the material.

Computer aided instruction can be a helpful tool for children with difficulties sustaining working memory. Computer programs can provide rehearsal in an entertaining fashion and are often less demanding of working memory.

It may be important to observe STUDENT to determine whether she has greater difficulty at certain times of the day. Some children with difficulties sustaining working memory do better in the morning than in the afternoon as they begin to fatigue. It may be helpful to schedule more demanding tasks in the morning.

Children with working memory difficulties often benefit from multimodal presentation of information. Verbal instruction can be accompanied by visual cues, demonstration, and guidance to increase the likelihood that new material will be learned.

New information or instructions may need to be kept brief and to the point, or repeated in concise fashion for STUDENT.

Student-Based Interventions

Children with difficulties sustaining working memory often show problems in the ability to remain focused on a task or activity, particularly for schoolwork or homework

assignments. Many demonstrate a natural tendency to use "self-talk" or verbal mediation in order to guide their own problem solving and to direct their attention. Such verbal mediation strategies might be encouraged or taught directly. Initially, STUDENT might verbalize aloud with supervision as she steps through a task. Eventually, talking aloud can be minimized such that STUDENT relies on subvocalization or only a whisper to direct her focus.

Individuals like STUDENT often demonstrate difficulties keeping track of more than one or two steps at a time. Providing a written checklist of steps required to complete a task can serve as an external memory support and alleviate some of the burden on working memory.

It is often necessary to repeat instructions or new information for children like STUDENT so that they may increase the amount of information captured.

Children like STUDENT can benefit from learning compensatory skills to apply independently.

STUDENT can learn how to actively listen, such as stopping what she is doing at the time, focus her attention, ask questions, restate the information or question, or take notes.

Have STUDENT repeat or paraphrase what she has heard or understood in order to check for accuracy and to provide an opportunity for rehearsal. Ultimately, teaching self-initiated "comprehension checking" strategies (e.g., the child asking for repetition of instructions) helps to promote independent management of working memory weaknesses.

Mnemonic devices (i.e., memory strategies) are important tools to help children like STUDENT learn, and later recall, basic skills and facts.

Teaching STUDENT to "chunk" information may be useful in helping her increase the amount that she can learn or capture at one time. It may be necessary for STUDENT's teachers or her parents to help her learn how to approach new information as sets or groups of details, rather than as a single series, in order to facilitate chunking.

Rehearsal is often a helpful method of increasing the amount of information encoded into memory. STUDENT might need to practice a series of steps for solving a problem, memorizing a list of key facts, or completing an everyday activity in order to accommodate her more limited working memory at the outset. Spaced practice is more effective than massed practice. That is, STUDENT would benefit more from practicing new skills or information in short sessions over the course of the day rather than in one long session. She might rehearse, for example, a set of key facts for a few minutes two or three times during the school day, and then again at home both at night and in the morning.

Planning

External Structuring and Modifications

As with most interventions for executive function difficulties, increasing external structure to learn what supports are necessary for success is important at the outset. The amount of structure needed for planning successfully can then be decreased or faded

gradually as STUDENT's ability to manage her own planning needs increases and as she assumes greater independence and responsibility in this domain.

It is often helpful to provide examples of how students might plan differently to complete the same task. In this way, STUDENT can see options for alternative methods.

Children with difficulties planning may benefit from having a binder or "cookbook" of steps for common routines or assignments. They might have a section for approaches to specific types of math problems, writing assignments, or reading materials and can reference the plans as needed.

Parent modeling is an important means of teaching good planning skills. STUDENT's parents can discuss plans for the day at the breakfast table or verbalize their thinking about how to approach a series of errands. The use of the child's planning guide for the parent's multistep activities may serve as a good model. Developing an overall plan for the day, week, month, and year with a calendar can also serve as a useful exercise.

Student-Based Interventions

Involve STUDENT maximally in setting a goal for the activity or task. Encourage her to generate a prediction regarding how well she expects to do in completing the task/activity. Structure planning and organization efforts around the stated goal.

Active, maximal involvement of the child in the development of plans is important. The use of a planning guide may be necessary to reduce the organizational and working memory demands of this multistep process.

Have STUDENT verbalize a plan of approach at the outset for any given task, whether it is an everyday chore or routine or it is an academic activity. The plan can be broken down into a series of steps, arranged in sequential order, and written down as a bullet list. The plan can be guided interactively with her parent or her teacher to achieve sufficient detail and to increase the likelihood of success.

STUDENT might be asked to develop more than one plan for a task or activity in order to increase her awareness of alternative approaches. For example, she might plan to approach a writing assignment by starting with the introductory paragraph, but might also plan to start with a detailed outline and to write paragraphs for the body of the text first, then write an introduction.

It may be helpful to begin learning strategic planning by practicing with only a few steps at the outset, then increasing the number of steps and the amount of detail gradually.

Strategic planning can be practiced with familiar, everyday tasks. STUDENT might develop a plan for completing familiar routines such as getting ready for school in a more efficient manner. Developing plans for meaningful, complex activities (e.g., her own birthday party, baking her favorite treat) provides inherent motivation for the child.

Teach STUDENT to develop time lines for completing assignments, particularly for long-term assignments such as projects or term papers. STUDENT may need assistance in budgeting her time to complete each step or phase in larger projects or tasks. Break long-term assignments into sequential steps, with time lines for completion of each step and check-ins with the teacher to ensure that she is keeping pace with expectations.

Organization

External Structuring and Modifications

Present information in a well-organized manner at the outset. A child with difficulties grasping new concepts or the gist or framework of new material often does best when the material is presented in a structured fashion. Teachers that offer a higher degree of structure in their courses may be a better fit for STUDENT.

A resource or special education teacher may need to serve as the communication facilitator between home and school in order to help STUDENT stay on track with her assignments. Often communication can be accomplished via an assignment or planning notebook, but more direct communication via e-mail or phone can be helpful on a regular basis.

Keeping an extra set of books at home can be a powerful tool for helping a child with organizational difficulties, as it alleviates a need to remember what books to bring back and forth and provides ready access to materials both at school and at home.

Given the particular difficulty managing complex, long-term assignments, students with organizational difficulties often benefit from working on only one task, or one step of a larger task, at a time. Tasks may need to be broken down into smaller steps in order to facilitate organization and planning. Long-term assignments, such as term papers or projects, are often insurmountable for children with organization and planning difficulties. As such tasks can feel overwhelming, they may not begin work until the night before the assignment is due. It may be necessary to break down longer assignments into smaller, sequential steps, and to develop a time line for completion of each step. At each step, it is important to review what has been accomplished and to plan for the next step.

Worksheets or deskwork may seem overwhelming for STUDENT and she may need additional structure to get started. Worksheets can be separated into smaller problem sets, or divided on the page with a marker and prioritized for approach.

Study skills classes are often available in middle schools and high schools. Children with organizational difficulties should avail themselves of the opportunity to approach planning and organization as an academic subject. It is important that key concepts and methods be communicated with parents and teachers, so that they can be practiced across all environments for consistency. Although study skills classes can provide important information to students about academically relevant organizational strategies, the student may need ongoing assistance with the "executive" application of these strategies. Thus, individual application of strategies, with review, cuing, and generalization should be strongly considered.

STUDENT may need extra organization time at the outset or the end of the day. She might review her assignment notebook or planner with her parents each morning and perhaps with a designated teacher at the end of the school day.

A supervised study hall can be an important tool for helping STUDENT keep pace with her work, particularly as she enters the middle school and high school years. Organizational difficulties often do not become apparent or problematic until middle

school, when the organizational demands increase and supports decrease. Many schools offer study halls with direct supervision for organization as well as content. Alternatively, having a study period at the end of the day in a resource room where access to a special education teacher is readily available can help STUDENT stay on track more successfully.

Children with organizational difficulties can benefit from working in small groups with more organized peers who serve as models.

Cross-age tutoring can be helpful as a means of modeling better organizational strategies for STUDENT. It is important to choose an older peer tutor carefully, considering the tutor's own organizational skills and the likelihood of he or she being a good fit with STUDENT.

Student-Based Interventions

Call to STUDENT's attention the structure of new information at the outset of a lesson or lecture.

Preview the organizational framework of new material to be learned in a bulleted or outline format to increase appreciation of the structure and enhance STUDENT's ability to learn associated details.

It may be helpful to provide an outline or list of major points prior to the lesson.

Have STUDENT restate the overall concept and structure of the information or task following a lecture. This will provide an opportunity to ensure accurate understanding as well as an opportunity to correct any misunderstanding.

As STUDENT becomes more aware of her difficulties grasping organization of new information, she may be able to learn to search for the organizational frameworks inherent in novel material. She might be taught to listen or look for the structure in a strategic manner.

Students with difficulties keeping track of their assignments may benefit from learning to use an organizational system, schedule book, or daily planner. Use of such a system can help facilitate many aspects of organization and planning, but requires effort on the part of the student, parents, and teachers.

Many teachers prefer different organizational and planning systems. This can be confusing for children with organizational difficulties. It is best for STUDENT to learn one system that is sufficiently flexible to be used for all or most subjects and can be maintained or expanded as needed over the years.

It is essential that the system or the book fit well with the student's style and needs. STUDENT might enjoy choosing a planner book with which she feels comfortable. Size and appearance are important first considerations. Layout of the daily pages (e.g., columns, one page per day, one week at a time) also needs to fit with STUDENT's preferences and organizational needs.

Flexibility is the key to a successful organizational notebook or planner. Ring-bound books that allow addition of pages or features (e.g., sticky note pads, computer disk holders) and removal of unnecessary pages are often best.

Essential information can be written or typed and placed in a plastic sheet protector at the front of the book for quick access. This might include important phone numbers, locker combination, and overall schedule.

There are many options for ways to organize material including by date, by subject, or by priority. Deciding on one method and devising a system, such as separate color-coded tabs for each subject, is important.

Often students with organizational difficulties are inconsistent in completing homework and/or turning in completed work. This may be a problem of remembering assignments or writing them down accurately. It may be helpful to maintain a list of students in each subject with phone numbers that STUDENT can call if she forgets an assignment.

An assignment sheet or organizational notebook can serve as an essential tool in helping STUDENT keep on track with her work. Before leaving each class, STUDENT might show her teacher what she has written down as an assignment. The teacher can initial the assignment to indicate that it is correct and complete. STUDENT's parents can then review the assignment with STUDENT, help her plan an approach, and initial that each assignment has been completed. Should STUDENT not turn in her work, this communication device can uncover the problem more quickly.

Specific, strategic approaches for reading (e.g., SQR3) can be taught to facilitate STUDENT's efficiency in learning new material. For example, STUDENT might learn to first examine the chapter outline or list of headings, then read the chapter summary and focus questions before approaching the body of the text.

Strategic approaches to structured writing can be helpful for students like STUDENT who have difficulties organizing their written output. A "cookbook" of methods for responding to basic types of writing tasks (e.g., short answer, short essay, expository paper) can be developed with STUDENT. She might need to learn what goes in the first sentence or paragraph, what goes in the second, and so on.

Outlining and notetaking skills can be taught directly in a study skills course or in a resource room. These are essential skills that STUDENT will need to practice for future academic success.

Organization of Materials

External Structuring and Modifications

Children with difficulty maintaining reasonable organization of their environment and materials may benefit from increased external structure for organization and from the development of good organizational routines in general.

Having an extra set of books at home can be a simple yet effective means of ensuring that STUDENT has the required materials both at home and in school for completing her school and homework assignments.

Some children can benefit from having a checklist of needed materials to review on a daily basis before leaving home for school, and/or at the end of the school day.

Some children benefit from having external tools for organization, such as backpacks, pencil cases, color-coding systems, and organizers. It is important that the materials be to STUDENT's liking so that she will be more likely to use them.

Parents and teachers can model good organizational habits or routines by explicitly calling her attention to their organizing behavior. STUDENT's parents might talk aloud, describing their goal and the process, while organizing a desk or room.

Often children with difficulties organizing their environment or materials have difficulty knowing where to begin or how to structure the process. It can be helpful to approach an organizational task with STUDENT and to ask her about her goal, her plan of approach, and to provide appropriate guided support as needed.

Student-Based Interventions

STUDENT may need help from her parents and her teachers in reviewing the materials needed prior to a given task or at the beginning and/or end of the day. To facilitate development of good organizational habits, STUDENT might review her plans for the day with her parents each morning, the associated materials needed to accomplish her goals, and the organization of the materials in her backpack or desk. Similarly, she might have some "organization time" at the end of the school day to arrange her materials.

Monitoring

External Structuring and Modifications

Provide STUDENT with opportunities for self-monitoring her task performance and social behavior. Provide cues, as subtly as possible, if necessary.

Often, children with difficulties monitoring their output do not recognize their own errors. It may be helpful to build in editing or reviewing as an integral part of every task in order to increase error recognition and correction.

Setting goals for accuracy rather than speed can help increase attention to errors. Reward STUDENT for accuracy to support continued focus on monitoring her work.

Student-Based Interventions

Ask STUDENT to predict how well she will do on a particular task, then compare her prediction with the actual outcome in order to increase her awareness of her strengths and weaknesses. Encourage STUDENT to chart her performance and/or behavior in order to provide a tangible record of activity for ongoing monitoring.

It may be helpful to videotape an activity or situation and then review it together. This allows STUDENT to see herself from another's perspective. Discussion of the videotape with an adult, such as a guidance counselor or therapist, is essential. This method should be considered carefully, and approached collaboratively with STUDENT's, her parents', and other participants' consent. While videotaping can be a powerful tool, there is also potential for emotional consequences and negative effects on self-esteem.

Verbal mediation can be a useful tool for helping children like STUDENT direct their focus to their own behavior or work. STUDENT might benefit from talking through a task, as this can increase attention to the task and, secondarily, increase error recognition.

Model, cue, and encourage the use of the phrases “What works?” and “What doesn’t work?” as self-monitoring tools.

A social skills group may be a helpful venue to increase STUDENT's awareness of the impact her behavior has on others. This can provide not only direct skill training but also an opportunity for helpful feedback from a counselor or peers in a safe setting.

Children with self-monitoring difficulties may not be able to consider the impact of their behavior in the immediate situation. It may be helpful or necessary to discuss or review behavior removed from the situation and from peers.

Encourage STUDENT to identify her strengths and weaknesses for specific tasks or activities. Allow the comparison of preactivity prediction of performance with postactivity evaluation. Provide guided constructive feedback (teacher, parent, and peer) to increase self-awareness of strengths and needs for similar future activities.