20 Ways to . . .

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Promote Academic Engagement and Communication of Students With Autism Spectrum Disorder in Inclusive Settings

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This article describes 20 strategies to facilitate the participation and learning of children with autism spectrum disorders (ASD) in inclusive settings. Note that although the majority of strategies and accommodations suggested are communication-building techniques geared specifically toward students with ASD, they also reflect sound principles of good teaching and therefore serve to benefit most learners in an inclusive classroom.

1 **Functional assessment of the academic environment.** Acting-out behaviors of children with autism spectrum disorders (ASD) frequently may be responses to academic and curricular challenges of the classroom setting. The most efficient and direct way to actively engage students, and therefore positively impact their learning outcomes, is to adapt the classroom environment to meet the students' needs. This involves examining the amount of time dedicated to instruction, level of student engagement, quality and clarity of directions for a task, instructional pacing, appropriateness of content, and adaptation of teaching based on student performance (Salvia & Ysseldyke, 2003).

2 **Self-management.** Self-management teaches students to identify appropriate behaviors, record their own behavior, and reward themselves for performing the appropriate behavior. Self-management can

reduce dependence on adults (e.g., the teacher or paraprofessional) thereby increasing independence and generalization of the skills to other settings (Simpson & Otten, 2005). See Figure 1 for a checklist to assist the student in self-monitoring adherence to classroom rules and procedures.

3 **Graphic organizers.** Graphic organizers are visual supports that present concrete depictions of key ideas. They emphasize essential concepts and facts as well as the relationships between them (Smith Myles & Adreon, 2001). Graphic organizers help students to generate, organize, and record their ideas, make connections among those ideas, and improve conceptual understanding. Creating a graphic organizer includes selecting the content to be covered and then organizing the information in diagram form (see Figure 2). Partially completed graphic organizers may be used with students as well (Walther-Thomas, Korinek, McLaughlin, & Williams, 2000).

4 **Visual cues.** Visuals cues are physical representations of content with concrete characteristics that can enhance comprehension (Miranda & Erikson, 2000; Smith Myles & Adreon, 2001). Visual supports help the learner maintain attention to the task, clarify expectations, and encourage participation. Visual cues can be incorporated as part of a graphic organizer to assist students in identifying story elements in reading (see Figure 3).

116

My Checklist

Subject: _____

Did   I:

1. Stay in my seat   Yes   No

2.   Work   quietly   Yes   No

3.   Have   quiet   hands   Yes   No

4. Listen to my teacher   Yes   No

Figure 1.   Sample self-monitoring checklist

Scripts. Direct written and/or visual prompts intended to initiate or sustain an interaction are called scripts. After learning to follow a script, children with ASD have not only increased the frequency of scripted initiations, but also of nonscripted or spontaneous initiations (Krantz & McClannahan, 1993, 1998; Stevenson, Krantz, & McClannahan, 2000). Although typically used to promote social interaction, scripts can be applied in classroom settings by offering an immediate way for the child with ASD to participate in academic interactions. For example, in teaching the scientific method to children in cooperative learning groups, the child with ASD could be given a script listing specific questions to guide discussion on each step of the process. Scripts are structured by individual need and content appropriateness with the goal of fading the degree of specificity, and need for the script.

Flexible grouping strategies. Multiple grouping strategies can facilitate the participation of children with ASD in inclusive settings. Cooperative learning groups, classwide peer tutoring, and more general peer tutoring strategies enable the child with ASD to participate in class with increased autonomy and more similarly to the way their peers do.

Task analysis. Children with ASD have trouble forming mental representations or connections from part to whole. However, they can perform well on academic tasks when information is presented in separate distinct parts. In task analysis, learning tasks are
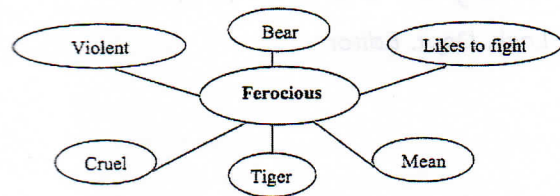
Figure 2.   Sample graphic organizer of key vocabulary term

presented as discreet steps based on individual students' needs (Zager & Shamow, 2005). All behaviors should be stated in terms of learner actions that may be taught individually or as a set.

Task selection and variation. Student task selection (based on a menu of choices that reflects their interests) has been linked to an increase in purposeful, on-task response and a reduction in problem behavior (Dunlap, Kern-Dunlap, Clarke, & Robbins, 1991). For example, alternating between presenting students with preferred and nonpreferred activities has a positive effect on academic engagement. Therefore, carefully attend to the child's favored activities and modify the schedule of tasks accordingly.

Planned activity routines. Multiple opportunities to practice routine across academic content and settings can encourage participation, independence, and interaction of students with ASD in academic activities (Prizant, Wetherby, Rubin, Laurent, & Rydell, 2006). Reciprocal teaching is an example of a routine that capitalizes on opportunities for student interaction during academic instruction. In this approach, the roles are interactive and reciprocal as the teacher and students take turns facilitating class discussions around text by generating questions, summarizing, clarifying, and predicting (Palincsar & Brown, 1984). See Figure 4 for an activity routine in reading.

Providing directions in multiple forms. Many teachers in the general education setting may often present directions for completing a task only verbally. Because of difficulty in interpreting spoken language, children with ASD benefit significantly from having instructional information provided in multiple ways. Pair verbal directions with written and pictorial representations.

Activity schedules. These to-do lists provide visual prompts (e.g., written instructions, picture symbols, photographs, and colors) to communicate what, when, and even how work is to be completed. As children learn to follow a schedule, this
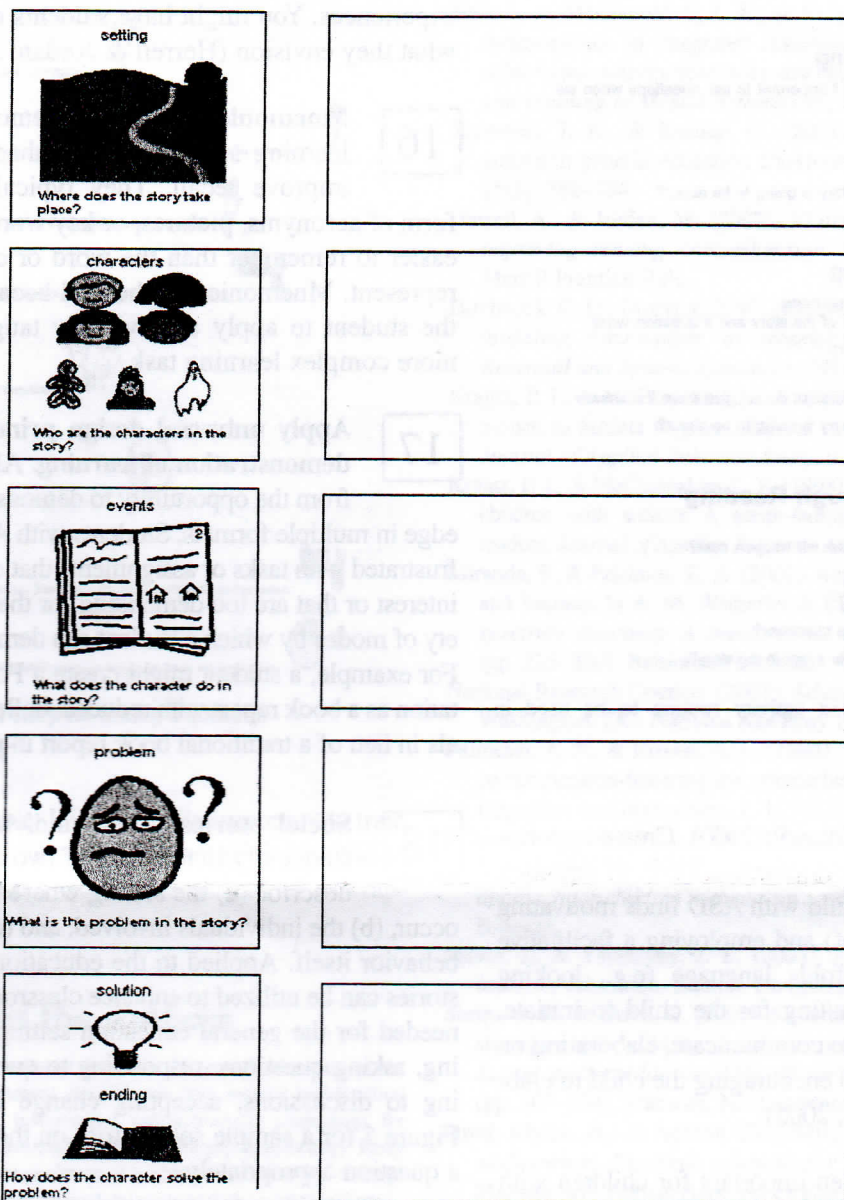
Figure 3.   Example of graphic organizer incorporating visual cues in reading

increases their level of independence, thereby decreasing the need for continuous teacher verbal prompting (Hall, McClannahan, & Krantz, 1995; Harrower & Dunlap, 2001).

12   **Video self-modeling.** Incorporating video as part of the modeling exercise limits the amount of extraneous social cueing the child must to attend to, and it makes the target behavior to be learned stand out in a controlled way. Specifically, the target behaviors are isolated and applied in a natural environment in which the behavior would typically occur. When creating a video, (a) the behavior is role-played by the student with ASD, (b) the tape is edited to

demonstrate only the target behavior, and (c) the tape is then viewed by the child with ASD for approximately 3 to 5 minutes a day (Buggey, 2005). After learning through video self-modeling in classroom settings, children with ASD have shown gains in communication and academic performance as well as decreased instances of inappropriate behavior (Hitchcock, Dowrick, & Prater, 2003).

13   **Initiating.** When a child with ASD is taught to socially initiate toward an adult or peer, this encourages a response, thereby facilitating an interaction. As the child with ASD gains experience participating in effective, reciprocal interactions, overall communication and language is enhanced (Fredeen & Koegel,
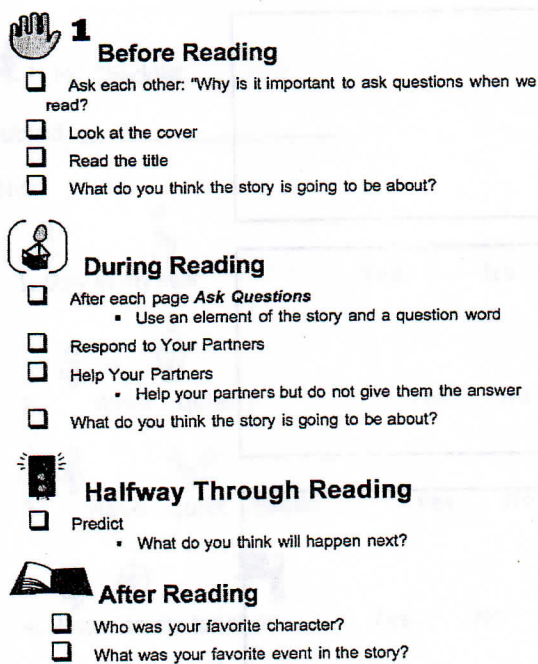
🖐️ **1**
Before Reading

☐ Ask each other: "Why is it important to ask questions when we read?"
☐ Look at the cover
☐ Read the title
☐ What do you think the story is going to be about?

During Reading

☐ After each page *Ask Questions*
  ▪ Use an element of the story and a question word
☐ Respond to Your Partners
☐ Help Your Partners
  ▪ Help your partners but do not give them the answer
☐ What do you think the story is going to be about?

Halfway Through Reading

☐ Predict
  ▪ What do you think will happen next?

📖 **After Reading**

☐ Who was your favorite character?
☐ What was your favorite event in the story?

Figure 4. Example of planned activity routine to be used in reciprocal teaching

2006; National Research Council, 2000). Create opportunities by arranging the environment to elicit an initiation (e.g., using examples the child with ASD finds motivating and has prior knowledge of) and employing a facilitative interaction style that scaffolds language (e.g., looking expectantly at and then waiting for the child to initiate, responding to all attempts to communicate, elaborating on child's communication, and encouraging the child to elaborate) (Wetherby & Prizant, 2005).

14 **Priming.** It is often important for children with ASD to be exposed to activities before they engage in them with their peers. Priming permits the student to be exposed to the new content in a context free of the pressure to perform. It can even provide the child with ASD an opportunity to assume the expert role when the content is introduced to the class as a whole (Werner, Vismara, Koegel, & Koegel, 2006).

15 **Visualization.** Many children with ASD are able to think using mental pictures (Grandin, 2001). Therefore, during classroom instruction, it is beneficial to help the student visualize incoming information (e.g., written text or spoken language). For example, during a reading activity, ask students to create a picture in their minds of what the situation might look like. Then ask students to describe what they are seeing and encourage them to expand their ideas by linking those images to current, previous, or future

experiences. You might have students draw a picture of what they envision (Herrell & Jordan, 2002).

16 **Mnemonic devices.** Mnemonic devices are learning strategies that enhance memory and improve recall. They typically come in the form of acronyms, pictures, or key words intended to be easier to remember than the word or concept that they represent. Mnemonics are helpful because they can cue the student to apply a previously taught strategy to a more complex learning task.

17 **Apply universal design principles to student demonstration of learning.** All students benefit from the opportunity to demonstrate their knowledge in multiple formats. Students with ASD may become frustrated with tasks or assignments that do not necessarily interest or that are too demanding for them. Accept a variety of modes by which a student can demonstrate learning. For example, a student might create a PowerPoint presentation as a book report with reduced, bulleted text and visuals in lieu of a traditional book report in prose.

18 **Social stories.** These individualized stories, frequently in the form of two to five sentences, describe (a) the setting where the behavior will occur, (b) the individuals involved, and (c) the appropriate behavior itself. Applied to the educational setting, social stories can be utilized to enhance classroom survival skills needed for the general education setting (e.g., hand-raising, asking questions, responding to questions, contributing to discussions, accepting change in routines). See Figure 5 for a sample social story on the topic of "asking a question appropriately."

19 **Collaboration with families and school professionals.** Collaboration is critical to meeting the diverse needs of children with ASD. Because of the range of characteristics inherent among these children, multiple school and community professionals often participate in students' educational programming. Moreover, each collaborator, particularly parents, offers a unique perspective on the child and brings individual expertise to developing appropriate individualized education program goals/objectives, as well as instructional techniques to help children meet those targets.

20 **Plan for generalization.** Children with ASD have difficulty generalizing newly learned skills to other settings, situations, people, and environments. Promote generalization by teaching a strategy, concept, or skill using multiple examples, in different settings,
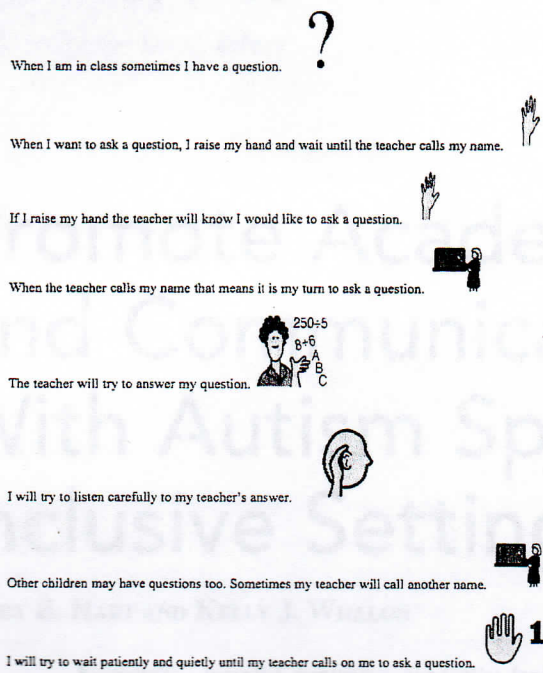
Figure 5.   Sample social story for asking a question

and with different people. It is especially important to train other school personnel who have contact with the child to mirror these instructional techniques as part of a wraparound approach.

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