CHAPTER 3

Linking Assessment to Intervention

The goal of assessment is intervention. To meet this goal, the assessment process is designed to gather behavioral information relevant to intervention. It is not enough, however, to be able to describe the behaviors of concern to design an effective intervention. We must also have some understanding of why the behavior occurs. For example, a student might have difficulty completing independent classwork because he or she is distracted by a peer talking or because he or she doesn't know how to do the task (or both). Thus, throughout the assessment process we employ a hypothesis-testing approach. At each step, as information is gathered we formulate hypotheses about the environment and the child's skills that can help explain the behavior observed. By soliciting information from others and by observing the child in the natural environment and in the test environment, we refine our hypotheses and try to confirm or refute them.

This same hypothesis-testing approach can simultaneously lead to potential intervention strategies. For example, in the above example if the teacher has observed increased work completion when he or she is close by or when peers are not talking, the attention–distractibility hypothesis gains credibility. This information then also sets the direction for intervention. If, on the other hand, the "why" of this student's behavior is not clear, as part of our hypothesis testing we might ask the teacher to stand close by or relocate the student. The outcome will help to clarify the "why" and the intervention strategy.

Once we have gathered our data and generated our hypotheses, the next stage in the assessment-intervention link is translation of these data into a format and plan for intervention. We have developed a process to help organize and synthesize our assessment information for the purpose of designing interventions targeted to those areas of greatest need, as defined by parents, teachers, or both. This process (also summarized in Table 3.1) includes the following steps:

TABLE 3.1. Steps in Executive Skills Intervention Planning

Step 1: Collect assessment information from a variety of sources.
- Interviews
- Behavior checklists
- Classroom observations
- Work samples
- Formal assessment procedures

Step 2: Review data; list specific problem behaviors and connect them to the most appropriate executive skill domain.

Step 3: Select one executive skill domain for initial intervention and identify a specific behavioral goal (e.g., by soliciting from parents or teachers one or two behaviors, which if increased or decreased would lead to better performance for the student).

Step 4: Design the intervention, incorporating one or more of the following elements:
- Environmental supports or modifications that will be put in place to help support the development of the skill.
- The specific skills the child will be taught and the procedure used to teach them.
- What incentives will be used to help motivate the child to use or practice the skills.

Step 5: Evaluate intervention effectiveness by looking at each intervention component and answering the following questions:
- Was the component put in place?
- Was it effective?
- Does it need to be continued?
- What is the plan for fading this component?

1. Collect assessment information from a variety of sources, including interviews, behavior checklists, classroom observations, work samples, and formal assessment procedures. Whenever possible, use naturally occurring data sources.

2. Consider each executive skill in turn and identify areas of need in specific, behavioral terms. If you are not sure under which executive skill a particular behavior should be coded, include it under those that seem most relevant.

3. Determine which executive skill will be targeted for intervention first, and identify a specific behavioral goal. The following question, posed to parents or teacher may be helpful in identifying which behaviors are a priority for intervention: "What are one or two behaviors, which, if they increased or decreased, would lead you to say [student's name] is definitely performing better?" For the intervention to be implemented successfully, having all parties involved (parents, teachers, etc.) agree to the goal will be essential. When defining the behavioral goal, make every effort to use naturally occurring data sources (i.e., statistics or other data already being collected by either the teacher or the school). When this is not possible, consider a more individualized measurement system. Table 3.2 lists examples of each.

4. Design the intervention. Three critical elements must be considered in planning

TABLE 3.2. Outcome Measures

Measure	Relevant executive skill
Naturally occurring data sources	
Percentage homework handed in on time	Task initiation, working memory, sustained attention, time management, goal-directed persistence
Homework accuracy (% items correct)	Working memory, metacognition
Test/quiz grades	Working memory, metacognition
Assignment grades • Writing assignments • Projects • Notebook checks	Working memory, planning, organization, time management, metacognition, goal-directed persistence
Discipline referrals/detentions	Response inhibition, emotional control, flexibility
Tardiness	Time management
Individualized data measurement systems	
Behavior counts (e.g., latency, interval recordings, frequency of response, rate of response, percentage of response)	All of these measures can be adapted to assess any executive skill. See Table 3.3 for examples.
Likert-type scales	
Rubrics	
Coaching goals (e.g., % coaching goals met)	

the intervention: (1) the environmental supports or modifications that will be put in place to help support development of the skill; (2) the specific skills the child will be taught and the procedure used to teach them; and (3) what incentives will be used to help motivate the child to use or practice the skills. These elements are all described in detail in Chapter 4.

5. Evaluate intervention effectiveness. This is done subsequent to putting the interview in place. The first step in evaluating the intervention is to review the behavioral objective and assess whether the objective was achieved. Whether the objective was achieved or not, the next step is to evaluate the individual components of the intervention to determine whether they were implemented effectively. Make plans for continuing, changing, or fading intervention components, depending on the effectiveness of the intervention. This analysis might also lead to the conclusion that the behavioral objective was unrealistic. If this is the case, a new objective should be written and an intervention designed appropriate to the new objective.

DEVELOPING BEHAVIORAL OBJECTIVES AND MEASURING INTERVENTION EFFECTIVENESS

The success of this process hinges on the careful description of the desired outcome of the intervention and the agreement of all parties to this outcome. Identifying target behaviors leads to the development of a behavioral objective. This step will drive the remainder of the process including outcome evaluation criteria. According to Alberto and Troutman (1999, p. 66), there are four components to a behavioral objective. The objective should: (1) identify the learner ("Scott will . . . "); (2) identify the target behavior ("complete his daily assigned homework . . . "); (3) identify the conditions under which the behavior is to be displayed ("between 4:00 and 7:00 P.M. with no more than two adult verbal prompts . . . "); and (4) identify criteria for acceptable performance ("for 90% of the assignments given during a marking period"). A target behavior is one that is observable and agreed upon by different staff (and parents where applicable). For example, on the following page we have used the term *meltdown* to describe a behavior. We assume that additional descriptors (e.g., "drops to the floor and cries") would be needed for that term to be operationalized.

Table 3.3 provides examples of behavioral objectives (along with a more detailed description of the data collection procedure) for each executive skill. We selected target behaviors that are frequently a source of concern to classroom teachers. We have identified how progress will be measured, but with most of the objectives we have not identified who will monitor progress. In some cases, the classroom teacher is the most logical person to do this, but it may be more appropriate to have someone else—a paraprofessional, guidance counselor, special education teacher, or school psychologist—be the individual in charge of monitoring progress.

We now offer a case example that illustrates both the assessment process and how that assessment is linked to intervention design. Following a description of the child (named Scott) and the assessment results, we include an "Intervention Design Form" that captures the behaviors of concern and lays out a process for developing appropriate interventions. The example is of a 9-year-old child with multiple executive skill problems. The intervention described is multidimensional in that a single process is used to address many of the needs identified during the assessment process. It does not address all the problems, however. Once this process is successfully in place, other issues such as poor error monitoring can then be addressed.

In the real world not all intervention planning is as detailed or precise as we have described here, nor does it need to be. The guiding principle in designing an intervention should be the least amount of support/training necessary for the student to successfully manage the current problem and similar, related problems as they arise. The latter criterion is important since the goal for the child is not only to solve a specific problem but to transfer and generalize the skill to other problems.

TABLE 3.3. Sample Behavioral Objectives and Measurement Procedures

Executive skill	Sample behavioral objective	How progress will be measured
Response inhibition	In class discussions, student will raise his or her hand and wait to be called on 90% of the time before giving an oral response.	Compute percentage of "hand-raising" responses given over total number of responses given. Student and teacher will graph results weekly.
Working memory	Student will hand in 90% of homework assignments on time.	Compute percentage of homework handed in on time each week; results will be entered in a graphing program and e-mailed to student and his or her parents every Friday.
Emotional control	Student will request "help" or "break" when given an assignment he or she finds difficult or frustrating.	Keep running tally of "meltdowns" (defined behaviorally) during independent work time; graph will be completed weekly and shared with student every Friday.
Sustained attention	Student will complete class assignments within time frame set by teacher 90% of the time.	Count percentage of assignments finished within allotted time; student and teacher will keep daily graph of results.
Task Initiation	Student will start all classroom assignments within 5 minutes of designated start time.	Set kitchen timer at designated start time. When the bell rings, will check in with student to see whether the assignment is begun. Percent assignments started on time will be graphed by student and teacher daily.
Planning/ prioritization	With teacher supervision, student will complete project planning form for every long-term assignment, including a description of steps or subtasks and timelines for each item.	Review project planning form and with student grade quality of planning description using a 1–5 scale (1 = poorly planned with missing elements or unrealistic/unspecified timelines; 5 = well planned, all critical elements defined with precision, complete and realistic timelines); scores will be maintained on a running graph.
Organization	Student will maintain neat desk in the classroom with places allocated for books, notebooks, pencils, etc., and no extraneous materials.	With help from an adult, student will write a list of what a neat desk looks like. Conduct random spot checks at least once a week and together student and teacher will judge how many items on the list are present. Results will be maintained on a running graph.

(cont.)

TABLE 3.3. *(cont.)*

Executive skill	Sample behavioral objective	How progress will be measured
Time management	Student will estimate correctly (to within 10 minutes) how long it takes to complete daily homework assignments and will make and follow a written homework schedule at least four nights per week.	Student will write a daily plan listing all work to be completed, an estimate of how long each task will take, and start and stop times for each task. Coach and student will review previous day's plan every day and rate how well plan was followed using a 1–5 scale (1 = poorly developed plan, poorly executed; 5 = well-developed plan, followed successfully, with accurate time estimates for task completion). Results will be maintained on a running graph.
Goal-directed persistence	With assistance from guidance counselor, student will complete college application process, applying to at least four schools and getting applications in by deadline.	Student and guidance counselor will create a plan for completing college application process, with deadlines for each step in plan. Guidance counselor will track number of cues or reminders needed for student to complete each step in plan; results will be graphed and shared with student on a weekly basis.
Flexibility	Student will use coping strategies to get back on track when he or she meets obstacles in completing class assignments.	Student will complete coping strategies checklist; track percentage of time he or she returns to his or her work within 5 minutes.
Metacognition	Student will use a proofreading checklist for all writing assignments of two or more paragraphs.	Count number of mechanical errors per paragraph for all writing assignments of two or more paragraphs and together with student will keep a running graph of data.

CASE EXAMPLE

To illustrate the assessment process, we now present a brief case example in which a variety of assessment techniques were incorporated. The assessment procedure is described along with the information obtained from that procedure.

Parent Interview/Developmental History Forms

Scott is a 9-year-old child living with his parents and older brother and attending a small private school. Birth history was unremarkable and developmental milestones were within normal limits. There is no significant family or medical history. Scott has attended the same school since preschool, and according to parent reports, teachers noted a tendency to wander around the classroom and to have difficulty initiating activities as early as preschool.

In kindergarten, problems with activity level, concentration, and distractibility were all reported. Parents initiated an evaluation because teachers were reporting continuing problems with task initiation and work completion, as well as concerns about motor restlessness and impulsivity.

At home, Scott's parents describe him as an active child who prefers to be outdoors or on the go. He has difficulty sitting through meals and requires frequent reminders to complete chores and follow morning routines. He is able to engage in both reading and television viewing for long periods of time with no apparent attention problems. Homework completion, however, is problematic both due to difficulty getting started on homework and seeing it through to completion. Scott has friends outside of school with whom he plays regularly. However, his parents note that he has some difficulty interpreting social cues and he seems to have difficulty "fitting into a group." He tends to be literal, overly concrete, and lacks flexibility.

Teacher Interview

In an interview the evaluator conducted with Scott's teachers, they describe him as an active child who has an almost constant need to be "moving or touching someone." Hence, boundary issues with peers arise frequently and require teacher attention and mediation. His impulsivity can extend to his work, resulting in messy papers, broken pens/pencils, and cluttered spaces. Other than fiction reading, he has difficulty with initiation and completion of work, especially if it involves written output. At the same time, they see Scott as a boy who is curious about almost any subject and eager to learn. His teachers feel that if he could better manage his impulsivity and task focus, there would be significant improvements in peer relationships and academics.

Behavior Rating Scales

Scott's parents completed the Child Behavior Checklist (Achenbach, 1991a), placing Scott in the clinical range on the scale as a whole and on the Social Problems and the Attention Problems subscales. They also completed that ADHD Rating Scale—Home Version (DuPaul, Power, Anastopoulos, & Reid, 1998) and placed Scott in the clinical range (i.e., above the 93rd percentile) on both the Inattention and Hyperactive/Impulsive subscales. His teachers placed him in the clinical range on the Externalizing Problems of the Child Behavior Checklist—Teacher Report Form (Achenbach, 1991b) and in the borderline clinical range on the scale as a whole and on the Hyperactivity/Impulsivity subscale. They placed him below the clinical range on the ADHD Rating Scale—School Version (DuPaul et al., 1998). However, on the Comprehensive Behavior Rating Scale for Children (Neeper, Lahey, & Frick, 1990), teachers placed him in the clinical range on the Motoric Hyperactivity and the Oppositional/Conduct Disorders subscales.

Parents and teachers also completed the Behavior Rating Inventory of Executive Function (Gioia et al., 2000). His parents placed him in the clinical range on the total scale, on the Metacognitive Index, and on five of eight subscales (Shift, Initiate, Working Memory,

Plan/Organize, Monitor). His teachers placed him in the clinical range on the scale as a whole, on both the Behavior Regulation Index and the Metacognitive Index and all eight subscales (Inhibit, Emotional Control, and Organization of Materials, in addition to those the parents reported).

Taken as a whole, parents and teachers both reported significant executive skills weaknesses. Parents also reported significant attention problems and social problems, but these dimensions were rated as less problematic by teachers, other than problems with task initiation and work completion. Teachers, however, reported higher levels of acting out or externalizing behaviors, perhaps associated with impulsivity and overactivity.

Behavioral Observations

Scott was observed in his classroom during two periods, one involving independent math work and the other a teacher-led discussion with students sitting in a circle. Percentage of time on task was assessed during the 15-minute independent period. In comparison to a male peer judged by the teacher to have average attention, Scott was on task 35% of the time versus 75% for the other boy. In addition to moving around frequently, Scott intermittently made random, low-level sounds. During the teacher-led activity, frequency of physical contact with nearby peers (touching, bumping, laying against them) was measured using an interval recording technique. Scott was in physical contact with other students during 55% of the intervals in comparison to 10% for a matched peer.

During the evaluation session, Scott presented as initially quiet and serious, but he became more talkative as the session went along. He tended to respond quickly to questions, his initial answers often being both impulsive and incorrect. Careless mistakes due to inattention were observed, particularly on visual tasks, and he failed to check his work for accuracy.

Formal Assessment Results

Both as a device for facilitating behavioral observations and because his parents were interested in obtaining information about Scott's learning style, cognitive, memory, and attention tasks were administered. Scott placed in the above-average range on the WISC-III (Wechsler, 1991), with verbal skills falling in the superior range and nonverbal performance skills falling in the average to above-average range. Long-term memory for verbal information was particularly strong. On visual tasks, inattention to detail affected performance on some tasks, particularly those where there was no easy way to check his work for accuracy (e.g., Picture Completion, Picture Arrangement).

Scott's performance on the subtests comprising the Memory Screening Index of the Wide Range Assessment of Memory and Learning (Sheslow & Adams, 1990) fell in the above-average to well-above-average range for the most part, but he was weaker on the Digit Span subtest of the WISC-III, considered to be a measure of working memory. On this measure, he was inconsistent in his recall of numbers in both forward and backward sequences, scoring at the low end of the average range.

Scott was administered two attention tasks. On the Mesulam Tests of Directed Attention (Mesulam, 1985), a letter-cancellation task, he was asked to locate target letters in ordered and random letter arrays. Although he missed only 4 of 60 targets on the ordered array, he missed 21 of 60 targets on the random array. He spent an equal amount of time on each array, but whereas he was able to employ a systematic search strategy on the ordered array (i.e., going row by row), the random array did not lend itself to this kind of strategy. In the absence of such a search strategy, it appeared that Scott did not know how to evaluate when he was done with the task; thus he missed significantly more target letters. On a computerized attention task, Conners' Continuous Performance Test (Conners, 2000), Scott's response speed was atypically fast, suggestive of impulsivity, but he was able to sustain attention to the 15-minute task without apparent difficulty.

Conclusions

Test results indicate a bright youngster with exceptional verbal skills. The cognitive profile of significantly stronger verbal than nonverbal/visual skills suggests Scott may have some characteristics associated with a nonverbal learning disability, such as the cognitive rigidity his parents describe as well as difficulty reading social cues. Both verbal and visual memory skills are strong, but working memory is more problematic. Some attention problems were seen on clinic tasks. Both parents and teachers report significant problems with impulsivity and activity level, while parents also report significant problems with inattention, including distractibility, daydreaming, and difficulty concentrating. The greatest impediments to social–emotional adjustment and to academic performance at the present time appear to be related to weak executive skills, including problems with behavioral regulation (response inhibition, flexibility) as well as problems with task initiation, working memory, and sustained attention.

Recommendations

Scott has a number of executive skill weaknesses that warrant interventions. Priorities need to be set targeting those deficit areas that are having the biggest negative impact at the present time. Since both his parents and his teachers are primarily concerned with Scott's behavior and performance at school, designing interventions for this setting is most appropriate. Targeting impulsivity and work completion would address the most pressing needs. Strategies should include environmental modifications, a behavior plan built around an incentive system, and teaching specific skills to improve sustained attention and task completion. An intervention to address homework issues would also be warranted. Figure 3.1 depicts how the assessment data are linked to interventions. An intervention to address work completion in school is presented in greatest detail, beginning with problem definition and ending with an assessment of how the intervention worked. (See Form 3.1 on p. 187 in the Appendix for a reproducible version.) Figure 3.2 depicts the intervention design phase for two additional behavioral objectives.

(text resumes on page 45)

Student Name: Scott Date: 10/4/08

I. Data Sources—check all that apply

✓	Parent Interview	✓	Parent Checklists	✓	Classroom Observation
✓	Teacher Interview	✓	Teacher Checklists		Work Samples
	Student Interview		Student Checklists	✓	Formal Assessment

II. Areas of Need—fill in applicable sections

Response Inhibition (RI): The capacity to think before acting
Specific problem behaviors (e.g., talks out in class; interrupts; says things without thinking) 1. 2. 3.
Working Memory (WM): The ability to hold information in memory while performing complex tasks
Specific problem behaviors (e.g., forgets directions; leaves homework at home; can't do mental arithmetic) 1. Forgets to do homework unless prompted. 2. 3.
Emotional Control (EC): The ability to manage emotions in order to achieve goals, complete tasks, or control or direct behavior
Specific problem behaviors (e.g., "freezes" on tests; gets frustrated when makes mistakes; stops trying in the face of challenge) 1. 2. 3.
Sustained Attention (SA): The capacity to maintain attention to a situation or task in spite of distractibility, fatigue, or boredom
Specific problem behaviors (e.g., fails to complete classwork on time; stops work before finishing) 1. 2. 3.
Task Initiation (TI): The ability to begin projects without undue procrastination, in an efficient or timely fashion
Specific problem behaviors (e.g., needs cues to start work; puts off long-term assignments) 1. Starts tasks at last minute. 2. 3.

(cont.)

FIGURE 3.1. Executive skills: Planning interventions.

Planning/Prioritization (P): The ability to create a roadmap to reach a goal or to complete a task
Specific problem behaviors (e.g., doesn't know where to start an assignment; can't develop a timeline for long-term assignments) 1. 2. 3.
Organization (O): The ability to create and maintain systems to keep track of information or materials
Specific problem behaviors (e.g., doesn't write down assignments; loses books or papers) 1. 2. 3.
Time Management (TM): The capacity to estimate how much time one has, how to allocate it, and how to stay within time limits and deadlines
Specific problem behaviors (e.g., doesn't work efficiently; can't estimate how long it takes to do something) 1. 2. 3.
Goal-Directed Persistence (GDP): The capacity to have a goal, follow through to the completion of the goal, and not be put off by or distracted by competing interests
Specific problem behaviors (e.g., doesn't see connection between homework and long-term goals; doesn't follow through to achieve stated goals) 1. 2. 3.
Flexibility (F): The ability to revise plans in the face of obstacles, setbacks, new information, or mistakes; it relates to an adaptability to changing conditions
Specific problem behaviors (e.g., gets stuck on one problem-solving strategy; gets upset by unexpected changes to schedule or plans) 1. 2. 3.
Metacognition (M): The ability to stand back and take a bird's-eye view of oneself in a situation; the ability to self-monitor and self-evaluate
Specific problem behaviors (e.g., doesn't have effective study strategies; difficulty catching or correcting mistakes) 1. Makes mistakes; doesn't check work. 2. 3.

(cont.)

FIGURE 3.1. *(cont.)*

III. Establish Goal Behavior—select specific skill to work on

GOAL BEHAVIOR 1

Target Executive Skill: *Working memory, task initiation*

Specific Behavioral Objective: *Scott will write and follow a daily classwork schedule, as demonstrated by completing 90% of daily assigned tasks with no more than two adult verbal prompts.*

IV. Design Intervention

What environmental supports or modifications will be provided to help reach the target goal?
Presentation of brief tasks; alternate nonpreferred with preferred activities; closed-ended tasks (at least at first).

What specific skills will be taught, who will teach skill, and what procedure will be used to teach the skill(s)?

Skill: *To make and follow a daily classroom work plan.*

Who will teach skill: *Teacher.*

Procedure:
Step 1: The teacher arranges to meet with Scott to explain the process.
Step 2: They decide how often they need to meet and make a plan.
Step 3: Explain the planning template to Scott.
Step 4: Walk Scott through the planning template at the agreed-upon times. —
- *"Let's look at what you have to do."*
- *Make list of the tasks.*
- *Estimate how long it will take to do each task.*
- *Decide on start time for each task.*
- *Decide on breaks or other reinforcers.*

Step 5: Teacher cues start time.
Step 6: Teacher checks in at 10-minute intervals to make sure Scott's following the plan.

What incentives will be used to help motivate the student to use/practice the skill(s)?
Breaks between tasks (with opportunity to move around and/or read for pleasure).
Every other task is a preferred task (e.g., reading).

How will the outcome be measured?
Teacher will calculate percent assignments handed in on time and average number of prompts needed per assignment, using the following tracking form:

Date: _____
Number of assignments: _____
Number completed on time: _____
Number of prompts required per assignment (circle one):
1—Three or more prompts
2—One to two prompts
3—No prompts

V. Evaluate Intervention

Review date: _____

Was the behavioral objective met? Yes, completely: ____ Yes, partially: ____ No: ____

(cont.)

FIGURE 3.1. *(cont.)*

Assessment of efficacy of intervention components:

Environmental Supports/Modifications
Were they put in place? *Yes.*
Were they effective? *Yes.*
Do they need to be continued? *Yes.*
Plan for fading supports: *Don't fade template, but fade teacher questions as process becomes internalized in working memory and incorporate longer in-class tasks and more advanced assignments.*
Skill Instruction
Was the instruction implemented? *Yes.*
What was the outcome? *Scott can make and follow plan without step-by-step instruction.*
Does the instruction need to be continued?
Plan for fading instruction: *Current instructional sequence already faded.*
Incentives
Were incentives used? *Yes.*
Were they effective? *Yes.*
Do they need to be continued? *Yes.*
Plan for fading incentives: *Retain incentives but increase work time between breaks.*

Date for next review: _____

FIGURE 3.1. *(cont.)*

GOAL BEHAVIOR 2

Target Executive Skill: *Response inhibition*

Specific Behavioral Objective: *Scott will have "safe hands" (will not engage in hugging, pushing, tripping, kicking, punching, pinching, or other forms of unwelcome physical contact) with classmates.*

IV. Design Intervention

What environmental supports or modifications will be provided to help reach the target goal?

When working independently, Scott will select a work space greater than an arm's length away from the workspace of another child.

Make sure he is not in proximity to peers with whom physical contact is a high probability (i.e., other children with problems with response inhibition).

Before free-time activities, teacher will cue Scott to use "safe hands."

For any activity requiring physical contact, teacher will define permitted contact for Scott before the activity begins.

What specific skills will be taught, who will teach skill, and what procedure will be used to teach the skill(s)?

Skill: *To use safe hands.*

Who will teach skill: *Teacher.*

Procedure:

Step 1: Explain the skill being worked on ("safe hands"). Give alternative things to do with hands (e.g., fidget toys or a directed activity) when he's in situations where problems are likely to arise.
Step 2: Model the skill.
Step 3: Practice the skill, with constructive feedback.
Step 4: Bring in other children to help practice the skill.
Step 5: Cue him to use the skill in classroom and free-time situations.

What incentives will be used to help motivate the student to use/practice the skill(s)?

Verbal feedback; verbal praise.
The alternate activities themselves will be rewarding.
Checks or tokens if necessary.

How Will the outcome be measured?

Teacher will count number of reminders to use safe hands for each activity in which the problem is likely to arise, using the following tracking form:

Date: _____

Number of reminders required per activity (circle one):

1—More than one reminder

2—One reminder

3—No reminders

(cont.)

FIGURE 3.2. Examples of additional interventions targeting Scott's executive skills weaknesses.

GOAL BEHAVIOR 3

Target Executive Skill: *Working memory, task initiation*

Specific Behavioral Objective: *Scott will write and follow a daily homework schedule, as demonstrated by completing 90% of daily assigned homework with no more than two adult verbal prompts.*

IV. Design Intervention

What environmental supports or modifications will be provided to help reach the target goal?

Daily Homework Planner

Adult prompts to make sure homework plan is made and to cue start time(s)

What specific skills will be taught, who will teach skill, and what procedure will be used to teach the skill(s)?

Skill: *To make and follow a daily homework plan.*

Who will teach skill: *Parent/Teacher.*

Procedure:

Step 1: Arrange meeting with teacher, parent, and Scott to explain homework process to Scott.
Step 2: Decide on a set time to make the daily plan.
Step 3: Follow planning process—

- *"Let's look at what you have for homework."*
- *Make list of homework tasks.*
- *Estimate how long it will take to do each task.*
- *Decide on start time for each task.*
- *Decide on breaks or other reinforcers.*

Step 4: Parent cues start time.

What incentives will be used to help motivate the student to use/practice the skill(s)?

Breaks between tasks.
Fun activity to play when homework is finished.

How Will the outcome be measured?

Parents will calculate average number of prompts needed per homework session, using the following tracking form:

Date: _____
Number of assignments: _____
Number completed: _____
Number of prompts required per homework session (circle one):
1—Three or more prompts
2—One to two prompts
3—No prompts

FIGURE 3.2. *(cont.)*

FITTING EXECUTIVE SKILLS DEVELOPMENT TO RTI

Since writing the first edition of this book, many schools have begun using a RTI process to meet the needs of students with learning and behavioral problems. This is an integrated approach to service delivery that encompasses general and special education, developed to correct some of the shortcomings in traditional special education practice. According to experts (Batsche et al., 2005), RTI can be defined as "the practice of (1) providing high quality instruction/intervention matched to students needs and (2) using learning rate over time and level of performance to (3) make important educational decisions" (p. 3).

To date, RTI has been most widely applied to academic problems and has been used for students identified as having specific learning disabilities. However, the methodology is also increasingly used with students with behavioral challenges as well; thus, it is a versatile approach that can be applied across a broad array of skill deficits, including executive skills.

The key elements of the RTI model include:

- The emphasis on evidence-based instruction and classroom-based intervention.
- The emphasis on early identification and intervention. With RTI, children will not be required to fail before interventions can be implemented.
- The use of progress monitoring, based on objective student performance data, to inform instruction and decision making.
- The use of a problem-solving method to make decisions within a multitiered model. A multitiered model enables services to be deployed based on the severity of student need.

Typically, schools using RTI employ a three-tiered model of service delivery, depicted as a triangle (see Figure 3.3). At the *universal* level (Tier 1) are classroom or schoolwide programs designed to meet the needs of the majority of students. Examples include an evidence-based developmental reading program or a schoolwide positive discipline program. The *targeted* level (Tier 2) is designed to meet the needs of 10–15% of the student

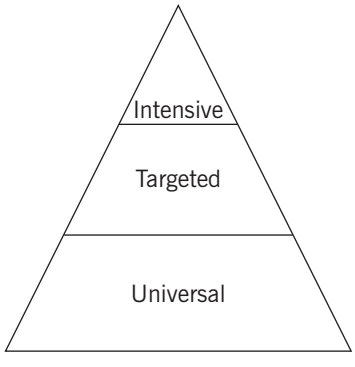

FIGURE 3.3. Three-tiered model.

population for which universal supports are insufficient. Targeted interventions are frequently small-group interventions such as Title I reading groups or social skills groups. For the 1–7% of students with chronic or more severe needs, *intensive* level interventions are required (Tier 3). These are highly individualized programs that deliver specialized instruction, in the case of learning problems, or comprehensive behavior support plans, in the case of behavioral problems.

Our clinical experience has taught us that students with executive skills weaknesses fall along a continuum just as students with other kinds of learning, behavioral, or emotional problems do. At the milder end of the continuum, whole-class interventions are successful. For a student who has trouble remembering to hand in his or her homework, for instance, it may be sufficient to institute a classroomwide homework collection procedure in which students are prompted to place their homework on their desk at the beginning of class and the teacher navigates the room checking off in a rank book the completed assignments.

Students with more pervasive working memory deficits may require a Tier 2 intervention. An example of this might be a small-group coaching arrangement that includes making sure assignment books have been filled in, that students have placed in their backpack everything they need for the night's homework, and that they have made a homework plan that includes attention to both nightly and long-term assignments. Under the guidance of a teacher, students in this kind of coaching group learn to make plans and timelines, develop strategies for remembering everything they have to remember, and make and use checklists to help them keep track of time and materials.

Students who are in danger of failing classes or failing a grade may need a Tier 3 intervention that is more intensive and more highly individualized. At this level, parents, teachers, specialists, paraprofessionals, and guidance counselors may all have a role to play in helping a student acquire the executive skills he or she needs to be successful.

Interventions that are appropriate for each tier will be presented in Chapter 8. For now, Table 3.4 lists the steps that should be followed in assessing the scope of the executive skill problem and designing appropriate interventions.

If the problem the child experiences is fairly discrete, the child's teacher may be able to make a relatively easy adjustment in teaching or classroom management without the need for moving beyond Step 2. Here are some examples of behavioral issues that may be related to executive skill weaknesses that can be handled in this way:

- Sam dawdles over independent seatwork. It takes him a long time to get started, he may engage in avoidance behaviors (sharpening his pencil, going to the bathroom, asking the teacher an unnecessary question), and he often stops in the middle of his work to engage in a conversation with other students sitting at his table. As a result, when the morning is done, Sam's work is not. His teacher feels he is a capable student who likes to get himself off task. She decides to see whether having him stay in from recess after lunch is enough to improve his work completion rate. She puts this consequence in place, and Sam's work completion rate rises to 95%.
- Alicia talks out during morning meeting without raising her hand and would dominate the discussion if allowed. Asking her to raise her hand has not been successful, because if she doesn't get called on right away, she blurts out whatever it was she wanted to say.

TABLE 3.4. Steps in Implementation of RTI for Executive Skills Problems

Step	Assessment process	Intervention level
Step 1:	Parent or teacher raises concerns about behavioral or academic performance that may be related to an executive skills deficit.	
Step 2:	Teacher, with or without assistance from teacher assistance team (TAT) or specialist such as school psychologist, implements an intervention to address the behavior of concern. Collect efficacy data.	Tier 1
Step 3:	If the problem is not solved at Step 2, school psychologist or TAT collects more information regarding the student. At a minimum, a screening that includes broad- and narrow-band assessment of behavioral issues is conducted (e.g., CBCL or BASC-2 and BRIEF), using both parents and teachers as informants. This step may also include parent/teacher/student interviews and classroom observation.	
Step 4:	Problem-solving team meets to design intervention. It may be a more intensive version of classroom-based intervention or it may be a small-group intervention (e.g., assigning student to after-school homework club). Collect efficacy data.	Tier 1 or Tier 2
Step 5:	If progress is inadequate, conduct functional behavioral assessment (FBA) and any other evaluations necessary to better understand the problem. Design multifaceted intervention involving parents, teachers, ancillary support staff, and the student. Collect efficacy data.	Tier 3

Her teacher takes her aside and explains why this is a problem. She suggests they work on "self-control." She explains that she will give Alicia four popsicle sticks at the beginning of circle time. Each time she calls out without raising her hand, she will give her teacher one popsicle stick. If she finishes the morning meeting with at least one stick left, she can choose a sticker. If she has three or four sticks left, she can choose an extra special sticker. Her teacher gives her a sticker book where she can collect her stickers. If she has earned at least four stickers at the end of the week, she gets to take the book home to show her mother. Within a month, Alicia has been able to bring the sticker book home 3 out of 4 weeks. Within 2 months Alicia and the teacher decide together she no longer needs the popsicle sticks or the stickers as reminders.

- Ms. Jacobs, an eighth-grade English teacher, has set up a bin on the table next to her desk and has instructed the class to put their homework in the bin on the way out of class. After trying this for a few weeks, she decides that too many kids are failing to hand in homework, either because they forget or because they didn't do it and they don't see any visible consequence for failing to hand in the work. She decides she needs to make the accountability more apparent and tells the class she is changing her collection procedure. From now on she will stand at the door as students leave and collect the assignments personally. Any students who fail to hand in the assignment will need to wait until the rest of the class has

left and then explain why they don't have the homework and what their plan is for getting it to the teacher (preferably by 4:00 that afternoon). With this new procedure, class homework completion rates increase from 60 to 90%.

Notice in each case the intervention is designed to address a single, specific problem, and there are data collection procedures built into the intervention in order to address efficacy. The problem is solved without having to move beyond Step 2 in the RTI implementation process.

For more pervasive or more intractable executive skills weaknesses, Tier 2 or Tier 3 interventions will be required. Guidelines for interventions appropriate for all three tiers are detailed in Chapter 8.

FORM 5.7

Long-Term Project-Planning Sheet

STEP 1: SELECT TOPIC

What are possible topics?	*What I like about this choice:*	*What I don't like:*
1.		
2.		
3.		
4.		
5.		

Final Topic Choice:

STEP 2: IDENTIFY NECESSARY MATERIALS

What materials or resources do you need?	*Where will you get them?*	*When will you get them?*
1.		
2.		
3.		
4.		
5.		

(cont.)

STEP 3: IDENTIFY PROJECT TASKS AND DUE DATES

What do you need to do? (List each step in order)	*When will you do it?*	*Check off when done*
Step 1:		
Step 2:		
Step 3:		
Step 4:		
Step 5:		
Step 6:		
Step 7:		
Step 8:		
Step 9:		
Step 10:		

Reminder List

Include here any additional tasks or details you need to keep in mind as you work on the project. Cross out or check off each one as it is taken care of.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____