Chapter 1

Handling Social Misbehavior

THE SOCIAL AND EMOTIONAL BRAIN

"I was so angry, I couldn't think straight!" "He got me so mad, I nearly hit him!" Both of these statements make it clear that emotions were running high. Human beings have been interacting with emotions for thousands of years, but understanding where they come from and how they direct our behavior is still not fully understood. Nevertheless, thanks to the development of brain imaging techniques, researchers have made substantial progress in discovering the underlying neural networks that encourage and inhibit certain behaviors. After all, we are not just information processing machines. We are also motivated, social, and emotional beings who are constantly interacting with our environment. Schools and classrooms are particularly demanding environments because so many different personalities gather together in a confined area where they are expected to interact according to established rules of accepted emotional and social behavior.

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So what is happening inside the brain of students who display socially unacceptable behavior? Are these just temporary responses to a particular situation or are they symptoms of an underlying disorder? Do we immediately refer the student for mental evaluation or try a classroom intervention that may improve the behavior? These are difficult questions. But before we can answer them, we need to review some of what scientists know about how emotions are processed in the brain. The

purpose here is not to make educators into neuroscientists. But the more teachers know about how the emotional brain works, the more likely they are to choose instructional strategies that will lead to appropriate student behavior and successful student achievement.

Emotional Processing

Long before the advent of brain imaging technology, researchers in the 1950s suggested that the structures responsible for processing emotions were located in the mid-brain, an area that Paul MacLean (1952) described as the *limbic system* (Figure 1.1). His work was very influential and the term "limbic system" persisted and continues to show up in modern texts on the brain. However, current research does not support the notion that the limbic system is the only area where emotions are processed, or that all the structures in the limbic system are dedicated to emotions. Brain imaging shows that the frontal lobe and other regions are also activated when emotions are processed, and limbic structures such as the hippocampus are involved in nonemotional processes, such as memory. In light of these newer discoveries, the trend now is to refer to this location as the "limbic area," as we have in Figure 1.1.

MacLean also described the *frontal lobe* (lying just behind the forehead) as the area where thinking occurs. We now know that the frontal lobe comprises the rational and executive control center of the brain, processing higher-order thinking and directing problem solving. In addition, one of its most important functions is to use cognitive processing to monitor and control the emotions generated by limbic structures. In this role, the frontal lobe is supposed to keep us from doing things when we are angry that we would regret later, and from taking unnecessary risks just to indulge emotional curiosity or please others.

Development of the Brain's Emotional and Rational Areas

Among other things, human survival depends on the family unit, where emotional bonds increase the chances of producing children and raising them to be productive adults. The human brain has learned over thousands of years that survival and emotional messages must have high priority when it filters through all the incoming signals from the body's senses. So it is no surprise that studies of human brain growth show that the emotional (and biologically older) regions develop faster and mature much earlier than the frontal lobes (Paus, 2005; Steinberg, 2005). Figure 1.2 shows the approximate percent development of the brain's limbic area and frontal lobes from birth through the age of 24 years. The limbic area is fully mature around the age of 10 to 12 years, but the frontal lobes mature closer to 22 to 24 years of age. Consequently, the emotional system is more likely to win the tug-of-war for control of behavior during the preadolescent years.
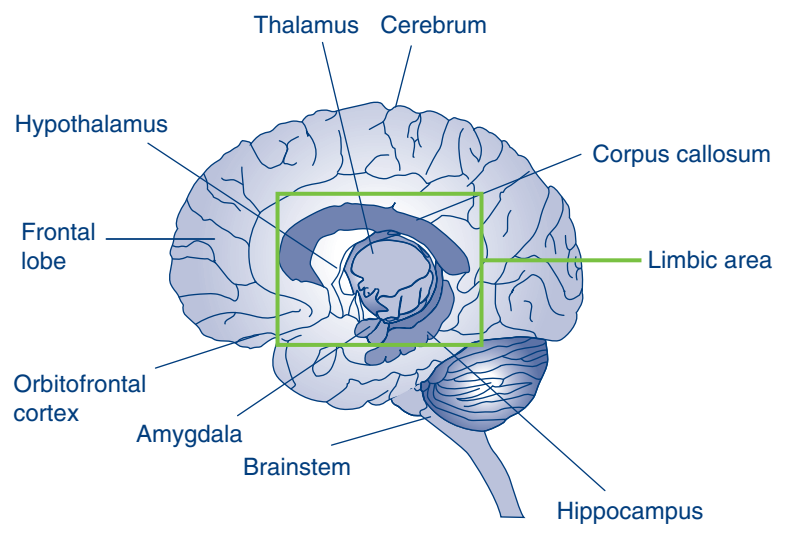
Figure 1.1   A cross section of the human brain showing major structures and highlighting the limbic area buried deep within the brain.

What does this mean in a classroom of preadolescents? Emotional messages guide their behavior, including directing their attention to a learning situation. Specifically, emotion drives attention and attention drives learning. But even more important to understand is that emotional attention comes *before* cognitive recognition. For instance, you see a snake in the garden and within a few seconds your palms are sweating, your breathing is labored, and your blood pressure is rising—all this before you know whether the snake is even alive. That's your limbic area acting without input from the cognitive parts of the brain (frontal lobe). Thus, the brain is responding emotionally to a situation that could be potentially life-threatening without the benefit of cognitive functions, such as thinking, reasoning, and consciousness (Damasio, 2003).
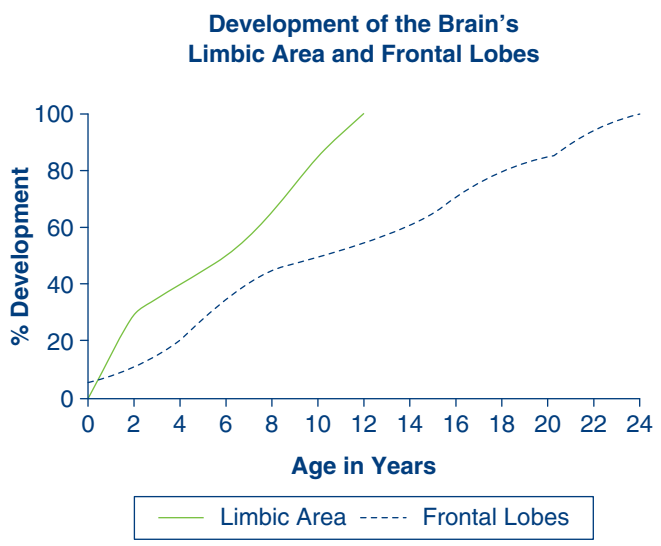

Figure 1.2   Based on recent studies, this chart suggests the possible degree of development of the brain's limbic area and frontal lobes.

Source: Adapted from Paus, 2005, and Steinberg, 2005.

Preadolescents are likely to respond emotionally to a situation much faster than rationally. Obviously, this emotional predominance can easily get them into trouble. If two students bump into each other in the school corridor, one of them may just as likely respond with a retaliatory punch than with a "sorry." On the positive side, this emotional focus can have an advantage when introducing a lesson. Getting the students' attention for a lesson will be more successful when they make an emotional link to the day's learning objective. Starting a lesson with "Today we are going to study fractions" will not capture their focus anywhere near as fast as asking whether they would rather have one-third, one-fourth, or one-sixth of a pizza. Whenever a teacher attaches a positive emotion to the lesson, it not only gets attention but it also helps the students to see real-life applications.

The Orbitofrontal Cortex: The Decision Maker

As investigations into emotions have become more extensive, it is clear that emotions are a complex behavior that cannot be assigned to a single neural system. Instead, different neural systems are likely to be activated, depending on the emotional task or situation. These systems might involve regions that are primarily specialized for emotional processing as well as regions that serve other purposes. However, two brain areas whose prime function appears to be processing emotions are the *orbitofrontal cortex* and the *amygdala* (Gazzaniga, Ivry, & Mangun, 2002).

The orbitofrontal cortex is at the base of the frontal lobe and rests on the upper wall of the orbit above the eyes (Figure 1.1). Research of this brain area indicates that it regulates our abilities to evaluate, inhibit, and act on social and emotional information. Exactly how this regulating effect works is still not fully understood, but imaging studies continue to provide clues. Brain scans reveal that a neural braking mechanism is activated for a few milliseconds (a millisecond is 1/1,000th of a second) when adults are asked to make a decision based mainly on an emotional stimulus. The braking signal is sent to a region near the thalamus (see Figure 1.1) which stops motor movement. A third brain region initiates the plan to halt or continue a response. The

> *The brain's frontal cortex activates a braking mechanism that halts movement for a few milliseconds to allow an individual to decide what action to take in response to an emotional stimulus.*

signals among these brain areas travel very fast because they are directly connected to each other. In this process, putting on the brakes may provide just enough time for the individual to make a more rational and less emotional decision (Aron, Behrens, Smith, Frank, & Poldrack, 2007). However, the less mature the regulating mechanisms are, the less effective this braking process can be. As a result, the abilities regulated by the systems in the orbitofrontal cortex essentially form the decisions we make regarding our social and emotional behavior.

Social Decision Making. One way in which we make decisions is to analyze incoming and internal information within a social context and then decide what action to take. For example, we might be so upset by something that we just want to shout out a cry of disgust. But if at that moment

we are riding on a packed bus or walking through a crowded shopping mall, the social context (Will these people think I'm insane?) inhibits us from doing so. In schools, students often refrain from doing what they really want

> *Social context is a powerful inhibitor or encourager of behavior.*

for fear of what their peers will think of their behavior. For instance, some students regrettably do not perform to their potential in school because they fear that their peers will think of them as nerds or teacher's pets and thus ostracize them from their social group. On the other hand, students sometimes perform risky behaviors (e.g., underage drinking, reckless driving) just to get their peers' attention. Social context, therefore, is a powerful inhibitor or encourager of behavior.

People with damage to the orbitofrontal region have difficulty inhibiting inappropriate social behavior, such as unprovoked aggressiveness, and have problems in making social decisions. Also, although they fully understand the purposes of physical objects around them, they often use them in socially inappropriate ways. For example, a student with this deficit knows well that a pencil is for writing, but may be using it to repeatedly poke others.

Emotional Decision Making. Because social cues often give us emotional feedback, how we act in a social context cannot easily be separated from how we evaluate and act on emotional information. Nonetheless, experimental evidence suggests that the orbitofrontal cortex evaluates the type of emotional response that is appropriate for a particular situation. Sometimes, this means modifying what would normally be an automatic response. For example, think of a toddler eyeing a plate of chocolate chip cookies. If the child is not allowed to have one, the frustration could well cause the child to throw a fit and physically display anger by kicking and screaming. His brain's frontal lobes have not developed sufficiently to moderate the impulse. Thus the child readily shares his emotions with everyone around him. Now an older child in the same situation might feel like throwing a fit but his frontal cortex has developed further and moderates the impulses. Head injury, abuse, alcoholism, and other traumatic events can interfere with the brain's ability to moderate emotions, resulting in a more primitive level of behavior inconsistent with the child's age.

Here's another example. We generally laugh out loud at a really funny joke. But doing so, say, at a lecture or in church would not be the emotionally appropriate action. Thus, the orbitofrontal cortex quickly evaluates the social situation and overrides the typical response of loud laughter (Rolls, 1999). To perform this function successfully, the orbitofrontal cortex has to rely on learned information from other brain structures. One of those structures that interacts with the orbitofrontal cortex is the amygdala.

The Amygdala: A Gateway for Emotional Learning

The amygdala (Greek for "almond," because of its shape and size) is located in the limbic area just in front of the hippocampus, one in each of the brain's two hemispheres (Figure 1.1). Figure 1.3 shows the location of the amygdala on each side of the brain. Numerous studies have indicated that

the amygdala is important for emotional learning and memory. These learnings can be related to implicit emotional learning, explicit memory, social responses, and vigilance. Let's briefly explain each of these.

Implicit Emotional Learning. Suppose a student lives in a neighborhood where gang shootings are not unusual. The sound of gunfire produces fear in the student. If the student hears a car backfire in the school parking lot, that same fear reaction will occur. That's because the student's amygdala has associated a neutral stimulus (car backfiring) with a fearful event (a gun shot). This implicit learning has resulted in what is call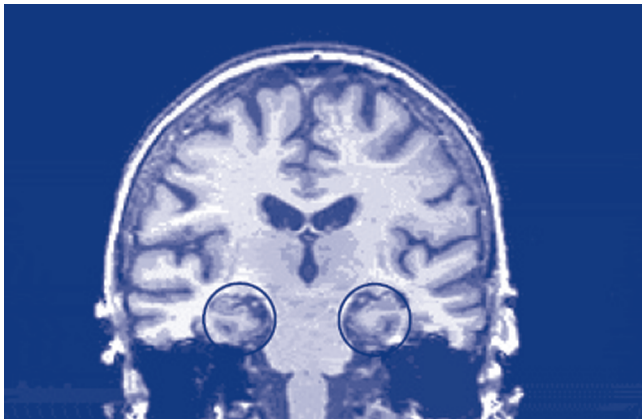ed *fear conditioning.* Someone coming upon a snarling dog would have a similar reaction. Information from the visual processing system would activate the amygdala which would immediately send signals to the brain stem to increase heart rate and blood pressure as well as to the frontal lobe to decide what action to take.

Figure 1.3   The circles show the location of the amygdala in the brain's left and right hemispheres.

Explicit Emotional Learning and Memory. The amygdala interacts with other memory components, particularly its neighbor, the *hippocampus* (Figure 1.1). The hippocampus (Greek for "sea horse," because of its shape) is situated in the limbic area just behind the amygdala in each of the brain's hemispheres. It is an integral part of the brain's memory systems and thought to be mainly involved in encoding cognitive and spatial information into long-term memory.

Information stored in long-term memory can activate the amygdala and cause a fear response to a situation even though the individual has not encountered that exact situation in the past. For example, imagine John, a middle-school student, walking to school and seeing another student coming toward him. As the other student draws near, John gets nervous and fearful and crosses to the other side of the street. What caused this response? It could very well be that John heard from one of his friends that the other student is a bully who gets into fights without provocation. Now, John has had no bad experiences with the bully, but learned about his aggressiveness explicitly from a friend, and that information was stored through the hippocampal memory system.

It is unlikely that John experienced fear when he was told the information. However, when he saw the bully walking toward him, the memory of the information alerted the amygdala, which provoked the fear response. This type of emotional learning, whereby we avoid or fear a situation because of what we are told rather than because of our own experience, is common in humans.

Of course, we remember some emotional experiences because they gave us good feelings: our first kiss, the pride we felt at graduation, our wedding day. The amygdala's interaction with the hippocampal memory system ensures that we remember things that are emotionally important for a long time, while also remembering those situations that can be threatening.

Teachers can use this information to enhance the impact of their teaching. Whenever a teacher can identify a strong emotional tie-in to the lesson content, and explicitly address that emotional connection while teaching, the content is likely to be recalled much longer and with greater clarity by most students. For example, when teaching about the era of segregation in a U.S. History class, the teacher might want to begin by saying to the students, "Anyone wearing white tennis shoes has to sit in the back of the class today, and you cannot eat in the cafeteria at lunch! Please move to the back of the class now!" The teacher would then move those students. Next the teacher inquires how those statements and their forced move to the back made them feel. Finally, the teacher explains that some citizens of the United States were treated in such a poor fashion because of the color of their skin. It is likely that this example generates strong emotions in many readers, and therefore will be remembered much longer.

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Social Responses. Although the role of the amygdala in social processing is limited, it does seem to be important in evaluating facial and vocal expressions. Brain imaging studies indicate that the amygdala on the left side of the brain responds more to voice information, and the amygdala on the right side is more involved processing facial expressions. These studies further demonstrate that the amygdala shows activation with different types of emotional expressions, such as happy or angry (Johnstone, van Reekum, Oakes, & Davidson, 2006). However, the activation is particularly intense when responding to fearful facial expressions. This response extends also to evaluating other social judgments about faces, such as deciding from a facial expression whether or not a person in a picture seems approachable or trustworthy (Adolphs, Tranel, & Denburg, 2000).

Such sensitivity to facial and emotional expressions is important for teachers to remember. No matter what we say to students, if the amygdala's assessment of our facial expressions and emotional demeanor contradicts our words, then they will probably not believe us. As a consequence, the teacher-student trust relationship is eroded.

Vigilance. It has long been thought that the amygdala not only processes an emotional stimulus, but also causes the emotional *response* to that stimulus. However, more recent research indicates that the amygdala's role seems to be to process emotional information and to *alert* other brain regions that should be sensitive to this information. Apparently, the amygdala increases the vigilance of other cerebral systems so that they can respond to the situation, if necessary (Anderson & Phelps, 2002).

Pathways of Emotional Signals

The *thalamus* is a limbic area structure that receives all incoming sensory impulses (except smell) and directs them to other parts of the brain for further processing. Incoming sensory
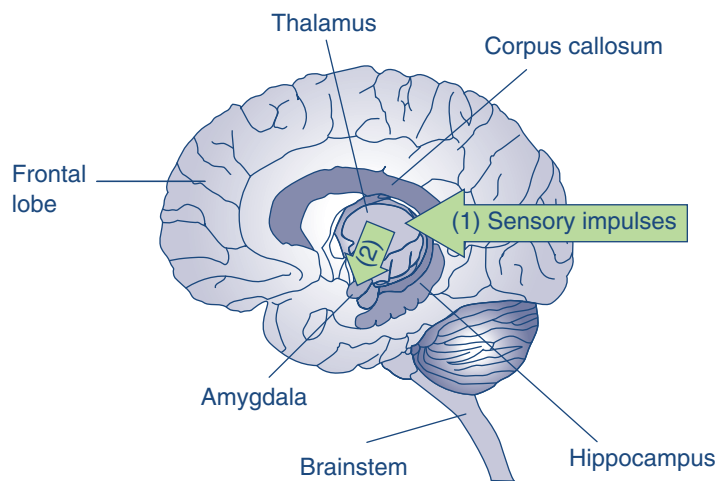
Figure 1.4 In the thalamic pathway, sensory impulses (1) travel to the thalamus where they are routed directly to the amygdala (2).
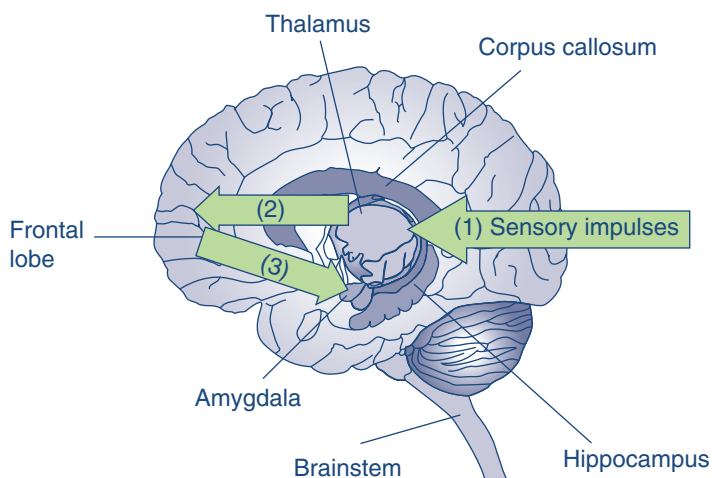

Figure 1.5 In the cortical pathway, sensory impulses (1) are routed first to the frontal lobe (2) for cognitive processing and then on to the amygdala (3).

information to the thalamus that has an emotional component can take two different routes to the amygdala. The quick route (called the *thalamic pathway*) sends the signals directly from the thalamus to the amygdala, as shown in Figure 1.4. The second possibility (called the *cortical pathway*) is for the thalamus to direct the signals first to the frontal lobe for cognitive processing and then to the amygdala, as shown in Figure 1.5.

The time it takes for signals to travel along the two pathways is different. For example, it takes sound signals about 12 milliseconds to travel the thalamic pathway and about twice as long to travel the cortical pathway. Which pathway the signals take could mean the difference between life and death. If the sound from an approaching car blasting its horn travels along the thalamic pathway, it will probably be fast enough to get you to jump out of the way even though you are not sure what is coming. Only later does your frontal lobe provide the explanation of what happened. Survival is the first priority; the explanation can wait.

Disturbances or deficits in this dual pathway system can explain some abnormal social behaviors. Social anxiety disorders, for example, can result whenever a certain action, such as walking into a crowd, is associated with fear. If this activity always takes the faster thalamic pathway, there is no opportunity for the frontal lobe to reassure you that there is no need for fear. Without that input, a phobia develops that cannot be easily moderated later through rational discussion. This probably explains why psychotherapy alone is seldom successful in treating many phobias and anxiety disorders (Restak, 2000;

Schneier, 2003). Treatments now often combine medication with psychotherapy. The principal medications used for anxiety disorders are antidepressants, antianxiety drugs, and beta-blockers to control some of the physical symptoms. Alternative therapies, such as diet modification, eye movement desensitization and reprocessing, and relaxation techniques have also been successful with some individuals. With proper treatment, many people with anxiety disorders can lead normal, fulfilling lives.

What Leads to Social Misbehavior?

Sociologists have examined for decades the various factors that influence how people behave in social situations. Children, of course, often behave quite differently from adults in similar situations, largely because their social skills are still developing. Further, as we discussed earlier, their frontal lobe's executive control system is immature and not yet fully capable of constraining excessive emotional responses.

The neurobiology of social behavior and misbehavior is not well understood. However, the new field of social neuroscience is emerging and some exciting avenues of research are being explored. The goal is to understand social behavior from the perspective of the brain. By using brain-imaging techniques and studies of people with brain injuries, researchers hope to decipher how neural pathways control attitudes, stereotypes, emotions and other socially motivated phenomena.

As exciting as brain imaging is, it does have its limits. People in a scanner cannot move very much and they do not usually interact directly with other people. The signals, by themselves, do not indicate a specific behavior. But these brain signals must be linked with behavior to have psychological meaning. Furthermore, the results of imaging studies must be associated with findings in other related areas, such as lesion studies, animal studies, and studies involving pharmaceuticals. With this approach in mind, research teams have begun examining areas of social behavior such as *stereotyping* and *attitudes.*

Stereotyping. In earlier studies, social psychologists have found that the brain automatically places people and objects into categories such as "familiar" and "foreign," and "good" and "bad." This categorization then biases an individual's feelings and reactions toward those people and objects. Not surprisingly, neuroscientists used imaging technology to focus on the amygdala to put together a possible neural pathway that might lead to stereotyping. One question they asked was "Does this brain structure consider people of different races as emotionally important?" They discovered that the amygdala is especially active at the sight of any unfamiliar face. However, once it has seen these faces several times, it stops emphasizing faces of people of the same race and only emphasizes more the sight of faces of a different race. Thus, the amygdala in whites is more active when they look at black faces, and in blacks it is more active when they look at white faces. This increased activity in the amygdala *could* evoke a fear response and subconsciously strengthen stereotypes about people of different races (Hart et al., 2000).

These results do not mean that there is a brain module for racial categories. It is more probably the result of environmental experiences during our development as a species. Our early ancestors did not get around very much and thus had no opportunity to encounter people who looked different from themselves. When they did encounter others, their brain circuits classified them as to whether they were likely to be an ally or an enemy.

Furthermore, the increased amygdala activity does not mean the response is unchangeable. New experiences change the brain. A follow-up imaging study revealed that the response of the amygdala to same-race versus other-race faces was altered by familiarity and learning (Phelps et al., 2000). In other words, just because we see the representation of a behavior in the brain does not lessen the importance of learning on generating or changing that behavior (Kurzban, Tooby, & Cosmides, 2001; Phelps & Thomas, 2003).

Attitudes. Researchers have long thought that an individual can change attitude after some amount of conscious reprocessing of information. Cognitive dissonance theory, for example, predicts that people change their attitudes after consciously realizing that there is a conflict between their core beliefs and their attitudes. Studies have used patients with amnesia to examine pathways that might be involved in changing attitudes. The researchers found that people with amnesia show an even bigger tendency to change their attitudes when shown a conflict between their attitudes and their beliefs than do people without amnesia. Cognitive dissonance theory would not have predicted this result because people with amnesia cannot remember long enough to realize consciously that a conflict exists (Ochsner & Lieberman, 2001).

However, when you think about it from the perspective of the brain, this finding does make sense. The brain consists of many automatic processes that respond unconsciously to the context of any situation facing the individual. When people with amnesia are told that their attitude conflicts with their core beliefs, their brain automatically changes the attitude to coincide with the beliefs. The only difference is that these individuals do not have access to the conscious processes, such as pride, that might stop them from going through with the change.

The implications of these findings can be applied to schools. Students with social and emotional problems often have distorted and negative attitudes and stereotypes about their family, school, peers, or even themselves. These attitudes and stereotypes may indeed be in conflict with their core beliefs, but they have not had the opportunity to do the cognitive reflection necessary to recognize that this conflict exists. Interventions, therefore, that help students reflect on their misbehavior and on the degree to which that misbehavior is directed by their attitudes and stereotypes are likely to be successful.

This cognitive reflection on one's awareness of and ability to manage one's emotions in a healthy and productive manner is known as *emotional intelligence.* Redenbach (2004) suggests that teaching emotional intelligence involves heightening the students' awareness of their feelings and the connection between their feelings and their actions. This instruction focuses on showing students the powerful choices they make when deciding how to act on their emotions. The result is an increase in the students' ability to manage their emotions successfully in a variety of situations.

With this approach, teachers help students to become experts in the five steps to emotional intelligence: self-awareness, mood management, motivation, empathy, and social skills. Accomplishing this requires the students to gain the ability to do the following:

- Accurately perceive, appraise, and express emotion
- Access or generate feelings on demand when they can facilitate understanding of themselves or another person
- Understand emotions and the knowledge that derives from them
- Regulate emotions to promote emotional and intellectual growth

The important point to be made here is that regardless of the basic cause of social misbehavior, most individuals can *learn* to moderate their behavior through appropriate interventions. Obviously, the sooner these interventions occur, the better. Numerous studies have shown that middle school students who display disruptive and antisocial behavior are at high risk for achieving poorly in high school and becoming dropouts (Battin-Pearson et al., 2000; Newcomb et al., 2002). But there is good news. The research studies also show that if interventions in elementary and middle schools can reduce forms of disruptive and antisocial behavior, then the students' chances for academic success in high school increase significantly (Fleming et al., 2005). These preventive interventions work with elementary

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and middle school students to develop healthy peer relationships and avoid the influence of peers engaged in problem behaviors. Research studies have found programs such as the *Life Skills Training Program* (Botvin & Griffin, 2004), *Project Alert* (Ellickson, McCaffrey, Ghosh-Dastidar, & Longshore, 2003), and *All Stars* (McNeal, Hansen, Harrington, & Giles, 2004) to be effective.

The Teacher Is the Key

Once again, the classroom teacher becomes a key person in deciding how to deal with students who display inappropriate social and emotional behavior. We know from studies that elementary teachers regard certain social and self-control skills as essential for the students' success in their classroom. In one study, more than 125 elementary teachers identified the following seven social skills as being pivotal for student success in their classroom (Lane, Givner, & Pierson, 2004):

- Following directions
- Attending to instructions
- Controlling temper with peers

- Controlling temper with adults
- Getting along with people
- Responding appropriately when hit
- Using free time acceptably

Elementary teachers (and probably many of their colleagues in secondary schools) value skills that promote harmony in the classroom and want to minimize assertive behaviors that could be challenging or disruptive. Teachers, of course, are not diagnosticians or therapists, but they are keen observers. They can certainly recognize when a student's behavioral problems persist and escalate, and they can decide what options to choose. One of those options is to try with interventions that research studies support as effective in controlling student behavior. Here are few of those interventions aimed at controlling social misbehavior.

INTERVENTIONS FOR HANDLING SOCIAL MISBEHAVIOR

We have already seen that social misbehavior can arise for a number of reasons. Handling such misbehavior requires careful assessment of the situation to determine which interventions are likely to be most effective. Here are a few suggestions that include dealing with interventions that target social anxieties as well as those that use social stories to curb undesirable social behavior.

Dealing With Social Anxieties

Researchers in social neuroscience offer suggestions for dealing with students who have social anxieties because these are often an indication of potential misbehavior in social situations. The following suggestions are from the schoolpsychiatry.org Web site of the Department of Psychiatry at Massachusetts General Hospital (copyright MGH, 2006), and are included here with permission. With modifications, these interventions are appropriate for students at all grade levels. See the **Resources** section for more information about the material available from this source.

- **Using puppets with primary students.** Allow socially anxious children to practice social encounters—such as initiating, sustaining, and concluding a conversation—with puppets. You may need a script for some students. For example, "Hi, I'm Bunny the Rabbit. What's your name? I like to eat carrots. What do you like to eat? Where do you like to play? I have to go now. Thanks for talking with me. Goodbye."
- **Watching social encounters.** Some preadolescents and adolescents have little understanding of what to do in a social encounter. Ask the student to watch videos that include social encounters and to identify what others did to be comfortable. What did the video characters

do with their eyes? How did they move their hands and feet while talking to others? How did the others react? And how did the student feel while observing the character?

- **Helping the resistant contributor.** Some students speak off-task freely but resist speaking about the lesson topic for fear of making mistakes in front of their peers. Allow these students to observe several other students before attempting a task. They should observe how other students start speaking, how long they speak, where they look, and how they stop. Then have the reluctant student speak to a group of three or four familiar peers before presenting to the whole class.

- **Sitting with familiar or preferred peers.** Identify peers that the student feels safe sitting close to and place some students into close proximity. Guide the student about how to talk to peers about assignments, such as "How many assignments do we have? When are they due? Where do we start?"

- **Identifying a student helper.** Matching a reluctant or overbearing student with a specific peer or peers can often help that student demonstrate acceptable behavior and participate in class. If the student does not know an answer when called on, allow the student to select a "lifeline." This is a peer whom the student believes will know the correct answer. If the student uses a lifeline, do not accept the answer until the student using the lifeline states whether the lifeline's answer is correct.

- **Sharing feelings.** Adults and peers are often so busy dealing with a student's social misbehavior that they rarely stop and have a face-to-face talk about what is going on. Identify specific times when the student can share feelings with you or another staff person or peer.

- **Rehearsing social skills.** Some socially misbehaving students simply need practice in what constitutes *acceptable* behavior. In a small group facilitated by a counselor, ask the students to review and role play how to make and keep friends. Give students homework to practice the social skills in other settings, such as the classroom, playground, and at home. Then pick frequent or familiar social situations—such as establishing rules in playground games, buying groceries, ordering at a restaurant, asking others to play soccer—and allow the student to role play with other students.

- **Practicing self-monitoring.** Identify and practice steps for the student to self-monitor appropriate peer interactions. For example, "Am I letting other people talk, too? Are we taking turns? Am I learning something from this conversation?"

- **Examining the evidence of negative conclusions.** If the student says, "I can't go to gym class because everyone will laugh at me," ask the student, "What happened the last time you went to gym class? Did any good things happen last time?" Or the student might say, "I don't like coming to school because people make fun of me." Ask the student, "What do students do when they arrive at school? Which students are glad to see you?"

- **Identifying automatic negative thoughts.** The student says, "I act out to get other students' attention because I'm no fun. No one wants to be around (or play with) me." Ask the student, "What happened that made you think this?" or "What causes you to think this?"

Using Social Stories to Modify Behavior

Because of the impressive influence of peers on most students, teachers should consider using behavioral strategies that employ both the power of the social context to modify problem behaviors, as well as teach tactics to curb emotional outbursts. This approach is useful for both general and special education teachers.

The use of social stories—sometimes referred to as *comic strip conversations*—addresses both of these factors, and has received considerable research support (Agosta, Graetz, Mastropieri, & Scruggs, 2004; Haggerty, Black, & Smith, 2005; Parsons, 2006; Rogers & Myles, 2001). A social story is a brief story that presents a problem behavior and various potential consequences of that behavior in a social context. Social stories may teach various techniques for curbing anger or managing stress, as well as present alternative behaviors. In using this technique, a brief story—in most cases only five to 10 sentences—is written that shows some of all of the following elements:

- The occurrence of a problem behavior
- The social results of that problem behavior, and/or an alternative behavior or tactic appropriate for the situation
- A strategy for achieving behavioral change
- A reinforcement for changing to more appropriate behavior
- The positive social impact of more appropriate behavior

Why Social Stories Work

As we noted earlier in this chapter, the brain must not only monitor how its owner reacts to external situations when alone, but must also interpret the intentions and responses of others in a social context. Are they friend or foe? Will I learn from them or need to teach them? Do I want their approval or not? Do I care about them? Do they care about me?

These are very complicated notions for a young and immature frontal cortex to process. Jumbled or incomplete processing can lead to inappropriate social responses. Social stories focus the individual's attention on how one's responses affect the behavior of others. An individual's responses, for example, can cause others to accept or reject that individual. Careful construction of the social story can help a student's brain recognize the cause-and-effect nature of social responses. This process may result in more appropriate responses in future social situations.

Preparing Social Stories

Social stories are generally written in the first person in order to emphasize to the students that the social story applies directly to them. Diagrams or line drawings, similar to a comic strip, may

be used to create a pictorial representation of the story for students who have difficulty in reading (Jaime & Knowlton, 2007). In other cases, rather than drawings or pictures, actual photographs of the target student may be used in the social story (Haggerty, Black, & Smith, 2005).

An example of a simple comic strip social story for an elementary student is shown in Figure 1.6. In this instance, a student has been talking loudly in the hallway. The teacher has told the student privately that not talking will earn the class two extra minutes of recess. It is important that the
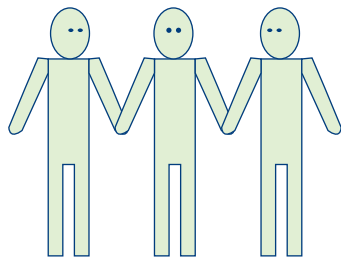
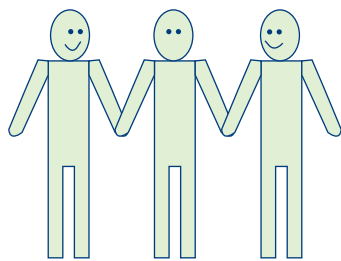**Sometimes we line up
in the hallway.**
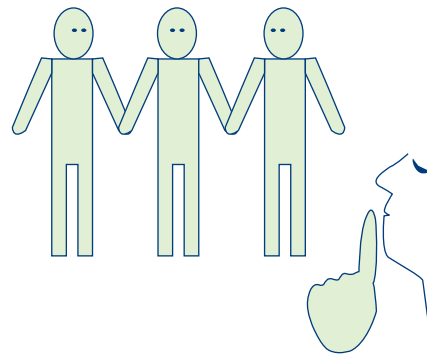
**We should be quiet in the hallway
so other students can work.**
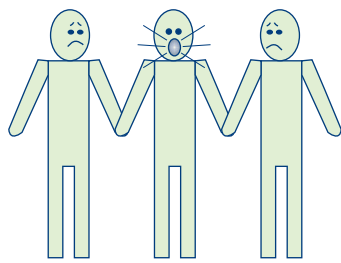
**Sometimes I feel like talking loudly,
and I begin to talk loudly without
thinking about it.**

**If I remember not to talk, I can earn
two minutes of extra recess for the
whole class.**

**The other students smile at me!
They like it when I remember not to
talk in the hallway.**

**The teacher likes to give us the
extra recess time.**

Figure 1.6   This is an example of a social story using comic characters designed to help a student understand that it is important to keep quiet in the hallway.

teacher **not** tell the class that the student's talking will deny them extra recess time as this may cause resentment and rejection. On the other hand, knowing that the student's quiet behavior has **earned** extra recess time may increase the student's acceptance by peers.

A Case Study: Using a Social Story for a Verbally Aggressive Student

Jason's Cursing Behavior

Jason was a second-grade student who often cursed at other students, and this was disruptive in the general education classroom. He had previously 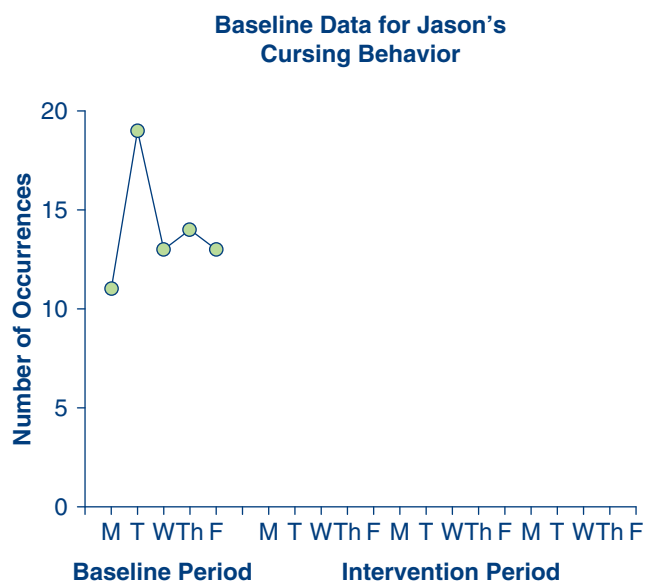been identified as a student with behavioral disorders, and while he was served in a resource room for one period per day, he spent the remainder of his school day in the second grade general education class. The general education teacher, Mr. Anson, consulted with the school psychologist, Ms. Utnay, and they decided to initiate a social story intervention for Jason.

Because most of Jason's misbehavior seemed to occur after lunch, Mr. Anson began a simple count of the occurrences of cursing behavior during that time period each day. He counted each occurrence as one example of cursing, even if Jason used multiple words or sentences in that particular instance. Over a period of five days, it was determined that in the period from the end of lunch until Jason went to the afternoon bus, he cursed at other students an average of 14 times daily. It was also clear that most of Jason's cursing was

Baseline Data for Jason's Cursing Behavior

Figure 1.7 On this chart, the teacher has recorded the baseline data for Jason's swearing behavior during the week before the intervention.

impulsive. Some of these instances led to more serious behavior problems and often resulted in fights with other students. The chart in Figure 1.7 shows the baseline data obtained by Mr. Anson. (Note: Throughout this book you will see data collection charts like the one in Figure 1.7. They allow teachers an objective means of determining whether a particular intervention has been successful. See the Appendix for a black-line master of a data chart.)

Creating the Social Story

Starting the Intervention. After baseline data were collected, Mr. Anson and Ms. Utnay began the social story intervention. Ms. Utnay took the lead when the two educators met and talked with

Jason about his cursing behavior. The dialogue below presents part of that initial discussion. Note how the psychologist used the idea of starring in a comic strip to hook Jason into participating.

Ms. Utnay: Jason, Mr. Anson and I wanted to talk with you about an idea we had. Do you remember last week when you had to go to the Principal's office for cursing at Tomika? You got mad at Tomika, and cursed at her during the science lesson. Remember that?

Jason: Yeah, I do.

Ms. Utnay: It wasn't very much fun was it.

Jason: The principal called my Mom, and she kept me from playing outside last Saturday. I was not happy about that, that's for sure!

Ms. Utnay: Well that doesn't sound like much fun at all. Do you remember why you said you cursed at Tomika?

Jason: I just got mad, I guess.

Ms. Utnay: Yes, you told Mr. Anson that you just got mad for no reason and cursed. At other times, you just seem to get mad for no reason, don't you?

Jason: Yeah. I don't know why, but I do.

Ms. Utnay: Well, maybe we can help. Mr. Anson and I have an idea that might help remind you not to curse at other students when you get frustrated. Would you be willing to try something with us?

Jason: What's that?

Ms. Utnay: We want to make a comic strip that can help to remind you not to curse at others. Do you like comic strips?

Jason: Yeah, sure.

Ms. Utnay: Let me tell you the best part. This comic strip will have one star: You! Would you like to star in your own comic strip?

Jason: Yeah! I could show my friends.

Ms. Utnay: You could. You could show your Mom, too, and get her to read it with you. Also, we think it would help to remind you not to curse at others when you get mad. That way you won't get punished.

Jason: OK.

Ms. Utnay: Now to get started, we want to take some pictures of you because you will be the star, and we will need you to act a bit for those pictures. Can you act for those pictures? Can you do that?

Jason: Sure, I can do that. Sounds like fun.

Ms. Utnay: It will be fun. But remember that we are doing this to help you remember not to curse at your friends in the class. That's the important thing here. OK?

Jason: OK.

Preparing the Comic Strip. It was explained to Jason that he would need to pretend for some of the pictures that would be used in the comic strip. In some cases, pictures may be made from actual photos taken during the regular class session, but for pictures involving anger, or severe behaviors, we recommend having the student act out the scene. For Jason's intervention, the sentences shown in Figure 1.8 were prepared as captions for each picture. For older students, these brief sentences may be expanded to three to five sentences for each picture. Note that several appropriate behaviors are suggested as alternatives to the inappropriate behavior of cursing at other students. Also, note the emphasis on the social consequences of Jason's inappropriate behavior.

After the pictures were taken for each sentence in the social story, Jason helped make his own comic strip by pairing the sentences and pictures together. This provided an opportunity for Mr. Anson to discuss these specific feelings and behaviors with Jason, as he prepared the comic strip. In those conversations, Mr. Anson repeatedly stressed that we all sometimes feel anger or get

Picture Suggestions and Captions for Jason's Social Story

1. Jason acting tired (head on desk)	2. Jason acting angry at another student	3. Jason and another student pretending to fight
Sometimes I get tired and then I might get angry for no reason.	Sometimes I get mad and curse when I'm tired.	When I curse at others, they get mad and we fight.

4. Jason sitting at principal's desk, or other suitable punishment	5. Jason raising his hand for assistance	6. Jason with his head in his desk	7. Picture of Jason raising his hand as his classmates smile at him
When I curse, I sometimes get punished.	Instead of getting mad and cursing, I should ask Mr. Anson for help.	Another thing I can do when I get angry is to put my head on my desk.	When I chose to do these things instead of cursing, Mr. Anson gives me a sticker and the class is more fun

Figure 1.8   Here are suggestions for pictures and captions for Jason's social story designed to reduce his cursing behavior.

our feelings hurt, but that it is important to avoid responding instantly by doing something that leads to punishment. Thus, the very act of preparing for this intervention provides opportunities for Mr. Anson to discuss impulsive behavior with Jason.

Using social stories provides a mechanism for the teacher and student to work together to curb disruptive behavior.

Several distinct elements may be included in a social story, depending upon the needs of the student. One critical factor in creation of the social story is the general order of the caption sentences. They initially identify the behavioral problem and perhaps the feelings that underlie the problem. Next, the positive and negative consequences are presented. In some cases, alternative behaviors might be suggested for the student, as was done in this example, while in other cases, various self-management strategies might be emphasized (see the following example). Note also that the reinforcement for appropriate behavior ("Mr. Anson gives me a sticker!") is emphasized in the social story (Figure 1.8).

Intervening With a Social Story

Once the social story book has been developed, the intervention can proceed. Each day for the next 3 weeks, Mr. Anson read the comic strip to Jason immediately after Jason returned from lunch. This was intended to remind Jason that he should use one of the alternative behaviors rather than cursing at others if he felt himself getting angry. Also, each day after reading the story with Jason, Mr. Anson encouraged Jason to raise his hand when he felt himself getting angry, so that Mr. Anson could walk over to Jason and help him relax. Occasionally, when Mr. Anson saw Jason becoming upset, he would walk over to Jason's desk and ask him quietly if he needed to rest his head for just a minute. In most cases, Jason said yes, and after one minute Mr. Anson could remind him (again, discretely) to lift his head and rejoin the class. One subtle advantage in using social stories is that this tactic makes the teacher an ally of the target student by providing a mechanism for them to work together to curb disruptive behavior.

In some cases when time allowed, after Mr. Anson invited Jason to lift his head, he would also ask Jason to come to the teacher's desk and quietly read the social story together. Again, this offered an opportunity for Mr. Anson to point out that Jason could control his own behavior in a way that did not result in Jason receiving punishment. Those discussions also emphasized the positive alternatives for misbehavior. Finally, at the end of each day during the intervention, Mr. Anson made time to talk briefly with Jason about his behavior. When possible and appropriate, Mr. Anson praised Jason for behavioral improvement and pointed out that he had received many stickers for good work that day.

As can be seen in Figure 1.9, Jason's cursing behavior did decrease significantly over that three-week intervention period. Although cursing was not totally eliminated, it was reduced to a much more

**Baseline and Intervention Data
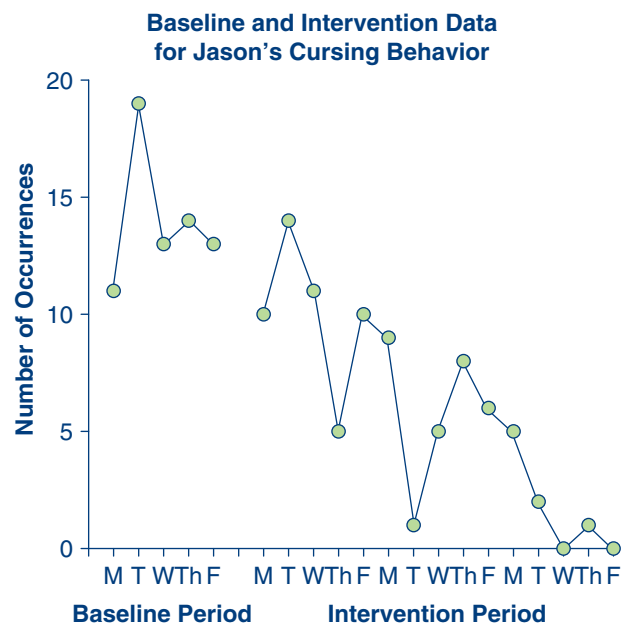for Jason's Cursing Behavior**

Figure 1.9   This chart shows the record of Jason's cursing behavior over the three-week period during the intervention. Although the cursing behavior was not eliminated, it was significantly reduced.

manageable level by this intervention. For many students with significant behavior problems, reducing the number of such behaviors, rather than eliminating them altogether, is a much more realistic goal, and does serve to significantly enhance the atmosphere in the general education classroom.

A Social Story for Angry Students

Haggerty, Black, and Smith (2005) reported on a social story intervention that included a component for reducing stress and anger on the part of a six-year-old student with a learning disability. Kirk was described as a student of multiethnic descent who exhibited dyslexia and several other behavioral problems. He functioned in the average range on various IQ assessments, but was angry, inattentive, socially immature, and very anxious.

In implementing the social story tactic for Kirk, the teachers chose to include an emphasis on anger reduction, and they employed a self-statement intervention for that. Thus, this social story actually presented several tactics for self-management of anger. When Kirk felt angry or stressed, he was told to say, "Out with the bad," with each exhale, and "In with the good," with each inhaled breath. This is one form of relaxation that can result in curbing social misbehavior and reducing stress and anger. Kirk's social story book included a total of 8 captions, and given his reading level, the captions were typically several sentences long. Those sentences are shown in Figure 1.10, and in his social story book, each sentence was accompanied by a picture showing Kirk doing the described activity.

In the picture captions, one can see two distinct tactics for curbing impulsive anger ("In with the glad, out with the mad" and "counting to ten" to calm down). Pizzas were counted rather than merely "counting to ten," because inserting the word pizza provided a natural rhythm for that calming process (captions 4, 5, and 6 in Figure 1.10). Thus, Kirk was provided with two strategies for managing his impulsive behavior.

In addition to providing relaxation strategies, this social story also emphasized the social benefits of curbing one's anger (captions 6, 7, and 8 in Figure 1.10). This strategy—perhaps even some version of this same social story—can be used with many angry and defiant students. Teachers seeking new tactics for these challenging kids would do well to consider using this social story intervention.

Picture Suggestions and Captions for Kirk's Social Story

1. Picture shows Kirk angry

Hi! My name is Kirk. Sometimes I get mad. When I get mad, I feel tense. I look like this. I don't like to be mad. So I'm learning how to calm myself.

2. Picture shows Kirk breathing in

When I feel tense, I calm myself by breathing in deeply. Then I say, "In with the glad." It feels good when I do this. I like doing this. My teachers and friends like it, too.

3. Picture shows Kirk breathing out

The next thing I do is breathe out and say, "Out with the mad." I push the mad out. This is fun. I like doing this. I do this three times. It makes me feel less tense.

4. Picture shows four slices of pizza, numbered 1 through 4

Then I count to ten pizzas. I start with 1 pizza, 2 pizzas, 3 pizzas, 4 pizzas. This is fun. I feel better already.

5. Picture shows five slices of pizza, numbered 5 through 9

Then 5 pizzas, 6 pizzas, 7 pizzas, 8 pizzas, 9 pizzas. Wow! I feel good.

6. Picture shows Kirk smiling and holding up 10 fingers

Ten pizzas. Yes, I did it! I feel so good. I am happy and my teacher is happy. My friends are happy, too. I like feeling this way. I like feeling calm.

7. Picture shows Kirk smiling

I'm glad I learned to stop being mad. I feel so calm. I feel happy. I like taking care of myself. My teachers and friends like it, too.

8. Picture shows Kirk and teacher sitting, smiling; teacher's arm around Kirk

My teacher is very proud of me. She says I stop being mad very well. She tells my friends what a good job I do. I like my new skill.

Figure 1.10 These are picture and caption suggestions for Kirk's social story to reduce his stress and anger.

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Guidelines for Developing Social Stories

The following are additional points that teachers should consider when developing a social story intervention (Agosta, Graetz, Mastropieri, & Scruggs, 2004; Jaime & Knowlton, 2007).

- **Write in the Third Person.** Writing the social story in the first person may make the story too intimate for some shy students. For those students, some researchers have recommended writing the social story in the third person.
- **Use the Present Tense.** Use verbs in the present tense in the social story because this makes the problem and the solutions seem more immediate to the student.
- **Emphasize the Positive.** The captions in the social stories generally emphasize what students should do and not what they should not do.
- **Maintain Respect.** The captions always use language that is respectful of all students and, in particular, the student with the behavioral problem. Stressing the distinction between the student and the misbehavior is critical, and the social stories give students the sense that they can control their own behavior.

Effectiveness of Social Stories

The social stories intervention has been successfully used with different types of students who display various behavioral problems, and research has repeatedly demonstrated the effectiveness of this intervention. Most of the research has been conducted using students with autism as subjects (Agosta et al., 2004; Parsons, 2006). However, other research has implemented this tactic for students with Asperger Syndrome (Rogers & Myles, 2001) or students with dyslexia and oppositional behavior (Haggerty, Black, & Smith, 2005). Further, this research has shown social stories to be effective for students in the primary grades through high school.

Notice in the previous examples of the social stories interventions the continuing emphasis on relationships with both teachers and students. The importance of these relationships for most students provides a potent basis for this intervention. Even students who say and act as if they do not care what their peers or teachers think, often really do care. Using these relationships as a hook to involve students in interventions to curb their own behavioral problems can be beneficial and productive (Stipek, 2006).

One caution is in order. Older students with more mild disabilities, such as learning disabilities or mild behavioral problems, may find this comic strip tactic to be juvenile, and thus may not wish to participate. However, others across the school age range may enjoy having a social story book made about them. Like all strategies, the teacher determines the student's general maturity and interest in participation prior to implementing this tactic.

There are several sources of social stories on the Internet, such as the Gray Center for Social Learning and Understanding. See the **Resources** section for more information about this center.

SUMMARY

Social behavior is greatly influenced by how the brain develops and organizes and interprets information from its environment. Emotional responses to one's environment are normal and their excesses are kept under control by the brain's executive control system. But given its strong genetic directive to keep its owner alive, the immature brain can sometimes misinterpret harmless social situations as threatening and overreact with an inappropriate response. If there are few or no consequences resulting from this misbehavior, then it is likely to continue. Faced with this situation, there are some interventions, such as social stories and others, that teachers can use to effectively moderate social misbehavior.