

AUTISTIC BEHAVIOR

Social Stories: Improving Responses of Students with Autism with Accurate Social Information

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A student with autism was asked what makes his teacher laugh. He responded, "Boy, I don't even know that. I guess I'll never know about that." The social impairment associated with autism is reflected in his answer, as it is in the many behaviors associated with this complex disorder. To further understand the social behavior of persons with autism, researchers have focused on social cognition -- the cognitive skills required for social interaction. This area of research has dismissed some long-held beliefs, while piecing together a new understanding of the social and behavioral challenges facing persons with autism.

Social cognition research helps to explain the effectiveness of a new approach to teaching social behavior that centers around social stories. Social stories are short stories that describe social situations in terms of relevant social cues and often define appropriate responses. For some students with autism, social stories have been successful in improving their responses to social situations within a short period of time. After a brief review of literature providing a rationale and direction for writing social stories, this approach will be described in detail.

Social Cognition in Autism

Historically, people with autism have been described with terms such as "withdrawn" and "in a world of their own." In light of research describing a more complex and specific deficit in the area of social cognition and pragmatics (Baron-Cohen, 1988), these general descriptors become less and less accurate. Though a severe social impairment is characteristic of autism (Kanner, 1943), not all persons with autism display withdrawn social behavior (Wing & Gould, 1979). Echolalia, one of the language characteristics of autism (Wing, 1971), has been demonstrated to serve communicative and social functions (Fay, 1969; Prizant & Duchan, 1981; Prizant & Rydell, 1984; Shapiro, 1977). It has also been suggested that stereotypic questioning by children with autism may serve to initiate and sustain interactions with others (Hurtig, Ensrud, & Tomblin, 1982). In fact, some behaviors previously described as inappropriate may now be regarded as evidence of communicative intent (Carr, 1985; Carr & Durand, 1986; Donnellan, Mirenda, Mesaros, & Fassbender, 1984; Iwata, Dorsey, Slifer, Bauman, & Richman, 1982; Wetherby, 1982).

It is important to note that "autistic children's social development is not impaired in a blanket fashion" (Baron-Cohen, 1988, p. 382). Some social skills are unaffected by the disorder (Baron-Cohen, 1988; Langdell, 1978; Stone & Lemanek, 1990), while others remain significantly impaired. Baron-Cohen concluded that almost all of the pragmatic skills that make language communicative are impaired in children with autism. Dawson and Fernald (1987) demonstrated a relationship between perspective-taking ability (the ability to assume the perspective of another person) and quality of social behavior and severity of autism. They concluded that although their study should not be taken as determining a causal relationship between perspective-taking ability and social behavior, their results did "suggest a close linkage of these two abilities" (p. 496). In a study on empathy and cognition that compared high-functioning children with autism to their normally developing peers, Yirmiya

Sigman, Kasari, and Munday (1992) found that while children with autism did demonstrate some of the skills required to identify the emotions and assume the perspectives of others, their performance was nonetheless impaired.

The Rationale Behind Social Stories

The rationale behind social stories is based on the growing understanding of social cognition in autism, and a belief that this understanding should be reflected in how social behavior is taught to students with this disorder. Persons with autism have impairments that impede their ability to "read" and understand social situations and to formulate appropriate responses. Experiences with social stories indicate that some students with autism may be more impaired in their access to accurate social information than in their ability to understand and respond appropriately to it. The first approach to a targeted behavior, therefore, should include efforts to provide a student who has autism with an accurate understanding of the situation in which the targeted behavior occurs.

Also, recognizing that students with autism have difficulty with questioning skills, the initial description of a social situation should include answers to unasked or inadequately asked questions. Children with autism do not appear to understand that questions may be used to gain information from others (Hurtig et al., 1982); consequently, their access to information is limited. This emphasizes that parents and professionals need to include the answers to *who, what, when, where, and why* questions when teaching social behavior to students with autism. In addition, teaching students with autism to ask questions should include efforts to help them understand that others have information valuable to them.

Finally, the initial presentation of social information to students with autism should be in a format that is clear and easily understood. Traditional teaching involves interaction between teacher and student, creating a social situation whenever instruction occurs. Considering that social interactions are difficult for students with autism, the use of traditional instruction to teach social behavior presents a student with a compounded challenge: understanding the lesson, and accurately interpreting the social cues used in its presentation. Social stories seek to minimize potentially confusing instructional interactions, to provide students with autism direct access to social information. Once the information is presented, new skills are practiced in the targeted situation with needed, but not excessive, support.

Social Stories: An Overview

Social stories are most likely to benefit students functioning intellectually in the trainable mentally impaired range or higher who possess basic language skills. Social

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stories have been used successfully with both elementary and secondary students. A social story can be modified in response to a student's ability and specific impairment.

Social stories serve a wide variety of purposes. They appear to be particularly helpful in facilitating inclusion of students with autism in general education classes. They have been used successfully to introduce changes and new routines at home and at school, to explain the reasons for others' behaviors, or to teach new academic and social skills. Several case examples later in this article illustrate a few of the many uses for social stories.

To write an effective social story, it is critical for the author to consider the perspective of the student for whom the story is written. Through careful observation, the author focuses on what a student may see, hear, and feel in the targeted situation. This perspective determines the focus of the social story. For example, a teacher decides to write a social story about standing in line. For a student who is sensitive to touch, the teacher might explain why children occasionally touch one another when standing in line, indicating that this occurs because the children want to start moving, or may need to fix their shirts or scratch their heads. For a student who has difficulty following directions given to a group, the teacher may revise that story, focusing on listing the rules for standing and walking in a line, and explaining *why* those rules exist. The teacher considers a student's individual perspective, then writes an *accurate* description of what occurs and why. (The only exceptions to this are generic stories, described later.)

Guidelines for Writing Social Stories

Beginning with the student's perspective, an author follows basic guidelines to develop a story. Social stories are written well within a student's comprehension level, using vocabulary and print size appropriate for his or her ability. The stories comprise three types of short, direct sentences: descriptive, directive, and perspective, with each serving a special purpose.

Descriptive sentences relate what people do in a given situation, and why. Social stories often begin with these statements, to "paint the social backdrop" of the targeted situation. They may describe a setting, an activity step by step, and/or the people involved. It is important for an author to remain objective and not assume the reaction of the observer -- for example, use "The children play games at recess" instead of "Recess games are fun." Thus, social stories can assist students in focusing on relevant cues. For example:

The bell rings when recess is finished.
The children stand in a line by the door.
They wait for the teacher to come.

Descriptive stories are those containing a majority of descriptive sentences.

Directive sentences are individualized statements of desired responses. Collectively, these sentences provide a sequential list of expected responses to the targeted situation. Directive sentences focus on what a student should do to be successful in a given situation. It is important for an author to positively state desired behavior, for example, using "I can walk" instead of "I will not run." The result is similar to a personal task analysis of desired responses. Directive sentences often begin with "I can . . ." or they are written as goal statements, beginning with "I will . . ." For example:

I can hear the bell.
I will stop what I am doing.
I will stand in line.
I will wait for my teacher.

Directive social stories are those containing a majority of directive sentences.

Most social stories contain both descriptive and directive statements. For example, the previous examples of descriptive and directive sentences could be combined:

The bell rings when recess is finished.
I can hear the bell.
I will stop what I am doing.
The children stand in line by the door.
I will stand in line.
They wait for the teacher to come.
I will wait for my teacher.

The number of descriptive or directive statements in a story is dependent on the needs of an individual student. The more descriptive a story is, the greater opportunity there is for a student to determine his or her own new responses to a situation. For some students, a totally descriptive story will be confusing, leaving them at a loss as to what to do or what is expected. Those students will need directive statements in their stories.

Social stories may also contain perspective statements. Perspective statements describe others' reactions to a situation, or responses depicted in a story. In the previous example, following the directive statement "I will wait for my teacher," with a perspective statement, "My teacher will be happy to see all the children in line," tells a student how her or his teacher will respond to the expected behavior. Continuing with the same example, to help a student understand the reactions of others to recess, an author could write, "Some children want to keep playing. They might say, 'Oh, NO!' when they hear the bell ring."

In most cases, an author should write one concept per page. This emphasizes each point in a story and allows for variations (described later) to a basic social story. Stories are often cut apart into separate concepts, with one to four sentences in a section, and mounted on the bottom of black construction paper to draw attention to the written word. To further emphasize each sentence, an author might begin each one at the left-hand margin of the page.

With only a few exceptions, illustrations are not recommended; our experience indicates that they may be distracting, or a student may make an inaccurate interpretation of the situation based on the illustration. For example, if an illustration depicts a child tying his shoe, seated next to a cat on a blue carpet, the student may interpret this to mean that shoes should be tied only when seated, next to a cat, on a blue carpet. Photographs have been effective in some stories, particularly when they depict variations of the same situation. For example, in a story describing recess, several photographs of different groups of children involved in a variety of activities may help a student focus on separate activities, in a situation that is overwhelming as a whole.

Recognizing that children with autism often make highly literal interpretations of statements (Kanner, 1943), an author must ensure that a story is accurate regardless of the interpretation. For example, using the statement "I will not talk in the library" in a story could be misleading. What if the student is asked a question? Stating the desired behavior, "I will whisper in the library" or "I can whisper in the library," helps

Photographs have been effective in some stories, particularly when they depict variations of the same situation.

a student understand expectations.

Social stories are written with built-in flexibility, so that events may be defined realistically, for example, "When I stand in line, I can see the child in front of me. It may be a boy. It may be a girl. It could be someone different each time." In addition, the word *usually* is often more accurate than *always*. In this way, an author matter-of-factly introduces the possibility of variations.

To provide students with autism with a functional time reference, an author may define the cues that signal the start and finish of a given activity or situation. This may require using visual cues for students who are unable to tell time, for example, "I can look at a book until Mrs. Clark finishes writing the first assignment on the chalkboard. Then, I will get out my paper and pencil and start working."

Authors may assist students in making judgments through the use of terms and statements that tie ambiguous concepts to functional cues, for example, "I will wipe the table until it is clean. I will make sure I wipe up all the crumbs and spilled juice."

Titles for social stories may be stated as questions, to demonstrate the relationship between questions and answers. For example, a story about substitute teachers may be titled, "Why Do We Have Substitute Teachers?" or may be double-titled, adding, "What Will We Do When We Have a Substitute Teacher?" Subtitles stated as questions may also be used throughout a story.

Finally, writing social stories is an art, not a science. While guidelines are helpful, many effective stories have been written and implemented that deviated from the suggested format. Creativity matched with an individualized understanding of a student and situation are among the most valuable ingredients for effective social stories.

Techniques for Implementing Social Stories

Several techniques exist for implementing social stories. Selection of the most appropriate techniques is dependent on a student's unique abilities and needs. Experience with social stories indicates that they are not effective for all students in all situations. In cases in which social stories are effective, results are often dramatic and apparent within 1 week. In the case examples provided later in this article, several different strategies for implementation are described in detail.

Three basic approaches are used to introduce social stories to students with autism. First, for a student who reads independently, an adult introduces the story by reading it with the student twice. The adult sits slightly back and at the student's side and reads the story to the student first, followed by the student reading it back. Once acquainted with the story, the student reads it once each day, independently.

Second, when introducing a social story to a student who cannot read, the story is first recorded on cassette tape. A bell is used to signal the student to turn the pages. After teaching the student to use the tape recorder and turn the pages on cue, the student "reads" the story no more than once each day.

The student with autism may not be the only person to benefit from a social story. He or she may share the story with all those depicted in it. This gives the student a central role in the implementation of a story, and may help him or her understand that everyone knows the same information. Our experience indicates that peers may also take an interest in a student's story and will ask to read the story with the student. Consequently, many of the people who are critical to a student's success, including peers, share identical information. When a targeted situation occurs, those who have read the story can "cue" the student with a reminder, or quote a key phrase from the story.

A third approach is used either with students who read independently or with those who need assistance. Videotaped social stories combine social stories and the

effectiveness of video modeling with students with autism (Charlop & Milstein, 1989; Haring, Kennedy, Adams, Pitts-Conway, 1987). These stories are read aloud on a videotape, with one page appearing on the screen at a time. Using this format, sequences depicting the targeted situation as it occurs may be edited into appropriate places in the story. Videotaped social stories make it possible for the story to be read to the student (volume on) or for the student to read the story himself or herself (volume off).

Regardless of how a social story is introduced, comprehension is checked using different techniques. A student may complete a checklist or answer questions in writing at the end of a story. Also, role playing may be effective, with a student being asked to show what he or she will do the next time the situation occurs.

Our experience indicates that the approach to fading a student from a social story is highly individualized. One student may need to read a story only a few times, with a review of the story about once a month to maintain new behaviors. Another student may continually need to read a story prior to the anticipated situation, seeming to retain the information from a story for only a few hours. Still another student may need to read a story once a day for several weeks, suddenly becoming independent of the story when the new behavior becomes habitual. Those implementing a story need to observe a student's reaction on a continuing basis to develop the best fading approach for him or her in a given situation.

Social Stories in Practice

As noted earlier, social stories serve a variety of purposes. In this section, case examples illustrate several different uses for social stories, including teaching new routines, behaviors, and rules; an academic curriculum; and judgment. In addition, other related activities are described.

Social stories are often used to prepare a student for an anticipated change in routine, or to acquaint a student with an unfamiliar event. These stories provide opportunities for students to become familiar with the steps of a routine in a quiet setting, removed from the target situation. With slight modification, stories teaching routines may be expanded for use in other areas of instruction, for example, to teach sequencing skills, or how to respond to forgetting.

A routine story was written by a mother for her 9-year-old daughter with autism, Liesl. Liesl had difficulty with a new routine involving picking up her brother, Gavin, from school. Liesl would kick the dashboard in the car, become verbally upset over the route her mother took to the school, become upset seeing the principal touch children in the parking lot as he assisted them into their cars (she wanted him to touch her), strike out at her brother when he entered the van, remove her seat belt, and pinch and scratch her mother as they drove home. Her mother wrote the following story by hand on primary paper, and Liesl read it independently before picking up her brother.

After I get off the bus, Mom and I pick up Gavin at St. Luke School. When we get there, a lot of kids are in the parking lot. I look for Gavin. Gavin gets in the van and I say "Hi." I sit quietly, keep my hands to myself and keep my seat belt on while Mom drives home. At home, Gavin and I will have a snack. I wonder what today's snack will be!

Liesl demonstrated the appropriate behaviors described in the story the same day the story was introduced. On subsequent days, her mother used verbal cues referring

to the story to prompt her daughter. On occasions when Liesl did begin to get upset, her mother asked her to read the story again, and followed up with verbal reminders.

A story describing a routine was written for Max, a 6-year-old-boy with autism. Max was included in a general education classroom for the majority of his school day, where he had difficulty learning the classroom routines. A goal to teach Max the morning routine was identified. The special education teacher implemented a picture schedule illustrating the routine for him; the staff also monitored him as he performed the routine each morning, verbally prompting him when it was needed. These approaches proved unsuccessful.

The morning routine was targeted for a social story. The story defined the steps involved in starting the school day. The story was read to Max one time. He began performing the morning routine immediately after hearing the story. Max continued to read the story independently three times each week. Still, a problem existed: Max would take his seat each morning with his hat still on, and would need to be verbally directed to take off his hat and hang it up. The staff could not understand this, as they remembered that the story directed Max to remove his hat. In checking the story, however, they discovered that Max's hat was *not* mentioned. A sentence stating, "Take your hat off and put it in the locker," was added to the story. Max read the revised story, and the problem was immediately corrected.

Checklist stories teach routines and provide practice with "forgetting" a step. Each page of the story describes a step of a daily routine. Each step of the routine appears on its own sheet of paper. At the end of the story is a checklist listing in sequential order the steps constituting the routine. The student places a check by each completed step on the checklist. By removing any selected page of the story, a step of the routine is eliminated. The student is encouraged to recall the missing step as he or she completes the checklist. The student helps the character of the story by returning the missing step, or page. This demonstrates that others can provide help when the student forgets, while introducing a routine in a format he or she can understand.

Social stories describing a familiar routine may also be used as a relevant sequencing activity. The pages of a story are placed in incorrect sequence. A student is asked to place them in the correct order. To simplify the task, only a few pages from the story are chosen at first (for example, the first and last steps), with the number of pages and the difficulty of the activity being gradually increased. Adults must be sensitive to instances where the original order of the steps is not critical to the desired outcome, accepting a reasonable variation of a sequence as a correct response. For example, "I will take off my hat. I will take off my mittens" could occur in reverse order.

Social stories may incorporate and reinforce academic skills, or find their way into the classroom curriculum. For example, the value or impact of a social story may be expanded by inserting a variety of related academic pages into the story, without changing the story line. The result is a curriculum story. Curriculum stories use social situations from a student's life experiences as a backdrop, to demonstrate the functional application of academic skills and their relationship to the student's everyday experiences. Curriculum stories also keep social stories (which may need to be reread a few times to be effective) interesting. Because a basic social story is written one step to a page, academic curriculum pages can be easily inserted throughout. Academic curriculum pages address a student's specific academic objectives, encouraging application of writing, math, or guessing skills. For example, after a page with a description and photograph of children in line at recess, a math insert may ask a student to count the number of children (or the number of girls, boys, or smiles) in line in the photograph on the previous page.

Social stories can become part of the general education curriculum. Many elementary general education classrooms use Daily Oral Language (DOL) (Vail &

Social stories have been effective in teaching some students with autism more appropriate responses to anger and frustration.

Papenfuss, 1989) as part of the daily curriculum. To teach DOL, a teacher writes a few sentences on the chalkboard that contain grammatical and punctuation errors. The students take turns correcting the errors in the sentences. By using sentences based on immediate experiences, a teacher can inform a student with autism, and the entire class, of a change in routine, or reinforce a particular event. For example, the teacher could use sentences like, "Today we have gym at 2:00 instead of at 2:15," or "This morning John walked in the room and said, 'Hi, Mrs. Johnson!'"

Social stories have been effective in teaching some students with autism more appropriate responses to anger and frustration, as described in the following two case examples.

Max, mentioned earlier, was very aggressive toward his sister's new cat. He was physically abusive toward the cat, throwing and hitting it frequently. Efforts to change Max's behavior included describing and modeling more appropriate behavior, but these were not met with success.

The teacher wrote a story at the family's request, introducing the cat and defining how Max should respond to it. Max's parents read the story to him the evening they received it from school. The following morning, the cat came up while Max was eating his breakfast and began drinking the milk from Max's cereal bowl. Instead of responding aggressively, Max leaned forward and blew on the cat. The story was immediately effective. About once a month Max would need to review the story.

In a second example, Celeste, a 7-year-old girl with autism, was demonstrating self-abusive behaviors, including throwing herself on the floor, banging her head, and screaming, in response to anger and frustration. Positive reinforcement and other positive behavior management techniques were tried unsuccessfully. Celeste's teacher wrote a social story discussing anger, identifying that anger was acceptable and how it could be appropriately expressed. The teacher read the story aloud to Celeste, followed by a few times in a whisper. Finally, Celeste read the story independently. To check for comprehension, Celeste was asked to show what she would do when she felt angry. When situations occurred in the classroom that had previously resulted in Celeste's self-abusive behaviors, staff would first verbally cue the story, and if that was not effective, would retrieve the story for Celeste to review. The intervention was successful in preventing the self-abusive and aggressive responses.

One social story was successful in teaching J.B., a high school student with autism, to make an important judgment. J.B. was enrolled in the choir, and a concert was 2 weeks away. The music teacher indicated that J.B. had difficulty controlling his volume when he sang, requiring frequent reminders to bring his volume down. The music teacher expressed concern that J.B. might have difficulty with volume control at the concert, especially considering the new situation and the excitement of performing before a large audience.

J.B.'s special education teacher wrote a story identifying ways for J.B. to monitor his own volume. The ambiguous term *volume* was tied to other cues, for example, "I will sing so I can hear the people singing next to me." The first day the story was read, J.B. did not require reminders in class; on subsequent days, reminders were minimal. One morning J.B.'s special education teacher forgot to have J.B. read the story prior to class and his volume returned to its original level, with J.B. requiring several reminders. Subsequently, J.B. continued to read the story prior to class and sang successfully with the choir the evening of the concert.

Social stories have also been written in a generic format, describing situations common to students with autism. Generic social stories do not initially include individualized information; they are often highly descriptive, serving as an "outline" from which stories including individualized directive statements are developed. For example, a generic story outlining the steps for ordering and eating at a McDonald's could be saved on a computer disk and quickly revised to meet the needs of individ-

ual students in a classroom.

Summary

Research in the area of social cognition provides an increasing awareness of the complexities of the social development of persons with autism. While some social skills remain intact, others are severely impaired, limiting the access a student with autism has to accurate social information. Social stories are based on the rationale that if a student's ability to gain information about his or her environment is impaired, that information should be presented in a format he or she may be able to understand. Making an effort to carefully explain social situations to students with autism is seen as a major part of teaching social behavior -- one that is prerequisite to implementing other approaches or behavioral interventions.

Developing a social story requires sensitivity and an understanding of the basic principles involved in writing them. To write and implement an effective social story, parents and/or professionals should first consider the perspective and abilities of the student with autism. Authors of social stories follow basic guidelines, developing stories using three basic types of sentences: descriptive, directive, and perspective. Implementation of social stories is individualized in response to the abilities of the student for whom the story is written. Stories may be presented as books, with audiotapes, or on videotape, using instructional techniques tailored to an individual student. With minor modifications, social stories may be used to teach a wide variety of social and academic skills.

Although excellent results have been obtained through the use of social stories, to date there is no empirical support data. At the current time, informal feedback on the use of social stories is being utilized to improve the art of writing for students with autism. It is hoped that research and new information will be creatively applied to further develop and expand this approach in the future.

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