Visual Supports for Students With Behavior and Cognitive Challenges

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In many schools, supports for children with a dual diagnosis of mental retardation and behavioral disorders are inadequate or nonexistent. Often these students are placed with teachers who, although appropriately trained and licensed, are not familiar with support strategies for meeting the behavioral and emotional needs of these students at an appropriate cognitive representational level. This article describes six evidence-based visual support strategies, their benefits, and simple methods for implementing them in the classroom.

In this article we present the fundamentals of using visual supports with children with significant cognitive delays and challenging behaviors. By increasing these children's comprehension and communication, we can reduce their general frustration and the specific inappropriate behaviors that often accompany that frustration. The basic steps presented here give general and special education teachers, related service providers, and parents a beginning point for implementing visual strategies to assist children who are unable to process abstract ideas or concepts commonly used in programs for students with severe behavioral and emotional disabilities.

Meet Tarah

Tarah is a third-grade student who receives instruction in a learning center for students identified as having cognitive disabilities. Her verbal ability is low; consequently, Tarah is able to comprehend only at a very literal level. Her overall cognitive functioning falls in the high-moderate range. Tarah also displays several physically and verbally aggressive behaviors. She begins her school day by swearing at the bus driver, fellow students she sees in the hallway, and her peers and teachers in the classroom. She bumps her chest against other students, trying to pick a

fight. When Tarah's teacher tries to engage her in class work, she throws materials, tears up papers, and knocks over furniture. During transition times, Tarah bolts out of the classroom without warning. She may run to the room next door or all the way down the hall and outside the building. Classroom interventions, such as time-out, have had little effect on these behaviors.

Tarah began the school year without a permanent special education teacher. The first long-term substitute placed in Tarah's class had licensure and experience in elementary education, but she had no prior experience with special education. She quickly decided that this setting was not suited to her teaching abilities and asked to be reassigned elsewhere. The second long-term substitute, although not a licensed teacher, demonstrated unflappable tolerance and was immediately drawn to the students, including Tarah. Unfortunately, she had no knowledge of strategies that could help Tarah manage her frustration and aggression (not to mention the problem behaviors of other students due, in part, to a lack of structure and consistency in their daily routines). In order for these students to achieve academic progress, effective supports needed to be put in place.

Special Education Services and the Needs of the Individual Student

Special education, that is, specially designed instruction as defined by the Individuals with Disabilities Education Improvement Act (IDEIA) of 2004, can provide a great deal of support to students with all types of unique configurations of abilities and disabilities. Numerous programs serve students in various settings, from the general education classroom with consultation to predominantly self-contained learning environments. The role of the Individualized Education Program (IEP) team is to determine the best possible program and placement to address the educational needs of an IDEIA-eligible child. Unfortunately, these teams occasionally do not find a "perfect fit" for a given child. Existing programs nearly always require modification—ranging from a tweak to a reinvention—to fit the needs of each child served in that particular setting. Such "personalization" (Knowlton, 1998, p. 95) is truly at the heart of IEP intentions and practices as set forth in IDEIA.

For students with emotional or behavioral disorders, many effective programs and supports exist; however, the majority of these programs require students to engage in higher-level thinking skills by reflecting on past events, rapidly processing and effectively responding to current information, and predicting future outcomes. Students with intact cognitive abilities may benefit from these programs; our concern rests with students who have significant cognitive difficulties along with emotional and/or behavioral (E/BD) concerns, and thus are unable to process verbal information at a sufficient level of symbolic representation.

Because of continued reliance on intelligence testing data to make placement decisions, many students with E/BD are placed in programs for students with cognitive disabilities staffed by teachers who may be unequipped to manage and modify their behaviors. That is, these professionals may have the appropriate training, licensure endorsements, and experience in mental retardation or learning disabilities but not in emotional or behavioral disorders. Students with emotional or behavioral disorders that are co-morbid with cognitive delays require supports and assistance beyond the scope of the typically trained teacher or service provider and especially an inexperienced teacher, student teacher, or substitute teacher.

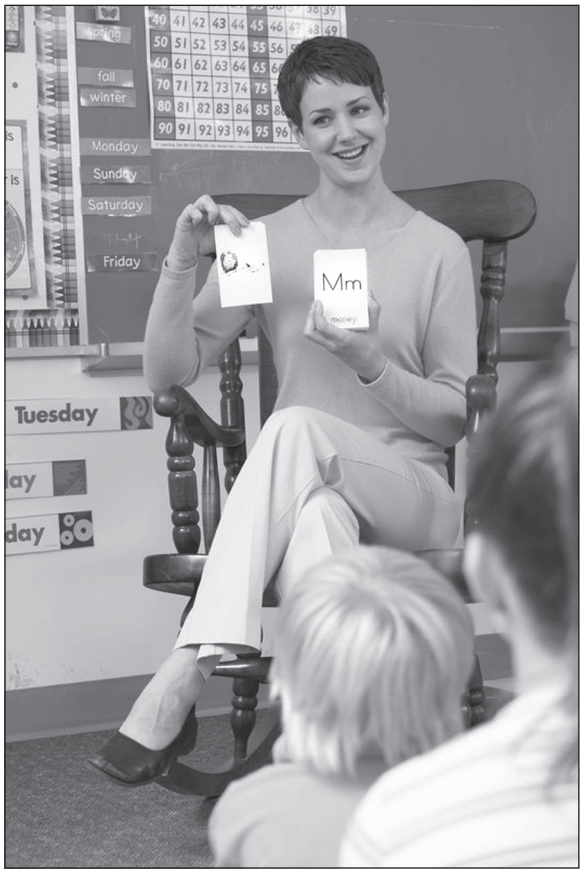
In this article, we offer readers assistance in making effective accommodations for students with both low cognitive skills and serious behavioral concerns through the use of visual supports. Specifically, our intent is to help educators gain an understanding of visual supports and begin implementing specific visual support strategies in the classroom. In Tarah's situation, a simple compendium of such information would have saved time, reduced frustration, and increased efficacy on the part of the substitute teacher.

What Are Visual Supports?

Visual supports are any visually perceived stimuli that assist us in comprehending environmental information and demands. We see examples everywhere in real-world community environments: Icons representing women or men (or hens and roosters, for that matter) on public restroom doors, flashing traffic lights, or arrows guiding our direction of movement are illustrative of visual supports. We all use some type of visual supports. Written contracts provide us with a highly abstract representation of our work responsibilities and benefits. Recipes tell us how to make our favorite meals. Calendars help us keep our appointments and commitments organized.

In the classroom, visual supports help students understand directions, schedules, rules, and instructional materials. Even the ubiquitous letters of the alphabet posted in classrooms constitute visual supports. Such supports can be presented with words or phrases, but the augmentation of printed words or phrases with such visual supports as photographs, hand-drawn pictures, graphics, or computer-generated icons (Tissot & Evans, 2003) actually benefit *all* students, but particularly students who are print-disabled or otherwise have difficulty reading.

For nonreaders and students who are nonverbal, pictorial icons offer several advantages over other communication systems (e.g., the written word, sign language). Pictures are universally understood and, therefore, can be generalized to most every functional setting. Further-



more, using pictures does not necessitate complex motor movements, so individuals having difficulties with eye–hand coordination and other fine motor functions may also find them useful.

Moreover, the use of pictorial icons and other visual supports enhances the use of both receptive and expressive language (Quill, 1995). Visual supports can play a number of communicative roles in the classroom and other environments in which the student must engage. For example, Quill (1995) described visual cues that are used in organization, the teaching of academic and life skills, communication, social interaction, and behavior management. Visual cues can help ease transitions from one activity to the next, empower a child by giving him or her a method to make needs or choices known to others, and provide feedback to a student about behavior expectations and current progress.

Combining visual cues with speech can help some children better understand what is verbally said to them. Some children who have no apparent problems with the mechanics of hearing are not able to process auditory input efficiently. They only respond appropriately when speech is paired with some type of visual cue, such as manual signing, gestures, pictorial icons, or other visual supports. In the case of each child, educators and caregivers need to determine if combining modes of communication (auditory and visual) helps a child understand better than using only one method, or if the child relies simply on the visual input received (Bondy & Frost, 2002). Visual supports are useful tools for children who can speak as well as those who are nonverbal. Even some highly verbal children may not have the receptive processing ability to understand what is orally said to them (Savner & Myles, 2000).

If it is determined that visual support strategies are the best approach for educating a student, these strategies are not meant to replace communication that is in total or in part mediated by spoken language. By pairing the two, receptive auditory skills can be enhanced. Further, visual supports are intended to be temporary and should be faded when the student begins to communicate and learn through more conventional means (Tissot & Evans, 2003). We recommend caution, however, about discontinuing visual supports completely. A better option is first to adjust supports to a less intensive format, such as smaller pictures or an increasingly sporadic pattern of pairing pictures with target stimuli before terminating visual support entirely (Savner & Myles, 2000).

Most of the available literature regarding Social Stories™ (Gray, 2000) and other visual supports is based on research applications with students with autism and Asperger syndrome. However, the same concepts can generalize to all children, especially those who have relatively low cognitive functioning (i.e., low–mild or moderate mental retardation).

Selected Visual Support Strategies

The following visual strategies have been divided into two basic categories. The first group, *information-gathering strategies*, includes Social Stories, comic strip conversations, and visual schedules. These strategies provide students with essential information about the environment around them in visual graphic form. They can help students understand the routine or order of events, the expectations of the students themselves, and the thoughts or feeling of others around them.

The second group, *empowerment strategies*, focuses on giving students shared control in the environment. Students are offered choices and given the opportunity to gauge various dimensions of their own behavior such as how often (frequency) or how long (duration). Students can take the information learned in the above strategies and use it to make appropriate choices and gain desired outcomes.

Information-Gathering Strategies

Social Stories. Social Stories are short narratives that follow a specific formula and describe one specific circumstance at a time. Developed by Carol Gray, Social Stories were originally designed for students with autism spectrum disorders. These students often do not know all the

concepts and corresponding words relevant to a social situation (Gray, 2000). The same may be said for many students with cognitive delays. Because they easily become frustrated by not comprehending and understanding social cues and by their lack of effective coping skills, these children may act out in inappropriate ways in an attempt to find stability and predictability in their environments. Social Stories give students precise information about what is happening in a given situation, concrete descriptions of relevant thoughts or feelings of others directly involved in the situation, and instruction to the student for behavior more appropriate and functional for the situation.

Social Stories have many uses in the classroom: to decrease inappropriate behaviors, increase desired behaviors, teach new skills, prepare students for upcoming changes, and reduce improper behaviors that might come with those changes. Numerous studies have confirmed that Social Stories can have a positive effect on behavior (Kuttler, Myles, & Carlson, 1998; Rogers & Myles, 2001; Scattone, Wilczynski, Edwards, & Rabian, 2002) not because they tell a student exactly what to do but because they explain why certain things happen and the meaning behind the actions we ask them to carry out in response to these occurrences. As their understanding of situations increases, students can learn to choose more functional responses.

Comic Strip Conversations. A strategy similar to Social Stories is comic strip conversations. Gray (1994) described comic strip conversations as a means to teach children with autism the art of conversation. Her version is a conversation between two people that is illustrated on paper as the conversation evolves. They are visually represented interactions among two or more people, wherein the critical information we are to learn is enhanced with the use of simple symbols, stick-figure drawings, or color (Glaeser, Pierson, & Fritschmann, 2003). These visual supports represent all aspects of a typical conversation; Figure 1 displays an example. Symbols can represent spoken words, a person's thoughts, interruptions, and listening. Colors can be used to represent the emotions of the participants in the conversation. By drawing the conversation as it happens, or replaying a previous conversation, the teacher helps the student work through the cause of the problem, gain insight into others' reactions, and devise possible solutions for future interactions.

Whereas Social Stories often are more useful with students who possess higher receptive and expressive language skills, comic strip conversations are tailored to students with limited language skills (Glaeser et al., 2003). Comic strip conversations have been shown to reduce outbursts and disruptive behaviors in students with or without disabilities who have limited language abilities, including students with limited English proficiency (Glaeser et al., 2003).

Gray (1994) suggested that students should take the lead in a comic strip conversation and do most of the talking and drawing. In the case of students with lower cognitive abilities, this is not always possible. If so, the adult can take the lead and do most of the drawing with input from the student. Student input can range from describing the situation and the accompanying details to pointing to where something should be drawn on the paper.

Comic strips or cartoons can be created as either a single drawing depicting one expectation or a series of smaller drawings showing a series of events. Both can be effective in a variety of situations. For example, a third-grade student was having great difficulty sitting appropriately during circle time. His hands were frequently on other children, and he kicked any objects or people near his feet. He got out of his chair repeatedly. The student had limited verbal ability and his written language consisted only of the ability to scribble on paper.

One day, the teacher sat with him prior to circle time and quickly created a cartoon depicting what his behavior should look like during circle time. After the teacher had drawn several chairs in a row, the student was able to point to the chair he would like to sit in. When the teacher drew the student's legs, he was able to respond that his feet should be on the floor. Similarly, he was able to demonstrate for the teacher that his hands should be drawn in his lap. He then helped fill in classmates in the other chairs and repeated the behavior expectations with each child in the drawing. The drawing served as an aid for that child each time he went to circle time. He took it with him each day for a few weeks (keeping it in his lap or under his chair) until the topography of his sitting behavior suggested he no longer needed a visual support. If behavior problems arose later, the teacher, without a word, simply handed him the drawing to help him remember the expected behavior.

In another case, a student refused to leave the classroom to use the restroom. She would sit on the floor, wiggle, hold herself, and cry. Even if an adult verbally prompted her to go to the restroom, she would ignore the directions and continue her behaviors. By talking through the situation with the student while she was calm and drawing each stage of the expected behavior as a comic strip, the teacher provided the student with a prompt for the appropriate behavior for her to follow when she felt the urge to use the restroom. When the teacher observed her begin to wiggle on the floor, she handed her the comic strip. The student soon began to verbalize her request to use the restroom without the disruptive behaviors previously seen.

Visual Schedules. Essentially, visual schedules use pictures, photos, or words to create the order of events or activities (Savner & Myles, 2000). They can be used in a

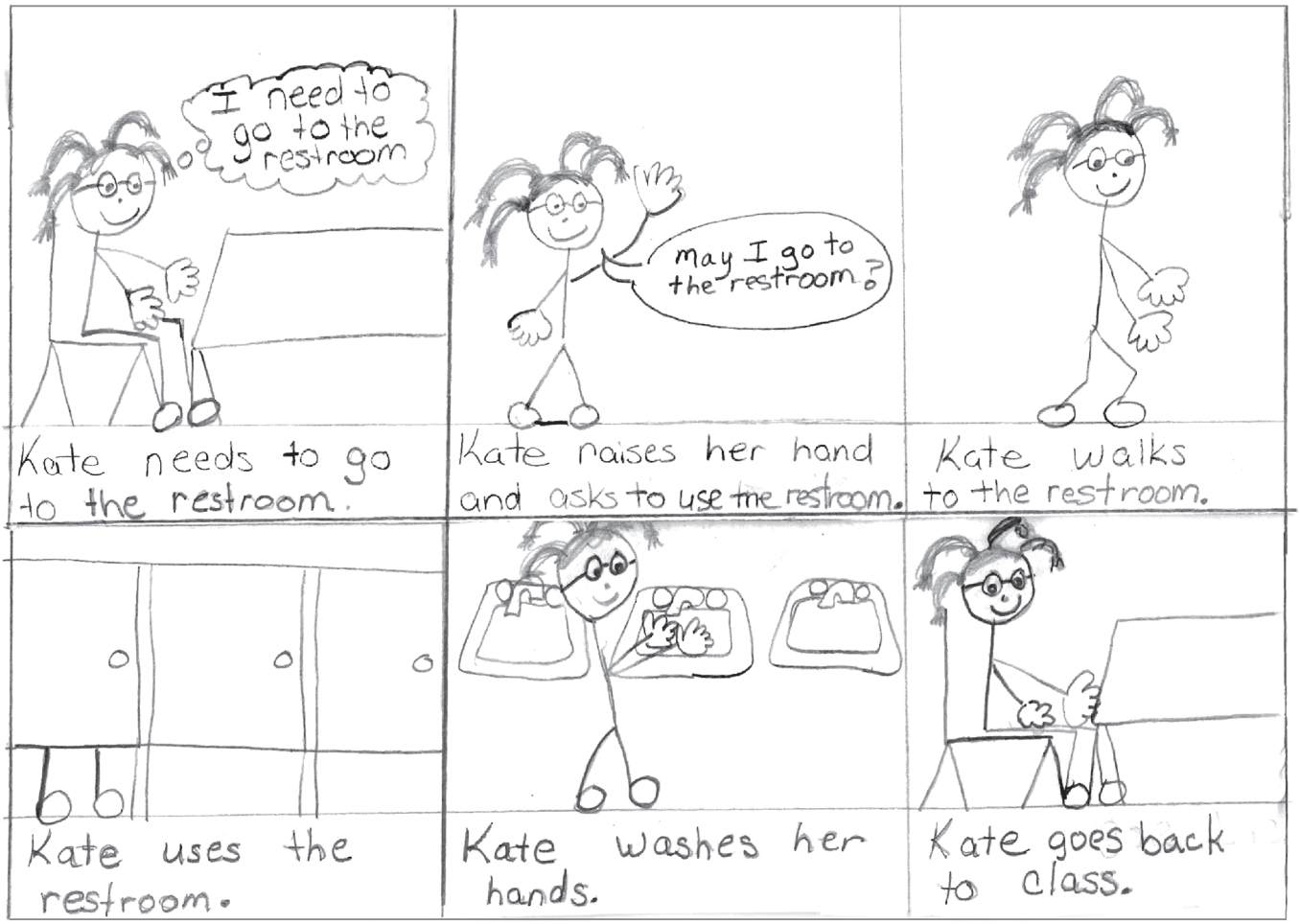


Figure 1. Comic strip conversations.

variety of ways. Large wall chart schedules can show the routine for the entire class. Small schedules can be individualized for a specific student's order of events. Schedules can be displayed vertically, illustrating the passage of time. They can be arranged horizontally from left to right, which reinforces the left to right direction of reading text. Visual schedules may also be organized into a flip book in which pages are turned after the completion of each activity. Whatever the format, visual schedules should provide structure and promote independence in completing tasks.

A visual schedule can be designed to cover a variety of time periods, depending on the preferences or needs of the child (Savner & Myles, 2000). For example, they can encompass relatively long periods of time, as might be the case with a monthly calendar showing school days and stay-home days, a weekend vacation, or an entire day's list of activities. They can also span shorter time periods or routines, including activities during reading class, an evening or bedtime routine, and a visit to the doctor's office. Choice boards, which will be described later, can also be integrated within visual schedules for some children. If there is a period of free time in the child's schedule, choices of activities to fill that time can be included.

Dettmer, Simpson, Myles, and Ganz (2000) found striking positive changes for two young boys with autism as a result of using visual schedules. For both boys, transitions between activities moved more quickly and smoothly; each boy required fewer verbal or physical prompts to complete work. One child even displayed more spontaneous verbalization when using a visual schedule. The other child was able to work more quickly in response to his schedule and a visual timer.

A slightly different approach to using a visual schedule is to focus on the reinforcing object or event for the child instead of the activity itself. One reason transitions can be difficult is that children may view the change in activity as the surrender of their current reinforcers. They do not want to relinquish a desired activity and, conse-

quently, act out in an attempt either to not lose the reinforcer or to express displeasure at such a possibility. Instead of using a visual schedule to signal the change of activities, the teacher can use it to illustrate that a different reinforcer will be available with the next activity and that the current reinforcer will be available during a future activity (Bondy & Frost, 2002).

Empowerment Strategies

Choice Boards. Choice boards give students a visual representation of their options at any given time. By pointing to or handing a picture or icon to another person, the student is able to communicate what he wants: what activity to do, what materials to use within an activity, where to complete the activity, whom to work with, and when to conclude the activity. Choices can and should be integrated into the daily schedule for a student.

Choice boards empower children to participate actively in their home, school, and community environments (Savner, 1999). By communicating their wants and desires, students who are not able to speak, read, or abstractly process complex verbal information can still engage in self-determining behavior by exercising some control over their environment, thereby reducing the probability of behavior problems related to control issues. Choice boards as a response mode also help students to learn about advocacy for themselves, responsibility for actions, and ownership of response outcomes. Boswell and Nugent (2002) found that choice boards also increased usage of functional spoken language in children with autism.

Token Boards. Token boards serve as conditioned reinforcers for positive behaviors. The fundamental concept of a token board is that it serves as a visual display for students who can earn a specified number of tokens contingent on their behavior or performance. Students subsequently "cash in" their tokens for a predetermined back-up reinforcer, chosen or determined to be preferred by the student and found to be reinforcing (i.e., increasing desirable behavior) for that student.

When deciding on possible back-up reinforcers, it is important to think beyond the mundane. Not all children view colorful stickers or candy as sufficiently rewarding. The two most effective ways to find out what motivates a student are to (a) observe her engage in non-contingent play and object manipulation, and (b) ask her or others who know her well (teachers, parents, siblings, paraeducators). Combining the observations of others who are familiar with the student with our own observations enables us to select reinforcing objects and events personalized to the preferences of that particular student. We then use the token board to display one or more of these back-up reinforcers, rotating them periodically to prevent satiation. Figure 2 shows several examples of various visual supports, such as schedules and token boards.

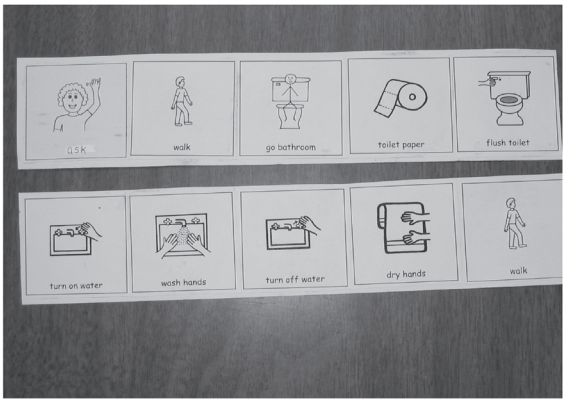
Rating Scales. Rating scales add the property of *gradation values* to social concepts, behaviors, or emotions. In behavioral terms, the scale provides a range of equal intervals (gradients) of the behavioral dimension of concern, frequency, magnitude, and so on, as expressed in "points," one through *n*. As a visual support, a gradation value thus becomes the common denominator of communication between the student and another person (teacher, parent, peer) since each party can both understand and express feelings or feedback via the scale. A student can say, in effect, that she is considerably anxious by showing her teacher a "scared" scale, signifying a high level of anxiety; similarly, a teacher might use a rating scale to indicate to a student that his talking exceeds the minimum loudness level allowed in the classroom.

Buron and Curtis (2003) developed a 5-point scale (i.e., five gradation values) to help students with autism and Asperger syndrome to monitor their own behavior, emotions, and effects on the immediate environment. A 5-point scale can be created to fit a wide range of social concepts, from anxiety level to voice volume. Students are taught to check in regularly with their scale and make changes when necessary. This system promotes self-monitoring as a behavior management tool. It also fosters self-advocacy in students who might not learn it in any other way. To enhance communication, scale-point numbers can be paired with visual cues such as facial drawings, photos of the child, or other illustrations that could help students identify their present position on the scale. The use of different colors at each stage is another alternative that helps students identify gradation values for a particular social concept (Buron & Curtis, 2003).

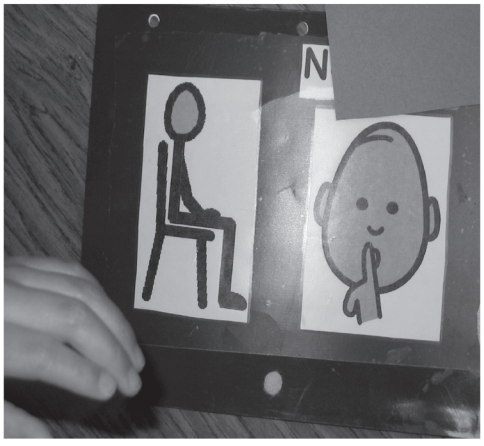
The Alert Program uses a sensory integration approach to "help children learn to monitor, maintain, and change their level of alertness so that it is appropriate to a situation or task" (Williams & Shellenberger, 1996, p. 3). Titled *How Does Your Engine Run?*, this program compares a student's body to a car engine. At times, the body runs too high and the individual becomes out of control and unable to focus. If, on the other hand, the body runs too low, the person will be sleepy or lethargic and unable to accomplish much of anything. The ideal "engine level" in most school situations would be in the middle, with enough energy to attend and learn but not so much that one is out of control. Through a series of strategic lessons, students are taught to be aware of their own engine speeds and use sensory activities to regulate themselves to an appropriate level.

As with the other strategies discussed previously, visual cues can and should be integrated into this approach when working with children. When introducing the program, drawings, photos, or even magazine cutouts can be

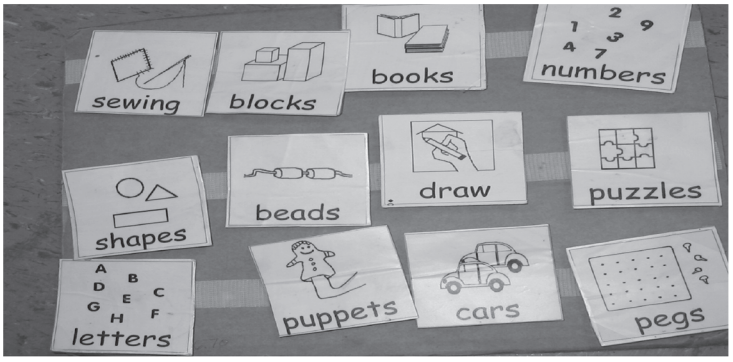
Whole-class daily schedule
(Picture It, © Slater Software, Inc.)



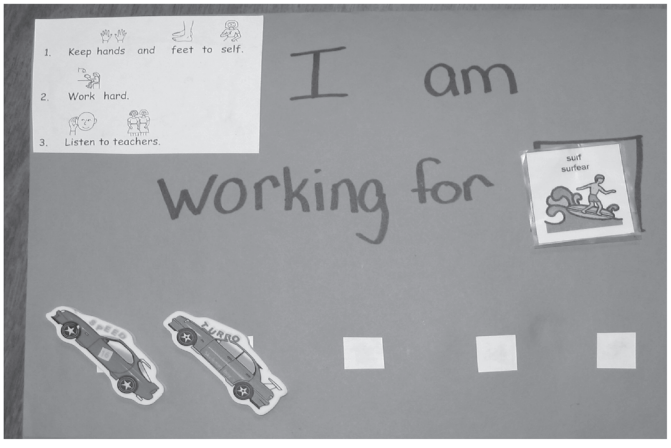
Schedule for a single routine
(Picture It, © Slater Software, Inc.)



Token board requiring 1 token
(Picture Communication Symbols ©1981–2006 by Mayer-Johnson, LLC)



Choice board for free time
(Picture It, © Slater Software, Inc.)



Token board requiring 5 tokens
(Picture Communication Symbols ©1981–2006 by Mayer-Johnson, LLC)

Figure 2. Examples of visual support strategies. *Note.* Photos of Slater Software products and Mayer-Johnson products used with permission.

used to illustrate how people might look at each level of alertness. Students can also employ a high-low chart to point out their engine levels. Pictures or icons can then be used in the form of a choice board for students to select sensory activities to match their state of alertness to a situation (Williams & Shellenberger, 1996). For students with difficulty regulating their moods as well as their behavior, this type of tool can assist them in getting their needs met in an appropriate manner.

How to Implement Visual Support Strategies

The following guidelines are meant as a beginning point to implement visual strategies in the classroom. Numerous approaches may be used when employing visual strategies. Professional judgment, knowledge of the individual student, and creativity are important factors in successful implementation. The best approach is tailored to the needs of the individual student, resulting in improved behavior and understanding by the student.

Social Stories

Begin the Social Story process by targeting a social concept or topic for which a student needs accurate information. This might be a situation where problem behaviors are occurring, new skills need to be taught, or simply a necessary level of social understanding must be acquired. Gather all relevant data, including who is involved, when and where the activity occurs, and how and why it occurs. If other people are involved, consider their perspective on the situation. Remember to put yourself in the child's shoes and look at the situation through their eyes.

Then, along with the student, begin writing the social story. It is helpful to adhere as much as possible to the following guidelines, as drawn from the work of Gray (2000), Kuttler et al. (1998), Rogers and Myles (2001), and Scattone et al. (2002):

1. For younger students, always write Social Stories in the first person, as if you are the student speaking. Write in the third person for secondary-level students or adults.
2. Use the present tense in most situations. (If the story is written to prepare the child for an anticipated event coming up, then the future tense would be more appropriate.)
3. Make sure to answer all "wh" (who, what, where, why, when) as well as how questions in the story.
4. Use positive statements (i.e., what people should do, instead of what they should NOT do).
5. Follow a basic ratio of sentence types. According to Gray (2000), four main types of sentences are used in Social Stories: descriptive, perspective, affirmative, and directive.
   - *Descriptive sentences* objectively describe the who, what, where, and why aspects of a situation. They give basic information about what is happening.
   - *Perspective sentences* describe the thoughts and feelings of other characters in the story. They give the target student insight into why other people do the things that they do.
   - *Affirmative sentences* state an accepted opinion about a previous statement (i.e., "Students cross their arms when walking in the hall. This is a good idea.").
   - *Directive sentences* give the student a suggested appropriate response to the situation. Be careful to state directive statements in a positive manner. Try not to limit options of the student. Begin directive statements with phrases such as "I will try to …" or "I can try to …"

The basic Social Story ratio is no more than one directive sentence for every two to five descriptive, perspective, or affirmative sentences.

There are also several miscellaneous considerations to keep in mind. It is important to use vocabulary and print size customized to the needs of the student. Entitle your story in a way that reflects the critical, defining message of the story. If needed, add simple and clear illustrations to help students understand the text. Introduce the story to the student when things are going well. Keep the atmosphere positive and relaxed. Finally, review the story once a day with the student or prior to the event described in the story. Also, invite other people to read the story with the student, especially those depicted within the story. For nonreaders, the story can be put on audio or videotape for the student to review independently.

Comic Strip Conversations

Don't recoil at the thought of having to create a comic strip. You don't need to be a pro at it. The easiest tools to begin a comic strip conversation are a piece of blank paper and a pencil. Sit side by side with the student with the paper between you. Decide if the situation lends itself best to a single large drawing or a series of smaller illustrations. If a series is more fitting, separate the paper into four to six panels.

Begin by setting up the situation with the student. For example, "Let's draw what circle time should look like." Keep the mood positive. Draw the situation, labeling everything as you draw for the student. Ask the student for input as you go along. Don't worry about your drawing ability. Every image will become what you say it is in the mind of the student. As you draw the student into the picture, point out (or ask the student) how and where her body is positioned. Encourage the student to participate as much as possible. This might include drawing or writing, verbally describing the situation, acting out

the situation, or pointing to where things belong in the drawing.

Stress the target behavior as you draw. If the target behavior is keeping hands and feet to self, point this out as you draw the student into the picture: "When we line up, where should your arms be?" Introduce other settings in which hands and feet to self is critical to success (e.g., restroom, cafeteria, auditorium).

One technique that can make this a more meaningful and pleasurable experience is to personalize the student in the drawing. If the student wears glasses, draw glasses. If the student has a distinct hairstyle, try to draw that. Based on past experience, this simple feature adds meaning for the student and helps him or her feel special. He or she will want to use it in the future. After the drawing is complete, ask the student to retell the story to you.

Give the student ownership of the drawing. Make it available for the student to review when he or she feels the need. When things are going well, give the student a choice as to whether the drawing should be close by as a reminder. If the student begins to lose control of his or her behavior, handing the drawing to the student might be enough to help him or her regain control. Make multiple copies of favorite drawings in case they are destroyed. Laminate drawings you repeatedly use to help them last longer.

Visual Schedules

Begin a visual schedule by breaking the day or class period into major chunks of time that are meaningful to the student. Depending on the needs of the student, the entire day can be shown on one schedule, or portions of the day (i.e., morning, afternoon, evening) can be on separate schedules (Savner & Myles, 2000). It is not always necessary to include every detail of the day in the visual schedule. Special or one-time-only activities such as a trip to the doctor's office or field trip typically necessitate a separate visual schedule.

Decide on the level of representation (object, photo, line drawing, word) that best fits the level of understanding of the student who will be using the schedule. Whatever level you choose to use, be sure that the visual depiction of the activity is clear to the student. In addition, the following guidelines, assimilated from the work of Bondy and Frost (2002), Dettmer et al. (2000), Savner (1999), and Savner and Myles (2000), are helpful in creating visual schedules:

1. Schedules can be created for an entire class or an individual student.
2. Entire class schedules can be a wall chart, flip chart, or Velcro board.
3. Individual schedules can be in small flipbooks, in a wallet or photo album, on the back of a ruler, or on the inside flap of a notebook.
4. To signify a completed activity, students can turn the picture over, flip the page, or place the picture/object in a "finished box."
5. Incorporate choices into the schedule. Examples include choices of activity, snack, or who to work with during an activity.
6. For some students, adding times or a picture of a clock to icons will help them learn not only the order of events, but also the times at which they occur.
7. When a student asks what to do next, refer him to the schedule instead of telling him directly. This helps build independence and self-direction.

Choice Boards

To create a choice board, begin by selecting an opportunity during the day when a student has choices. Examples include snack time or free time. Create visual representations of the available choices using actual objects, drawings, photos, or icons. Present these visuals to the student and allow time for her to point to or pick up the desired object. Only present options that are available at that time. By granting the request made by the student, you help her make the connection between the visual and the desired object. Acknowledge the student's choice by verbally labeling the choice ("You chose blocks."). Then, give the student the chosen item or allow her to get the item for herself.

Token Boards

Begin with a choice board of possible back-up reinforcers selected on the basis of observations of the student and/or the views of significant others as to his preferences. Try to think unique. Once you have a selection of rewards that are reinforcing for the student, ask the child to select a reward he would like to work for. Then place that icon at the top of the token board.

Provide a neutral activity (i.e., one the student finds neither particularly desirable nor undesirable) that you know the student is capable of completing and ask her to complete it. When the student completes the activity, place one token on the token board. Let her instantly cash in the token for the chosen reward. Repeat this procedure until the student shows a clear understanding of the connection between doing what you ask and receiving reinforcement. When this happens, you can begin to ask her to do less desirable activities. Again, she gets a token to put on the board that can immediately be turned in for a reward. If necessary, give tokens for partial compliance at first until the student learns exactly what is expected.

As the student masters earning one token, require more work for the same reward. For example, add a second Velcro circle to the board that the student must fill with a token before the reward can be earned. Continue to add spaces for tokens until at least 5-6 tokens must be earned to receive a reward. Be sure to pair each token with verbal praise and other social reinforcers (smile, thumbs up, etc.).

As students become proficient at earning tokens, instead of just giving out tokens, add verbal praise between tokens to let students know they are doing well. Delayed rewards (requiring the student to wait for a few minutes or longer before getting an earned reward) also help students become less dependent on the token rewards.

Rating Scales

Buron and Curtis (2003) and Williams and Shellenberger (1996) provide numerous applications of rating scales. To illustrate one of these applications, introduce students to the three levels of alertness and teach "engine" words (high, low, just right) (Williams & Shellenberger, 1996). Examples of how to demonstrate alertness levels could include:

1. Looking through books or magazines for pictures of people. Have students decide if the people in the pictures are running high, low, or just right.
2. Having students "act out" each level of activity.
3. Making a mural consisting of three separate collages of pictures of people at each level of activity.
4. Describing or having students describe examples of when it is okay to run low, just right, and high (i.e., "At recess, it is okay if your engine is running high." "Your engine should run low at bedtime."). Or you could give an example of an activity and ask students to name the level they should be running during that activity.
5. Display a visual of each level (line drawing, photos). You could even use the mural created above.

Once students have mastered each level of activity and understand what it means to be running low, middle, and high, begin to discuss how to change your current level. For example, if I am running too high and need to calm down, it helps me to read a book or listen to soft music. Make lists of activities that students can utilize to calm down or rev up their engine when necessary. Line drawings, icons, or photos can accompany each idea. These can then be used as a choice board for students who need to change their level of activity.

Display revving up and calming down choice boards along with the corresponding levels. Encourage students to rate their own levels of activity throughout the school day. Point out behaviors occasionally as you see them naturally occur ("Oh, you have your head resting on the table. Is your engine running low this morning?").

When behaviors begin to become disruptive or otherwise problematic, direct students to the choice boards to select an activity that will alter their current level of behavior in the desired direction. As students become more proficient, they will often be able to monitor their own behavior, using 5-point scales, for example, and indicate what help they need to maintain target behaviors at desired levels.

A Typical School Day for Tarah

Tarah is the 9-year-old third grader we introduced to you at the outset of this article. She has a dual diagnosis of mental retardation and E/BD. She lives in an urban setting with her mother, stepfather, two older sisters, and one younger brother. Tarah began school in an early childhood classroom for students considered at risk. From there, she

transitioned into kindergarten at her home school with learning center support, speech and language therapy, and occupational therapy services. Within a short time, the staff in her home school realized that she presented behavioral challenges that were beyond their teaching and management knowledge and skills. She was subsequently moved to a program for students with severe E/BD. She was far below the academic level of the other students in her class and was aware that her work was different from that of the other students. Tarah remained in that class for 2 years, until March of her second-grade year. The IEP team then determined that she needed a functional academic and life-skills curriculum to meet her needs. She was again transferred to a new program in a different school.

In all settings, Tarah displayed many troubling behaviors. She had limited functional language; she could speak in short phrases and was especially good at "street slang" and profanity. Occasionally, Tarah completely shut down and refused to speak, often crawling under a table or into a corner. This could last from a few minutes to 2 hours. Tarah frequently threw things without warning, from a pencil to a desk. There seemed to be no obvious pattern to her behavior. The only clear trigger for inappropriate behaviors was asking Tarah to complete any academic work, written or verbal. Even work disguised as play would cause her to throw materials or furniture, yell out profanity, or shut down completely.

This is a sample of what a school day for Tarah might look like. It is a day that would take place after many weeks or even months of instruction using consistently applied visual strategies. This is meant as a picture of a possible "ideal" day using all of the strategies presented herein and integrated throughout Tarah's routine.

8:30 a.m.—Tarah arrives at school on the bus. She is greeted by a paraeducator and escorted to the classroom. Once in the classroom, Tarah is greeted by her teacher and does a quick check-in with a rating scale (high, low, or just right) as to how she is feeling. She was sleeping on the bus this morning and her engine is running low, so she is allowed 3 min to engage in an activity to rev up her engine level. She has the choice of jumping jacks, having a drink of cold water, or bouncing a ball. The time is kept with a visual timer so that Tarah knows when time is up.

When she is ready to work, Tarah makes a choice of a reward to work for from her choice board (play with the koosh ball, tear paper into scrap box, drop coins in a can, or listen to music with headphones). She chooses the koosh ball so the icon for koosh ball is placed on her token board. Also on her token board are visual representations of the class expectations: keep hands and feet to self, listen to teachers, work hard. Periodically throughout the day, she will earn tokens for behavior consistent with those expectations. For this first work period, she must earn five tokens to play with the koosh ball.

8:45 a.m.—Tarah begins writing/drawing in her daily journal. She earns a token by working diligently on her journal. When finished with her journal, Tarah "reads" her Social Story for circle time with a paraeducator. The Social Story describes the activities during circle time and the typical behaviors expected of students during circle time.

9:00 a.m.—Tarah goes to circle time along with the rest of her class. During circle time, the teacher displays the visual schedule for the day and reviews it with the students. Tarah has her own miniature copy of the schedule inside a folder. As each activity of the day is completed, she removes that icon and places it in the "finished" envelope, also in the folder. Tarah earns two more tokens during circle time for listening.

9:35 a.m.—Tarah proceeds to her reading group with two other students and a paraeducator to work on recognition of safety and environmental signs. She earns two more tokens and is given 5 minutes to play with a koosh ball. The visual timer is once again used to signal when time is up. Tarah chooses a new reward from the choice board to work for. This time she chooses to tear paper.

10:00 a.m.—The next group activity is fine motor skill-building. Tarah's task is to practice writing her name. She does not prefer paper/pencil activities and refuses to work. She throws her pencil across the table. After she has a few minutes to cool off, the paraeducator sits with Tarah to draw a comic strip conversation for group time. She draws Tarah sitting at the table with a classmate. The paraeducator helps Tarah describe what is happening in the picture. Tarah keeps the picture for the remainder of the period and completes a small amount of work. She earns one token at the end of the period.

10:25 a.m.—It is now break time for everyone. Tarah checks in again with the rating scale. She is feeling more in control, and believes her engine is running "just right." She has a small snack and chooses to eat alone.

10:35 a.m.—Tarah goes to her math group and practices sorting and naming coins with the teacher. She works well in this activity and earns another token.

11:00 a.m.—Tarah has 15 min to work on the computer. Since this is a highly desirable activity, she simply earns verbal praise for working well.

11:15 a.m.—It is time for recess. Tarah lines up within 1 min of the whistle and earns a token.

11:45 a.m.—The class prepares for lunch. Before lining up, Tarah reviews a Social Story for lunch with peers. The story reminds her to use kind words with her friends and gives possible conversation starters (i.e., "How are you today?" or "What did you do last night?"). Tarah uses another choice board with her peers' pictures. She chooses whom she would like to have lunch with that day.

12:30 p.m.—Tarah returns to the classroom. She reviews the visual schedule with the teacher to remind her of the afternoon activities. The class participates in story time and a short rest period. Tarah earns another token for keeping her hands and feet to herself and listening to the teacher.

1:00 p.m.—It is P.E. time for Tarah's class. Tarah enjoys P.E. but tends to become overly excited, which causes her to not follow directions and to touch others aggressively. The P.E. teacher refers Tarah to the rating scale and points out that her engine is running too high. He gives her a few options from which she can choose to help her calm down. She chooses to listen to soft music with headphones for 5 minutes. After this, the P.E. teacher allows Tarah to rejoin the group activity. She earns a token during P.E. and, in line with the five-token contingency, is now free to tear paper into the scrap box as chosen prior to the 10 a.m. fine-motor skill-building period. She then chooses another reward to work for. Once again, it's the koosh ball.

1:30 p.m.—Tarah goes to music class, where she is attentive and involved. She earns two tokens while in music.

2:10 p.m.—The class returns to the room, where a special project waits for them. They have been learning about plants, and today they are going to plant seeds. This is a hands-on activity that features salient sensory experiences, and, predictably, Tarah does well, earning two more tokens.

3:15 p.m.—Tarah and her classmates enjoy a snack before they go home. They each use a choice board with three snack options. She chooses to eat pretzels. She earns an additional token and plays with the koosh ball during the last 5 minutes of school. She takes home a note that lets her parents know how many time she received a reward that day.

3:20 p.m.—Tarah prepares to go home by stacking chairs, packing her book bag, and putting on her coat. She walks to the bus with her classmates and teacher.

With proper preparation and adaptations by her teacher and the other professional staff members involved in the implementation of Tarah's IEP, this is how a typical school day for her might have proceeded. As visual strategies provide for positive behavior changes and academic progress, they should gradually and systematically be faded to encourage readiness for increased student independence and self-determination.

Students come in all shapes, sizes, and abilities, and special education has come a long way in developing evidence-based practices to facilitate learning for all students. Although the possibilities for effective use of these strategies are many and varied, there is still much to learn through research on the use of visual strategies with difficult-to-teach children and youth.

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