CHAPTER 5:
INSTRUCTIONAL STRATEGIES FOR THE STUDENT WITH AUTISM SPECTRUM DISORDER

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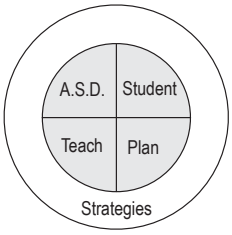
CHAPTER 5: INSTRUCTIONAL STRATEGIES FOR THE STUDENT WITH AUTISM SPECTRUM DISORDER



The team is now prepared to select and implement instructional strategies for students with ASD. This multi-step process involves

- understanding Autism Spectrum Disorder (Chapter 1)
- understanding the student with ASD (Chapter 2)
- planning for the student's education (Chapter 3)
- learning how to implement instruction (Chapter 4)

Chapter 5 contains an overview of the range of possibilities and resources for teaching students with ASD. Instructional strategies are organized according to their relationship to the primary and associated characteristics of ASD. This chapter is not intended to be exhaustive. In addition, instructional strategies may change over time, with new ones appearing and other ones falling out of favour.

Instructional Strategies

The last two decades have seen expansion in the identification of effective instructional strategies for students with ASD. Several reviews are available which summarize research findings for effective early intervention (for ages 0-8) programming as well as applicability to students of all ages.

In 2001 the US National Research Council (NRC) published a report on the state of scientific evidence and the effects of early educational intervention on young children. The report was completed by a national team of scholars at the request of the US Department of Education's Office of Special Education Programs.

According to the NRC report:

- there are many examples of substantial student progress in relatively short time periods, in response to specific intervention techniques
- longitudinal studies have documented changes in IQ scores and in core deficits
- children's outcomes vary, with some making substantial gains and some making slow gains
- although it is clear that some interventions lead to improvements, there is "no direct, clear relationship between any particular intervention and a child's progress" (National Research Council, 2001: 5).

Instructional strategies may address student needs by

- supporting student-specific outcomes (SSOs) in the student's Individual Education Plan (IEP). The name of the person using the strategy, the materials required, and the means of implementation should be recorded in the IEP.
- offering flexibility in the implementation of the programming. For example, if a student has received instruction of sufficient intensity for a reasonable period of time and a review of his progress indicates that he is not progressing the way the team anticipated, the first consideration should be to review the instructional strategies and/or identify necessary prerequisite skills rather than rework IEP outcomes.
- addressing student needs that are not formally identified in the IEP. For example, a class schedule placed on the classroom wall may help students with ASD manage changes in their day. While not documented in an IEP, such approaches can make an important contribution to student success.
- offering variety to the student and educators. For example, if an outcome concerns learning to request objects, then instruction could incorporate a variety of objects in a number of different settings, with different adults and peers throughout the day. This variety has the additional benefit of encouraging the generalization (using it in more than one place with more than one person) of the new skill.

Social Interaction

1. Direct Instruction
2. Teacher Mediation
3. Structured Play/Social Skills Training Groups
4. Social Stories
5. Cognitive Picture Rehearsal
6. Self-Monitoring/Self-Management Skills
7. Peer Mediation and Peer Support

Social and relationship skill development is essential for students with ASD. Appropriate social interactions are important at home, in school, and in community environments.

Learning the basic rules of social interaction may help a student with ASD function more appropriately in social situations. It may also reduce anxiety and challenging coping behaviours.

Many students with ASD feel a drive to interact with others and would like to be part of the social world around them. Typically, however, they don't understand social cues and the rules of interaction, and they have not learned to enjoy interactions with peers or adults. Being accepted by others is central to the quality of life that many people experience and positive relations play a large part in a student's social and emotional development.

"Social interaction refers to establishing and maintaining positive social relations with others, including making appropriate social initiations and appropriately responding to social initiations of others."

—Simpson, R.L., et al. *Social Skills for Students with Autism*, 1991: 2.

To develop social skills and an understanding of how to function in social situations, students with ASD need

- a good relationship with one or more adults
- a repertoire of activities to be used as vehicles for social interaction
- explicit and direct teaching of specific social skills
- opportunities to interact and participate in a variety of natural settings where appropriate models, social cues, and functional reinforcers are available

A note on teaching social skills: It is impossible to separate the development of social and relationship skills from other areas of development, such as adaptive skills, self-help skills, behaviour management and, perhaps most importantly, communication skills. As a result, strategies for developing social skills are embedded in other strategies throughout Chapter 5.

1. Direct Instruction

Social skills are best learned in the context of natural routines, where opportunities are available to make choices, solve problems, and use functional communication and social skills. The development of reciprocal social relationships depends on the interrelationship of factors such as the number, type, setting, and distribution of social interactions in which the student is involved. However, the natural activities of the day do not typically offer enough

For activites to develop non-verbal communication skills, see

- Duke, M.P., and S. Nowicki. *Helping the Child Who Doesn't Fit In*, 1992.
- Duke, M.P., S. Nowicki, and E.A. Martin. *Teaching Your Child the Language of Social Success*, 1996.

(Social Relationships)

opportunities either to teach those lessons that others learn without instruction, or to practise the complex skills required to establish strong social skills.

Direct instruction is a good way to develop social play, peer-group participation, social communication, school interactions, and self-management. Direct skill instruction

- identifies social skills that need to be developed
- determines the steps required to build those skills
- provides practice in a variety of settings

Critical social skills for instruction include

- *understanding and using non-verbal communication:* Gestures, facial expressions, body language, tone of voice and other non-verbal communications of meaning and feeling can be taught using visuals, role-playing, rehearsal, and discussion.
- *waiting:* Visual cues such as objects, pictures, and written words can provide concrete information to make waiting less abstract and more specific to the situation.
- *taking turns:* Turn-taking can be taught through the use of social stories and by using a picture or pictograph to cue the student. It may also be necessary to provide some instruction and rehearsal in turn-taking activities.
- *making transitions:* Using social stories and providing warnings with visual cues, such as symbols that are understood by the student, can help the student make the transition from one activity to another. Transitions can be particularly difficult if the student has not completed the activity; the student may need to be prepared for the possibility of having to finish later.
- *changing the topic in conversation:* Some students may stay on one topic and appear unable or unwilling to talk about anything else. Staying with one behaviour or topic in this way is referred to as perseveration. Visual rules, established time limits, and setting a time and place to engage in a favourite topic may help in teaching students when they need to end or change the topic.

For suggestions for direct instruction in social interaction and social skills, see

- Quill, K.A. *Teaching Children with Autism: Strategies to Enhance Communication and Socialization*, 1995. (Social Relationships)
- Aarons, M., and T. Gittens. *Autism: A Social Skills Approach for Children and Adolescents*, 1998. (Social Relationships)
- Gajewski, N., et al. *Social Star* (Book 1 and 2), 1993. (Social Relationships)
- Jenson, W.R., et al. *The Tough Kid Tool Box,* 2000. (Social Relationships)
- Sheridan, S.M. *The Tough Kid Social Skills Book*, 1997. (Social Relationships)
- Weiss, M.J., and S.L. Harris. *Reaching Out, Joining In*, 2001. (Social Relationships)
- Wilson, C. *Room 14*, 1993. (Communication)

- *completing tasks:* It may help to teach students to use environmental cues, such as observing and following the behaviour of other students, to know when an activity is finished. It may also help to use a timer and to teach methods for checking their own work.
- *initiating an action:* Social stories, combined with photographs or pictures, can be particularly useful for teaching a student how to approach others, ask for something, get into a game, say hello, and leave a situation if upset.
- *being flexible:* Visual supports can be used to explain changes in a concrete way. If sequenced schedules or picture routines are used, a specific picture or symbol can be removed or crossed out and another put in its place.
- *being quiet:* Visual supports may be helpful in teaching the specific behaviours for being quiet and for teaching rules for specific situations.

2. Teacher Mediation

In this approach, the teacher or other adult prompts the student to engage in an interactive behaviour which, if it occurs, is responded to positively by others. The teacher provides the student with verbal prompts to engage in the interactive behaviour. If the student interacts, the teacher provides praise and encouragement; if the student fails to respond, the teacher repeats the verbal prompt and may also provide a physical prompt.

Teacher mediation helps students with ASD increase their level of social interaction. However, teacher prompts can disrupt ongoing social exchanges, resulting in brief, sometimes stilted interactions. It is important to gradually decrease prompts because students with ASD can become dependent on them, initiating and responding only when instructed.

3. Structured Play/Social Skills Training Groups

Structured integrated play groups can provide opportunities for younger students with ASD to interact with their peers, and can create a natural environment for incidental teaching of social skills. Play groups provide natural situations in which students with ASD use language to express wants, practise being near other children, and imitate social interactions between typical peers. Older students with ASD may benefit from systematic social skill instruction within a small-group structured format.

- Wolfberg, P. *Peer Play and the Autism Spectrum*, 2003.

(Social Relationships)

- Sussman, F. *More Than Words*, 1999.

(Communication)

- Winner, M.G. *Thinking about You, Thinking about Me: Philosophy and Strategies to Further Develop Perspective Taking and Communicative Abilities to Persons with Social-Cognitive Deficits*, 2002.
- Winner, M.G. *Inside Out: What Makes a Person with Social-Cognitive Deficits Tick?*, 2000.

(Social Relationships)

Structured play and social skills groups are best held in a relatively small, safe area with limited distractions and well-defined boundaries. There are a variety of social skills training programs and resources available. Effective programming uses assessment to identify skills for instruction. Lessons typically follow a similar format:

- identify the skill, its components, and when the skill is used
- model the skill
- role-play the skill
- provide opportunities to practise
- incorporate strategies for generalization

Useful websites:
<www.socialthinking.com>
<www.socialskillbuilder.com>
<www.iidc.indiana.edu/irca/SocialLeisure/socialskillstraining.html>

Students with ASD may need particular emphasis on learning to generalize new skills. Cue cards, self-monitoring, and self-reinforcement systems can be used in natural settings to prompt students to rehearse skills.

4. Social Stories

A social story describes appropriate social cues and student responses in specific situations. It is written for individual students according to specific needs. The social story can be used for a variety of purposes, including

- facilitating the inclusion of students in a variety of environments
- introducing changes and new routines
- explaining reasons for the behaviour of others
- teaching situation-specific social skills
- assisting in teaching new academic skills

- Gray, C. *Comic Strip Conversations: Colorful, Illustrated Interactions with Students with Autism and Related Disorders*, 1994. Also available in French. (Social Relationships)
- Gray, C. *The New Social Story Book*, 2000. (Social Stories)
- Gray, C. *Taming the Recess Jungle*, 1993. (Social Relationships)
- Gray, C., and A.L. White, eds. *My Social Stories Book*, 2002. (Social Stories)

To be effective, a social story should

- describe a situation from the perspective of the student
- direct the student to do the appropriate behaviour
- be in the voice of the student (i.e., from the "I" perspective)
- be consistent with the student's level of cognitive development

Social stories are developed following established guidelines and can be created by parents, educators, and others.

The process of developing a social story begins with the identification of a student need through observation and assessment. Once a difficult situation is identified, the author observes the situation and tries to understand the perspective of the student in terms of what will be seen, heard, and felt. The author, in collaboration with the student (when

possible), then writes the story at an appropriate comprehension level and from the perspective of the student, and includes descriptive, directive, and perspective statements.

- *Descriptive statements* provide information on the setting, activity, and people involved.
- *Directive statements* are positive statements about the desired response for a given situation.
- *Perspective statements* provide a description of the possible reactions of others.

For more information, see
- Carol Gray's website <www.the graycenter.org>
- <www.linguisystems.com>

A booklet with one or two sentences and one main concept per page is an effective social story format. Depending on the student's level of comprehension, symbols, drawings, or photographs can be included to support meaning for the student.

Sample:

My Turn on the Computer

p. 1 If I wait for my turn on the computer, the other kids like me better.

p. 2 Everyone likes to have a turn on the computer.

p. 3 When other kids are using the computer, I will be quiet and wait for my turn.

p. 4 When I am finished on the computer, other kids can use it. That is okay, because I know I can use it the next day.

p. 5 When I wait for my turn on the computer, everyone will be happy.

There are three basic strategies for implementing a social story:

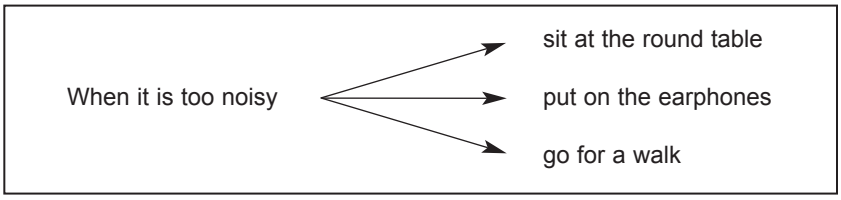
- For a student who reads independently, the story is read aloud twice by an adult, followed by the student reading it aloud. The student then reads it daily.
- If the student does not read, the story may be recorded on a cassette tape with a signal (i.e., bell) to turn the pages. The student is taught to "read" the story and reads it daily.
- To incorporate modeling, the story can be videotaped. The story is read aloud on a videotape, with one page on the screen at a time.

My Turn on the Computer: Adapted from *Teaching Students with Autism: A Resource Guide for Schools.* © 2000 British Columbia Ministry of Education.

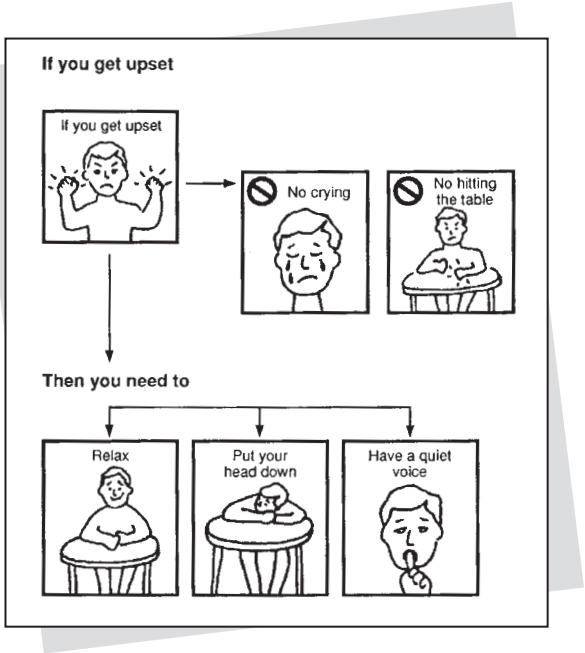
5. Cognitive Picture Rehearsal

Cognitive picture rehearsal can be used to teach a sequence of skills that will enable a student to recognize and control his own stress, resolve his own problems, and re-engage himself in appropriate activity. The scripts used to introduce self-control routines are based on a functional analysis of problematic situations. Scripts or stories are presented as a sequence of behaviours in the form of pictures or pictographs with an accompanying script. The student is guided through repeated practice of the sequence of behaviours and relaxation strategies.

Groden, J., and P. LeVasseur. "Cognitive Picture Rehearsal." *Teaching Children with Autism: Strategies to Enhance Communication and Socialization*, 1995.
(Social Relationships)



(Quill, Kathleen Ann. *Teaching Children with Autism: Strategies to Enhance Communication and Socialization,* 1995: 279.)



If You Get Upset: Reproduced by permission of Quirk Roberts Publishing. <http://www.usevisualstrategies.com>

6. Self-Monitoring/Self-Management Skills

All students, including those with ASD, need to increase independent participation in a variety of environments. One way to increase independence in higher-functioning students with ASD is to teach self-management procedures, in which the student monitors his own behaviour in order to earn positive reinforcement. Self-management may increase on-task behaviour, and decrease challenging behaviour.

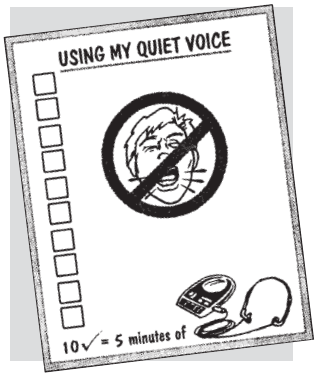
Self-management allows the student with ASD to become more actively involved in the intervention process and more involved in the educational environment. More active involvement by the student with ASD has the potential to improve autonomy by reducing dependence on adult intervention.

Desirable behaviour typically increases when a student is taught to self-monitor. The accuracy of the self-monitoring may not be as important as the process and awareness it builds in the student.

The process for teaching self-management skills includes

- defining the target behaviour that the student will self-monitor
- identifying reinforcers
- creating a self-monitoring method for the student to collect data (for example, a chart, stickers, or some kind of low-tech counting device)
- teaching the student the target behaviour and how to use the self-monitoring method to record the performance of the behaviour
- increasing the student's independence by gradually replacing adult intervention with self-managed student behaviour

- Myles, B.S., and J. Southwick. "Strategies that Promote Self-Awareness, Self-Calming and Self-Management." *Asperger Syndrome and Difficult Moments*, 1999: 61-90. (AS)
- Janzen, J. "Teach Awareness of Self and Others—Self-Control and Self-Management Strategies." *Understanding the Nature of Autism*, 2003: 387-407. (Education)



This intervention often increases social and communication behaviours, as well as other related behaviours. For example, teaching eye contact may improve the student's arm mannerisms, voice volume, and/or body posture during conversation.

7. Peer Mediation and Peer Support

Peers can assist students with ASD in developing social skills. Adult-mediated procedures—those that rely on an adult to evoke or prompt appropriate social behaviour—can disrupt social activities and interfere with social spontaneity. In peer mediation, socially competent students are taught how to initiate and encourage social interactions with their peers with ASD in natural settings.

Using My Quiet Voice: Reproduced from *Teaching Students with Autism: A Resource Guide for Schools*. © 2000 British Columbia Ministry of Education.

Peers are taught how to use specific prompts to initiate and maintain interaction with a classmate with ASD. They can, for example, be taught to initiate "play organizers," such as sharing, helping, and giving affection and praise. Peers can role-play with adults until they have learned strategies successfully, and then they are cued by adults as they interact with their peers with ASD. They may also need help communicating with the student.

In preparation for their role in helping a student with ASD develop social skills, peers should be taught how to

- get the attention of the student with ASD
- present choices of different activities or materials to maintain motivation
- model appropriate social behaviour
- reinforce attempts by the student with ASD to use target social skills
- encourage and extend conversations between themselves and the student with ASD
- encourage social turn-taking

Peers should be praised and encouraged for their efforts, just as the student with ASD is reinforced for demonstrating specific social skills.

Opportunities for meaningful contact with peers may include

- involving the student in shared learning arrangements
- pairing the student with buddies when walking down the hall, on the playground, and during other unstructured times
- varying peer buddies across time and activities to prevent dependence on one student
- involving peers in providing instruction
- arranging cross-age peer supports/buddies by assigning an older student to assist the student with ASD
- pairing peers and students with ASD at special school events such as assemblies and clubs
- facilitating involvement in after-school or extracurricular activities

If the school has an arrangement in which a class of older students is paired with a younger class, ensure that the student with ASD is also paired and provide the necessary supports for success.

Educators and parents may facilitate further social interaction by

- encouraging a friend to play with the child at home
- helping the student join school clubs, with support as needed to participate
- teaching the student to observe others and to follow what they do
- encouraging co-operative games
- modeling how to relate to the student with ASD, and educating other students in the class to do so
- doing projects and activities that illustrate the qualities of a good friend

- helping the student to understand emotions through direct teaching of how to read people's faces and body language and how to respond to cues that indicate different emotions

A final note: Developing specific social skills enables the student with ASD to interact with others in a variety of settings and facilitates the development of social opportunities and relationships. However, students who demonstrate basic social skills with adults may still have difficulty establishing connections and maintaining interactions with peers.

Communication Development

1. Learning to Listen
2. Developing Comprehension
3. Developing Expression
4. Developing Conversation Skills
5. Using AAC Systems
6. Echolalia

Most students with ASD do not develop communication skills without being taught. Developing the communication skills of students with ASD allows for greater independence and potential success in school and community life. A student who is able, for example, to express needs and wants, interact socially, share information, express emotions, and indicate when situations are unpleasant or confusing will have a more positive school experience than a student who cannot.

Janzen, J. "Expand Communication Skills and Options" (341-368) and "Expand Communication and Social Competence" (369-386). *Understanding the Nature of Autism*, 2003. (Education)

A note on teaching communication skills: There is a great deal of overlap between the development of verbal comprehension, expression, and conversation skills. Strategies described in one section will likely be applicable to the other two as well. Similarly, it is impossible to separate the development of language and communication from other areas of development, such as social skills, cognitive and academic skills, self-help skills, and managing behaviour.

1. Learning to Listen

Students with ASD typically need structured lessons on how to listen. Reinforcing listening efforts, rather than assuming that listening is an automatic behaviour, may be necessary. Breaking listening down into components and reinforcing the student for successful attempts of each component may be helpful—for example, teach the student to face the speaker, look at one spot (which does not necessarily mean making eye contact), and place hands in a planned position. Remember that many students with ASD may listen more efficiently if they do not look at the speaker and/or if their hands are occupied.

The strategies described in Chapter 4 for teaching imitation, waiting before acting, joint focus and attention, and new skills all require a student to learn to listen. These skills are necessary for the development of language and communication and should be considered a crucial component of the student's programming.

2. Developing Comprehension

The strategies for developing focus and attention are useful for developing comprehension skills.

Verbal language comprehension can be taught with structured, formal strategies, or more informally through modeling and other facilitative techniques.

Structured strategies typically involve specified procedures for teaching target vocabulary. An example of a structured approach to developing verbal comprehension is provided on the following page.

For examples of structured programs for developing verbal comprehension, see

- Leaf, R., and J. McEachin. *A Work in Progress: Behavioural Intervention for Young Children with Autism*, 1999.
- Sundberg, M.L., and J. Partington. *Assessment of Basic Language and Learning Skills (the ABLLS): An Assessment, Curriculum Guide and Skills Training System for Children with Autism or Other Developmental Disabilitie*s, 1998.

(ABA)

This is an example of a structured approach to learning new words ("receptive labels") using behavioural techniques. The adult teaching the student directs the lesson, prompting the student and reinforcing correct responses according to a prescribed procedure, with the intention of reaching specific outcomes. Entry criteria describe the skills the student must demonstrate before beginning this level of training, and mastery criteria describe the behaviours the student must demonstrate to move to the next level.

Receptive Labels

Objectives:

1. Learn the name of objects, activities, and concepts
2. Develop abstract reasoning (for example, making deductions)
3. Facilitate attending skills

Procedure:

Student sits at the table and the teacher sits next to or across from the student. Place two or more objects on the table, spaced well apart from each other. Tell the student, "Touch [item]." Move the objects around after each trial. Many students will get more actively engaged in the task if the response is handing the item to the teacher. In this case, the instruction would be "Give me [item]. " As soon as possible, you should vary the instruction (for example, "Touch…", "Give me…", "Point to…", "Show me…", "Where is…?", etc.). Often, it is possible to omit the command word and simply name the desired item. This may make it easier for the student to zero in on the essential word. Interest can be increased by varying the way materials are presented. For example, the student could go around the room to find the named items or select the item from a Velcro™ board.

Select Objects that Are Motivating and Functional for Student to Learn

Prompts:

Use physical guidance, pointing, or position prompt. Gradually fade prompts until the student is performing the task independently.

Entry Criteria:

Students can correctly match items to be trained or imitate action. Establishing some simple verbal directions can facilitate progress in this program but is not a prerequisite.

Mastery Criteria:

Student performs a response eight out of ten times correctly with no prompting. This should be repeated with at least one additional teacher.

Please note: These strategies should be implemented by a qualified professional or by an appropriately trained person under the direction of a qualified professional.

Receptive labels: Adapted from *A Work in Progress: Behavior Management Strategies and a Curriculum for Intensive Behavioral Treatment of Autism* by Ron Leaf and John McEachin.

Informal strategies take advantage of naturally occurring opportunities for teaching new vocabulary. This is particularly useful when a student shows interest in specific objects, people, or situations. Labelling, for example, involves identifying the name of something the student is attending to. The label may be verbal or visual (for example, photograph, line drawing, or print). Through the association of the label with the person or thing, the student learns its name. An example of an informal activity is provided below.

This is an example of a less structured, more informal approach to learning new words. Specific outcomes (taken from General Learning Outcome 2 of the Kindergarten English Language Arts Curriculum) are taught by following prescribed procedure. The activities fit the student's current level of development.

Janice, a Kindergarten student with ASD, participates with her classmates in experiences that demonstrate the special functions of written (and spoken) language each day. At the *Sign-Making Centre*, students create their own labels for objects in the classroom on recipe cards. After a student creates a sign, he or she is joined by the teacher and Janice, and they attach the cards to the corresponding objects. They walk to the appropriate place in the room (for example, a window) and the adult says: "This is the word 'window.' Please help me tape it to the window."

Please note: These strategies should be implemented by a qualified professional or by an appropriately trained person under the direction of a qualified professional.

Incidental teaching is another example of an informal approach to developing verbal comprehension. Incidental teaching involves using events and routines as teaching opportunities. For example, a self-help routine such as washing hands can be used to teach the vocabulary involved in that activity, such as sink, water, taps, soap, towel, etc.

For a description of incidental teaching, see Watson, L.R., et al. *Teaching Spontaneous Communication to Autistic and Developmentally Handicapped Children*, 1989: 84-86.

(Communication)

It is a good practice to use visual supports when developing language comprehension. Visual supports aid comprehension of verbal language because they help to obtain and maintain the student's attention. Accompanying spoken language with relevant objects, pictures, and other visual supports may also help with comprehension. Interestingly, many students with ASD use reading to support verbal language comprehension, rather than the expected reverse of using verbal language to support reading. This makes reading instruction even more significant for these students.

When working with students who are higher functioning, do not assume they understand information even if they are able to repeat it. It is always important to check for comprehension. In addition, a student who demonstrates good recall may not grasp the intended meaning. Students with ASD tend to be literal and concrete in their comprehension of language and may need to be taught the meanings of idioms, figures of speech, words with more than one meaning, and so on.

For two volumes that provide black and white visuals and activities to teach concepts, see Mulstay-Muratore, L. *Autism and PDD: Abstract Concepts, Level 1 and Level 2*, 2002.

(Education)

3. Developing Expressive Communication

While many students with ASD may not develop traditional verbal language, most do develop some form of communication. It is important that people involved with the student understand how he communicates, and set realistic expectations for communication.

For students who make few attempts to communicate, the use of *communication temptations* is a powerful way to encourage beginning communication with others. Table 5.1 contains a list of possible communication temptations. It is also useful to search the student's interests for other communication temptations.

Table 5.1: Communication Temptations

1. Eat a desired food item in front of the child without offering any to him or her.
2. Activate a wind-up toy, let it deactivate, and hand it to the child.
3. Give the child four blocks to drop in a box, one at a time (or use some other action that the child will repeat, such as stacking the blocks or dropping the blocks on the floor); then immediately give the child a small animal figure to drop in the box.
4. Look through a few books or a magazine with the child.
5. Open a jar of bubbles, blow bubbles, and then close the jar tightly and give the closed jar to the child.
6. Initiate a familiar social game with the child until the child expresses pleasure, then stop the game and wait.
7. Blow up a balloon and slowly deflate it; then hand the deflated balloon to the child or hold the deflated balloon up to your mouth and wait.
8. Offer the child a food item or toy that he or she dislikes.
9. Place a desired food item in a clear container that the child cannot open; then put the container in front of the child and wait.
10. Place the child's hands in a cold, wet, or sticky substance, such as Jell-O™, pudding, or paste.
11. Roll a ball to the child; after the child returns the ball three times, immediately roll a different toy to the child.
12. Engage the child in putting together a puzzle. After the child has put in three pieces, offer the child a piece that does not fit.
13. Engage the child in an activity with a substance that can be easily spilled (or dropped, broken, torn, etc.); suddenly spill some of the substance on the table or floor in front of the child and wait.
14. Put an object that makes noise in an opaque container and shake the bag; hold up the container and wait.
15. Give the child materials for an activity of interest that necessitates the use of an instrument for completion (for example, a piece of paper to draw on or cut, a bowl of pudding or soup); hold the instrument out of the child's reach and wait.
16. Engage the child in an activity of interest that necessitates the use of an instrument for completion (for example, pen, crayon, scissors, stapler, wand for blowing bubbles, spoon); have a third person come over and take the instrument, go sit on the distant side of the room while holding the instrument within the child's sight, and wait.
17. Wave and say "bye" to an object and remove it from the play area. Repeat this for a second and third situation, then do nothing when removing an object from a fourth situation.
18. Hide a stuffed animal under the table. Knock, and then bring out the animal. Have the animal greet the child the first time. Repeat this for a second and third time, then do nothing when bringing out the animal for the fourth time.

For students with limited expression, educators and families should accept verbal attempts and non-verbal behaviour as communicative. A customized interpretation dictionary is a very useful tool in which staff and parents can document what the student says and what is meant, along with planned adult responses to language attempts.

Communication attempts made by students with ASD may be misunderstood or mistakenly ignored. These attempts can be analyzed and recorded in an individualized interpretation dictionary that all people interacting with the student can use. People can refer to the dictionary to help them understand and interpret the student's communication. Planned responses that support language development are assigned to correspond to each attempt, while still acknowledging the attempts. Inappropriate behaviours should be shaped into more appropriate communication attempts.

Interpretation Dictionary

What the student does	What it might mean	How to respond
reaches for food item	asking for the food item	Say "want (food item)" and give the student a small sample of the item.
says the utterance "Boo-chm"	asking for computer time	Point to picture of computer on pictoboard, and say "computer," allow access to computer.
falls prone on the floor	protesting or refusing	Do not respond to the protest, assist student to stand up, saying "stand up," and continue task. (Acting on this protest could reinforce this maladaptive behaviour. Teach appropriate protest communication at another time and reinforce.)

Even those students with ASD who do have verbal language may not add new words to their verbal repertoire easily. Educators and parents will need to teach new vocabulary in a variety of contexts, often using visual supports. To learn and use new vocabulary in a meaningful way, students need to know that

- everything has a name
- there are different ways of saying the same thing
- words can be meaningful in a variety of contexts
- learning to use words will help them communicate their needs and desires

For activities to teach grammar and syntax, social language, and language-based academic concepts, see Freeman, S., and L. Dake. *Teach Me Language*, 1996. (Communication)

Interpretation Dictionary: Adapted from *Teaching Students with Autism: A Resource Guide for Schools*. © 2000 British Columbia Ministry of Education.

Students who rely on pictorial representations to communicate will need to learn that a drawing or representation has a name and can give direction or tell us what to do. Understanding this fact is essential if visual systems are going to provide meaningful communication.

4. Developing Conversation Skills

Virtually all students with ASD have difficulty with the pragmatics of communication—the interpretation and use of language in social situations. Even those who have a good vocabulary and appear to have a command of the language may have a restricted understanding of social and conversational interactions.

Janzen, J. "Skills for Social and Communication Competence." *Understanding the Nature of Autism*, 2003: 371-372. (Education)

Students will need direct instruction and opportunities for social interactions and community-based experiences to practise conversation skills. These experiences and opportunities should include situations that encourage a variety of communicative functions, such as

- requests (for example, for food, toys, or help)
- negation (for example, refusing food or a toy, protesting when asked to do something, or indicating when the student wants to stop)
- commenting (for example, labelling pictures in books, objects from a box, or play activities)

For most students, it will be necessary to teach the verbal language needed for social and communicative play. This can be done by providing structured play opportunities that incorporate the student's interests. Modeling, physical prompts, visual cues, and reinforcement can be used to facilitate attention, imitation, communication, and interaction. To facilitate social communication, structure interactions around the student's activity preferences and routine. Encourage informal and formal communicative social exchanges during the day.

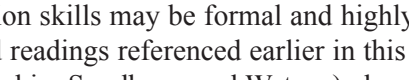
To assist the general development of conversation skills:

- focus on developing interaction and communication in the environments in which the student participates (for example, the classroom, playground, gym)
- use sentences when talking to the student. Keep in mind that you are modeling speech as well as trying to communicate.
- use vocabulary at the student's comprehension capability. For students with a more severe communication disability, choose familiar, specific, concrete words, and repeat as necessary.
- use language that is clear, simple, and concise. Figures of speech, irony, or sarcasm will confuse students with communication difficulties.
- allow time for the student to process information. It may be necessary to talk more slowly or to pause between words. The pace of speech should depend on the ability of the individual student.

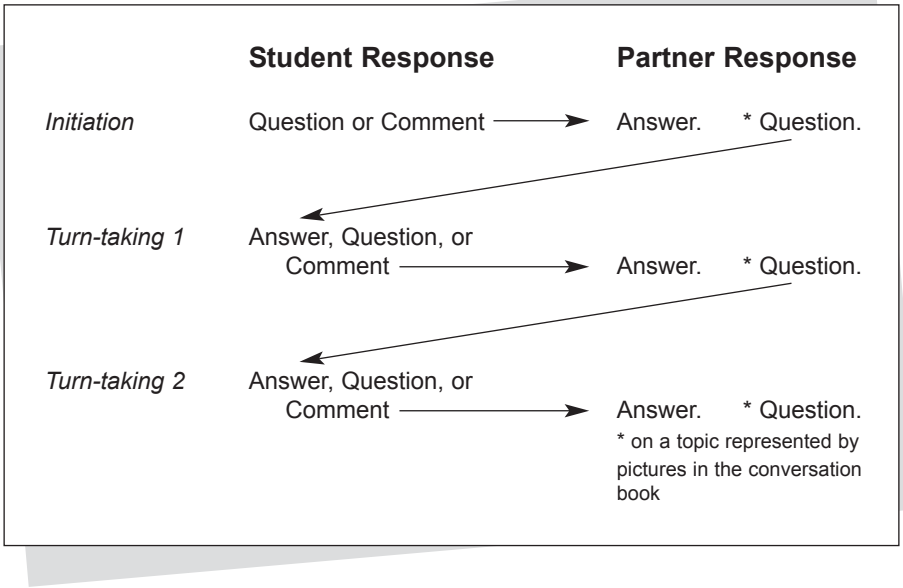
- provide frequent repetition of target items. Students with ASD typically require more time and more practice to learn.

As with verbal comprehension and expression, strategies for developing conversation skills may be formal and highly structured, or informal. Suggested readings referenced earlier in this chapter (for example, Leaf and McEachin, Sundberg, and Watson) also contain descriptions of strategies for developing conversation skills for students with ASD.

Remnant and conversation books contain objects or pictures of activities or things of high interest to the student and serve as a focal point for conversations. The conversation with peers is supported by an adult, who provides prompting and assistance as required. The goal is to keep the conversation moving back and forth, as illustrated in the diagram below.



For a description of conversation books and a description of remnant books, see Beukelman D.R., and P. Mirenda. *Augmentative and Alternative Communication: Management of Severe Communication Disorders in Children and Adults*, 2nd ed. 1998: 316-322.
(Social Relationships)



(Pam Hunt, Morgen Alwell, and Lori Goetz. *Conversation Handbook*, 1991: 27.)

Students with ASD have difficulty understanding subtle social messages and rules, and also have problems interpreting the non-verbal communication of others. It may be helpful to provide a concrete rule (when one exists) and to present it visually, either in print or as a more concrete symbol.

The Picture Exchange System (PECS) provides a structured approach to developing communication skills using picture symbols. This approach offers students with ASD a highly visual and concrete opportunity to learn new words, and structured practice in using them in conversational formats.

For a description of the PECS approach and how it is implemented, see

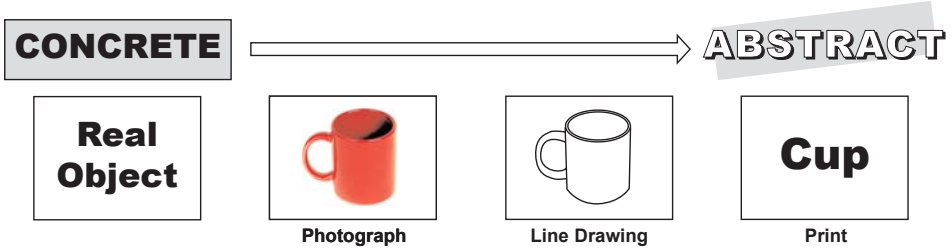
- Frost, L.A., and A.S. Bondy. *The Picture Exchange Communication System: Training Manual (PECS)*, 1994.
- Frost, L.A., and A.S. Bondy. *A Picture's Worth: PECS and Other Visual Communication Strategies in Autism*, 2002. (Visual Strategies)

5. Augmentative/Alternative Communication (AAC)

Augmentative/Alternative Communication (AAC) helps students with ASD who have difficulty using spoken language to communicate. The most commonly used AAC strategies involve using an object, a picture, a line drawing, or a word to represent a spoken word. Students with limited spoken language point to the symbol to communicate to peers and adults.

AAC symbols are selected according to the student's level of cognitive development. A student with a significant cognitive disability will likely do better with more concrete symbols, such as real objects or photographs. A student who does not have a cognitive disability may be able to use line drawings or words. In many cases, students will use a combination of symbols.

Manitoba Education and Training. *Foundations for Augmentative and Alternative Communication: A Decision-Making and Assessment Tool*, 1995.



Please note: Put the word and the visual symbol together to stimulate the student's reading potential.

AAC is important for students with ASD because

- communication is a significant challenge for all students with ASD, ranging from students who are non-speaking to students who have difficulty with the subtleties of language and its use
- AAC uses visual symbols, which tap into the visual learning strengths of students with ASD
- AAC allows students to communicate more successfully, which typically results in improvements in social interaction and behaviour, and reductions in anxiety and resistance

The decision to use AAC with a student with ASD should be made by the team after considering the student's profile and his priority learning needs. The team will need to have current information about the student's level of development in the area of

- communication skills (for comprehension and production of spoken language)
- cognitive skills (for selecting symbols that the student will be able to understand)
- fine motor skills (for pointing to symbols)
- visual skills (for perceiving the symbols)

For more information on AAC for persons with ASD, see the special issue of *Focus on Autism and Other Developmental Disabilities*, 16, 3, Fall 2001.

(Communication)

Please note: AAC typically stimulates the potential for spoken language in students with ASD; it will not hinder the acquisition of spoken communication.

6. Echolalia

Some students with ASD demonstrate echolalia, the literal repetition of words or phrases they have heard other people say. Echolalia can be immediate (the student repeats what was just heard) or delayed (repeated later, sometimes many months or years later). For young students with ASD, echolalia may be part of how their language develops.

In some situations, immediate echolalia may be used as a strategy to teach more appropriate spoken language. If a student echoes questions, for example, it may be possible to tie a meaningful consequence to echoed speech, as in this exchange at snack time in a Kindergarten room.

Adult: [holding up juice container]: "May I have juice?"

Student: [echoes] "May I have juice?"

Adult: [gives juice to student]: "Sure. Here it is."

Delayed echolalic utterances may have no obvious meaning for the listener. For example, a student with ASD may repeat television commercials word for word. To understand the possible function of the echolalia, it is helpful to think of it as a chunk of language that has been stored without regard for meaning.

For more information see Rydell, P.J., and B. Prizant. "Assessment and Intervention Strategies for Children Who Use Echolalia." *Teaching Children with Autism*, 1995: 105-132.

(Communication)

A situation or emotion may trigger the echolalia, even if it seems to have no connection to the situation. For example, if a student echoes the script from a soft drink commercial it may mean he is thirsty or does not know how to request something to drink. However, a logical connection for some delayed echolalic utterances may never be discovered. When possible, try to determine what has elicited the echolalia and teach the appropriate language to use for that situation. It is important not to assume that the student understands the content of the echolalic speech being used.

Restricted Repertoire of Activities, Interests, and Behaviours

1. Reduce or Replace Repetitive Behaviours
2. Help the Student Learn to Manage Distractions
3. Take Advantage of the Behaviours for Instruction

Restricted and repetitive behaviours such as rocking and spinning may serve an important function for the student with ASD. For example, a student may demonstrate these behaviours to

- block out unpleasant sensory stimulation (for example, loud noises, bright lights)
- get adult attention
- avoid certain tasks, situations, or people

For an article on "Restricted Repertoires in Autism and What We Can Do About It", see <www.iidc.indiana.edu/irca/education/restrict.html>

It may not be a good use of instructional time to eliminate a particular behaviour, considering all the skills a student typically needs to learn. Often, if a student is prevented from doing one type of behaviour, another will take its place because the student has an underlying need to perform the behaviour.

While many such behaviours cannot be totally eliminated, there are strategies that help to lessen their impact on the student and his learning:

1. reduce or replace repetitive behaviours
2. help the student learn to manage distractions
3. take advantage of the behaviours for instruction

1. Reduce or Replace Repetitive Behaviours

For reducing or replacing repetitive behaviours, consider

- teaching an alternative behaviour that is related, but more socially acceptable
- providing a variety of sensory experiences during the day
- trying to divert the student's attention to another activity when the behaviour is happening
- negotiating when and where the repetitive behaviours are acceptable. Designated times (and settings) to perform the behaviours may reduce the need to engage in it.
- gradually reducing the amount of time allotted for the behaviour. Increase the amount of time between scheduled times for repetitive behaviours.
- using the level of repetitive behaviour to assess the student's level of stress and teaching him more appropriate ways to manage it
- allowing the student to engage in the behaviours in an emergency situation to calm down

2. Help the Student Learn to Manage Distractions

Students with ASD may be taught to recognize sources of distraction and learn to manage them. For example, a student may

- use earplugs or headphones to reduce the impact of background noise
- move to a desk in an area of the classroom that is free of visual distractions
- approach an adult for assistance

3. Take Advantage of the Behaviours for Instruction

There are ways to take advantage of the behaviours for instruction. For example, if the student uses the repetitive behaviour to calm down, it may be appropriate to teach other methods of relaxation that provide the same sensory feedback. For some students, it may be appropriate to find another source of stimulation that may satisfy the sensory need.

For a student interested in numbers, put numbers on the steps of tasks or on surprise envelopes or containers to be opened. A student interested in collecting license plates can do a project on provinces or states or different makes and models of cars. A student who collects facts and statistics and loves game shows can create a Trivial Pursuit™ game with questions and answers on a classroom unit, and be the quiz master when the game is played in class.

Sometimes, the behaviours may be used to motivate the student. Students with ASD who like to rock their bodies or spin objects can do a task and then enjoy the sensation for a brief time. Those who like to line up objects can tidy shelves in the library. Those who like to complete puzzles can earn puzzle pieces for tasks and have a few minutes to add pieces to the puzzle between subjects.

Associated Features

1. Unusual Responses to Sensory Stimuli
2. Anxiety
3. Resistance and Anger Management
4. Limited Problem-Solving and Independence
5. Scattered Developmental Profile

The associated features of ASD, while not included in the official diagnosis, will be present in varying degrees in most students with ASD. This section offers strategies for addressing the impact of the associated features of ASD on the student.

Associated features are additional characteristics that are present to different degrees in most students with ASD. They include

- abnormal responses to sensory stimuli
- anxiety
- resistance and anger management
- limited problem-solving and independence
- scattered developmental profile

1. Unusual Responses to Sensory Stimuli

Students with ASD may be hypo-sensitive, hyper-sensitive, or both to different stimuli. For example, they may pull away from light touch but not appear to notice a skinned knee. They may also show reactions one day but not the next.

Table 5.2 provides a summary of strategies to address abnormal responses to sensory stimuli.

For additional information on sensory integration and suggestions for activities and strategies, see

- Hong, C.S., H. Gabriel, and C. St. John. *Sensory Motor Activities for Early Development*, 1996.
- Haldy, M., and L. Haack. *Making It Easy*, 1995.
- Kranowitz, C. *The Out-of-Sync Child*, 1998.
- Williams, M.S., and S. Shellenberger. *Take Five!*, 2001.
- Yack, E., S. Sutton, and P. Acquilla. *Building Bridges through Sensory Integration*, 1998.

(Sensory/Self-Regulation)

Table 5.2: Sensory Systems: Common Difficulties and Strategies

COMMON DIFFICULTIES WITH SENSORY SYSTEMS	
AUDITORY 	
Hypo-Reactive Behaviours	**Strategies**
• does not distinguish speech from other environmental sounds • does not respond to name being spoken • seems oblivious to sounds of surrounding activities • creates constant sounds as if to stimulate self, such as echoing TV jingles or repeating sounds he enjoys such as “looks like a slippery snake” • has difficulty distinguishing between similar sounds such as ‘make’ and ‘rake’ • uses voice that is too loud or too soft or with atypical rhythm • unsafe because does not react to sounds indicating potential danger	• ensure hearing has been assessed • use game situations to teach him to recognize and respond to his name • directly teach the names of a few key people, objects in his environment, action words, positional/directional words, and other phrases commonly used by teachers or peers • sensitize him to the source of sounds in his environment—music, toys, faucets, machines—and teach him how to control them • teach new or difficult material in setting with no other sounds • experiment to see what particular sounds or vocal highlighting such as animation, tone of voice, or volume are alerting or reinforcing: practise in one-to-one settings and transfer to classroom • develop alerting signal which means “important, pay attention” and train child to respond with educational assistant in low-stimulation setting and then with teacher in classroom • teach a few simple signs and use them with spoken words to help child focus attention • use touch to get child’s attention and direct it to speaker • when giving directions, get attention, use few words, wait for processing, supplement with gestures or visuals • use audio-taping and videotaping to teach volume control of voice • teach child to focus attention on person speaking to whole class rather than waiting for one-to-one repetition from assistant • if possible, seat child close to where teacher usually stands or sits to talk when listening is required • practise with role-playing to help student connect sounds to possible dangers • to teach sound discrimination, use visuals and rules to support learning

COMMON DIFFICULTIES WITH SENSORY SYSTEMS	
AUDITORY 	
Hyper-Reactive Behaviours	**Strategies**
• easily distracted by background sounds • over-reacts or reacts unpredictably to quiet or everyday environmental sounds • holds hands over ears or presses fingers in front of ears to block sound • responds physically as if sound is a threat • becomes anxious in anticipation of unpleasant sounds • repeats all background sounds in environment as low murmur • has difficulty looking and listening at same time	• sensitize others to student's reactions to loud or unexpected noises and prevent provocation • modify environment as possible with carpeting, tennis balls on chair legs, etc. • provide earplugs or earphones to muffle noise when student is working independently rather than listening, or when in noisy settings such as music class, assemblies, gym • warn of noises coming such as bell, fire drill, buzzing VCR monitor • teach student to recognize and screen distracters • give frequent breaks from noisy setting; try occasional whole-class 15-minute whisper breaks • give student a way to let you know when he's overloaded • use gradual desensitization to increase tolerance for sound • allow student to listen with eyes closed or while looking at desk; let him see and feel materials before or after lesson • gradually teach listening and looking at same time since it is an important skill; start in 1:1 setting

COMMON DIFFICULTIES WITH SENSORY SYSTEMS	
VISUAL 	
Hypo-Reactive Behaviours	**Strategies**
• seems unaware of the presence of other people • unable to locate desired objects, people • loses sight of people or objects when they move • can't distinguish figure-ground relationships (can't find the book that is "right there in front of him") • can't draw or copy what he sees • has difficulty with eye-hand coordination and changing focus (copying from board or overhead) • has difficulty with spatial awareness (bumps into people or objects rather than moving around them, can't judge distance) • has difficulty tracking (looking where someone is pointing, following a line of print, catching a thrown ball) • may stare intently at people or objects without blinking	• consult with occupational therapist • ensure vision has been assessed • provide student with frequent chances to look at new and interesting things, and teach him to use vision to find small objects or items in busy pictures • experiment with angled rather than flat reading/writing surface • increase contrast by letting child use a dark mat on which to count objects, circling problems to be done, boxing or highlighting areas on a page such as instructions, etc. • keep board organized with lines or space between different writing and locate items such as homework assignments or daily schedule in a consistent place • teach student to scan worksheets or other reading materials to locate instructions, key words, answers to questions • keep classroom materials in consistent place, and involve child in re-arranging if necessary • photocopy reading materials and let student use highlighter to identify words, answer questions, etc. if student can't locate them visually • experiment to find optimum amount of work to present visually at one time (for example, cutting cardboard screen to reveal only one line of print at a time); when using overhead, uncover one line at a time • use visual strategies to organize work, increase reliance on environmental prompts, etc. • teach child to shift attention visually rather than fixating; try a written script to explain how to do this, and how people feel when someone stares too long

COMMON DIFFICULTIES WITH SENSORY SYSTEMS	
VISUAL 	
Hyper-Reactive Behaviours	**Strategies**
• disturbed by bright or flickering indoor lighting or glare • covers eyes or squints to avoid sunlight • follows any movement in the room with eyes • blocks field of vision with hands • covers part of visual field—puts hands over part of the page in a book • responds physically to appearance of certain objects • responds physically as if movement of people or objects in environment is a threat • avoids looking directly at people or objects; prefers to use peripheral vision	• sensitize everyone in student's environment to student's over-sensitivity to light • adjust seating/lighting to minimize glare; let child wear baseball cap or visor if that helps shield from glare • experiment with angled rather than flat reading/writing surface • use visual limits to define his space—a carpet square to sit on, a tape boundary for his space at a table, a tape line to mark classroom travel patterns • keep classroom materials in consistent place, and involve child in re-arranging if necessary • use visual strategies to organize work, student's belongings, and environment, and to increase reliance on environmental prompts • reduce visual distractions such as bulletin boards or homework assignments in area where student needs to look most frequently, especially when listening • teach student to recognize and screen distracters (sunglasses or hat for outside, using hands as blinders, placing folders or cardboard on desktop) • experiment to find optimum amount of work to present visually at one time; when using overhead, uncover one line at a time • keep blackboard clear and uncluttered, draw lines or use coloured chalk to highlight writing on board • provide low-stimulation area for seatwork such as study carrel, desk facing wall, or out-of-class setting • provide occasional breaks from a visually stimulating setting; in classroom, try drawing blinds and turning off lights periodically • seat student in front, closest to where teacher usually stands, rather than at back of class • try some behavioural techniques; identify need for student to ignore visual distracters and focus on task, provide reinforcement each time student is observed doing this, decide together on "celebration" when he reaches a set goal • for young children, hold objects child likes closer and closer to your face to help him tolerate eye contact and facial expressions

COMMON DIFFICULTIES WITH SENSORY SYSTEMS	
TACTILE 	
Hypo-Reactive Behaviours	**Strategies**
• does not seem to notice touch of others when used to get his attention • touches other people and objects to get information • seeks deep touch, such as bear hugs, back rubs, rough play • wants to touch surfaces and materials which give strong feedback, such as hot, cold, rough, sharp • frequently puts things into mouth or explores environment by licking walls, door frames, desks • chews collar or clothing • does not adjust clothing which would seem to be an irritant, such as tight elastic or shoes on wrong feet • seems unaware of "mess" on face or hands • high pain threshold, unaware of danger because of low response to pain • may have poor tactile discrimination and be unable to identify objects or textures by touch • does not seem to grasp concept of personal space; constantly stands too close to another person when talking	• consult with occupational therapist to identify sensory diet of calming, alerting, and desensitizing strategies to improve child's ability to register, process, and tolerate touch • experiment to see kind and frequency of sensory input needed by child throughout day • give ample opportunity for oral stimulation (crunching ice, chewing gum, blowing bubbles, mouthing specific objects which are kept separate and cleaned regularly with scent-free non-toxic soap) • provide bandana or plastic tubing around neck to replace chewing on clothing • develop child's ability to explore using other senses than oral • help him use other senses such as visual to improve ability to discriminate by touch • call child's attention to injuries and teach rules for proper care

COMMON DIFFICULTIES WITH SENSORY SYSTEMS	
TACTILE 	
Hyper-Reactive Behaviours	**Strategies**
• touch defensive—does not like to be touched, especially light touch or touch which he can't see coming • may use back of fingers or nails or palm or heel of hand or other body part to touch, hold or move objects, or will only use fingertips rather than palms • when child is distressed, touch or affection aggravates rather than calms or reassures • has difficulty lining up because of fear of being touched from in front or from behind • resists hand-washing, having hair, face or body washed, teeth-brushing, being touched by towels or washcloths, swimming • avoids tasks with strong tactile element (clay, glue, playdough, sand, water play, paint, food preparation) • complains about discomfort of certain kinds of clothing, elastic, seams or labels, and tugs at clothes or wiggles constantly • refuses to wear certain items—wants to wear shorts year round or wears only long pants, pushes up snowsuit sleeves to keep arms exposed or wears heavy long sleeves in hot weather to prevent feeling of air moving on skin • refuses to go barefoot or insists on bare feet at all times • responds negatively to textures in foods, toys, furniture • reacts excessively to minor touch such as a raindrop or leaf touching his arm, or to small hurts such as a scrape, and may continue to remember and talk about the injury	• consult with occupational therapist to identify sensory diet of calming, alerting, and desensitizing strategies to improve child's ability to register, process, and tolerate touch • sensitize everyone in student's environment to his over-sensitivity to touch • provide touch or massage to palms and fingers before child needs to use them for manipulatives, printing, etc. • find ways to comfort child or for him to comfort himself; this may involve deep touch or pressure or other relaxation techniques • place desk away from traffic path in class • consult with parents to ensure clothing is comfortable and washed with non-irritating detergent; try removing labels from clothing, wearing socks inside out • experiment to find best arrangements for lining up, using hallways and lockers, removing outerwear, bathroom and hygiene issues • try using social stories with illustrations to explain need for specific outdoor wear and shoes, procedures for lining up, responding to minor injuries, etc.

COMMON DIFFICULTIES WITH SENSORY SYSTEMS

VESTIBULAR and PROPRIOCEPTIVE

Hypo-Reactive Behaviours	Strategies
• seems to need constant movement of some part of body; rocks or fidgets; can't stay still • seeks out stimulating motor activities such as merry-go-rounds, moving toys, swinging, being whirled by adult; seems to like feeling of being dizzy • may take excessive risks (jumping from high places, hanging from trees) or seek out dangerous activities for the thrill • may deliberately bump or crash into objects or people • may use too much pressure to pick up or hold objects, tie laces, print, touch a pet, hit computer keys, manipulate switches, turn doorknobs • may have difficulty with tasks when he can't see what he is doing (dressing, putting on glasses or earphones) or when he must watch in a mirror (combing hair, brushing teeth) • may have difficulty orienting body for activities such as putting arms in sleeves, toes in socks • may have difficulty with motor planning, including smooth coordination of desired gross or fine motor movements or of speech • may have difficulty with bilateral tasks such as using scissors, knife and fork	• consult with occupational therapist to identify sensory diet of calming, alerting, and desensitizing strategies • consult with physical education teacher for activities to improve strength, stamina, balance, coordination, motor planning, and awareness of body in space • ensure child is seated in desk with feet on floor or raised surface • experiment with seating child on gel cushion on desk or on therapy ball to provide movement while seated • let child use fidget object or teach him clench-and-release muscle exercises he can do while seated • experiment to see if active movement before sedentary activity improves child's tolerance and attention • use frequent activity breaks, even within classroom—doing chores, handing out materials, putting finished papers on teacher's desk one at a time, etc. • let child do some activities while standing • experiment with weighted cuffs or vests

COMMON DIFFICULTIES WITH SENSORY SYSTEMS	
VESTIBULAR and PROPRIOCEPTIVE 	
Hyper-Reactive Behaviours	**Strategies**
• over-reacts to or avoids movement activities • has difficulties navigating on different surfaces (carpets, tile, grass, etc.) • walks close to wall; clings to supports such as banisters • seems to be fearful when movement is expected; muscles seem tense; may lock joints • avoids or is poor at activities in which both feet aren't on the ground such as stairs, climbing ladders, jumping rope, escalators, bike-riding • has difficulty with activities involving linear movement such as swinging, bike-riding • avoids or is poor at activities which require running, changing direction or coordinating actions with other people, such as most sports • is afraid of heights, even small ones such as a curb • rigid about positioning of body, keeps head in same rigid angle • seems to become physically disoriented easily, avoids activities such as somersaults, leaning over sink or table, bending to pick up something from the floor or to tie shoes • may use too little pressure to pick up objects or hold materials, tie laces, print, hit computer keys • may have difficulty with motor planning, including smooth coordination of desired gross or fine motor movements or of speech • if muscle tone is low, leans on others for support as if they were furniture, "W-sits" on floor to stabilize, props head on hands at desk or table, flops rather than sits, always want to lean against wall if standing • may have difficulty with seated tasks requiring two hands because of need to support head and trunk with one hand • seems to tire easily when engaged in movement activities	• consult with occupational therapist to identify sensory diet of calming, alerting, and desensitizing strategies • sensitize everyone in student's environment to his over-sensitivity to touch • consult with physical education teacher for activities to improve strength, stamina, balance, coordination, motor planning, and awareness of body in space • help child to sit on floor with legs crossed rather than in W-sit, or use chair • experiment to see if active movement before sedentary activity improves child's tolerance and attention • use frequent activity breaks, even within classroom—doing chores, handing out materials, putting finished papers on teacher's desk one at a time, etc. • experiment with weighted cuffs or vests

COMMON DIFFICULTIES WITH SENSORY SYSTEMS	
TASTE 	
Hypo-Reactive Behaviours	**Strategies**
• eats a limited variety of foods • gags, refuses foods • difficulties with oral hygiene • spits out foods, medications • smell-defensive—will avoid places or people with strong odours, such as art or science rooms, lunchroom, residue from cleaning chemicals in classrooms • reacts to odours that other people don't notice (the smell of coffee on someone's breath) or odours that other people usually like (flowers, perfume, air freshener)	• consult with occupational therapist to identify ways to desensitize mouth area and improve function of teeth, gums, cheeks, and lips • collaborate with parents to develop ways to desensitize child to a wider variety of foods • collaborate with parents to develop ways to increase tolerance for tooth-brushing • provide nose plugs in classroom or lunch area to help child manage smells, or provide alternate eating area
Hyper-Reactive Behaviours	**Strategies**
• wants food constantly • licks objects or people in the environment • chews on or mouths objects inappropriately • high threshold for bad tastes, so doesn't avoid danger substances • has pica (mouths or eats non-food substances such as rocks or dirt) • sniffs objects and people in unusual ways or wants to stand close to others in order to smell them • does not seem to notice smells others notice	• ensure child has been assessed for related conditions • consult with occupational therapist to identify ways to desensitize mouth area and improve function of teeth, gums, cheeks, and lips and provide sensory diet of smelly materials • try to identify specific food or taste child craves and ensure it is in regular diet • teach rules about eating without permission, and/or teach recognition of hazard icons and/or keep all dangerous substances locked away

2. Anxiety

Parents and teachers of students with ASD frequently identify anxiety, and a student's ability to manage it appropriately, as a major challenge to attention, learning, and successful functioning in school and home. A student may show anxiety, for example, by shutting down and refusing to communicate or follow instructions, or by acting out aggressively.

Rief, S. "Relaxation, Guided Imagery and Visualization Techniques." *How to Reach and Teach ADD/ADHD Children*, 1993: 125-129.
(Sensory/Self-Regulation)

Direct observation of the student often provides clues to sources of anxiety and to behavioural or verbal cues that signal its effect on the student. When possible, asking the student to identify what makes him anxious can provide insights into the source of difficulty.

Sources of anxiety are highly individual and often unique to students with ASD. Some common causes include

- transitions and changes in routines or settings (expected or unexpected)
- environmental factors such as noise or movement
- inability to understand and meet social expectations
- fear of failure
- inability to meet academic expectations

To help young students manage anxiety using visual techniques, see

- Buron, K.D., and M. Curtis. *The Incredible Five-Point Scale: Assisting Students with Autism Spectrum Disorders in Understanding Social Interactions and Controlling Their Emotional Responses*, 2003.
(Sensory/Self-Regulation)

Ensure the availability of a trusted helper.

Ensure the student has a trusting, comfortable relationship with more than one person. If the student has a high social drive or is very dependent on adults, ensure that he has enough social interaction prior to starting a task, and has opportunities for successful social interactions with adults and with peers throughout the day.

Ensure the student has an appropriate communication system (gestural/visual/verbal) and knows how to use it.

Difficulty communicating may create anxiety. An appropriate AAC system will enable a student to communicate more effectively and with less stress.

Information from family and other caregivers, and direct observation and assessment by a speech-language pathologist, will provide the school team with information about a student's communication abilities and needs.

Everyone who interacts with the student needs to be aware of how the student understands best and expresses himself.

Assume that the student does not understand what is expected unless he has demonstrated understanding and capability.

It is easy to make assumptions, based on the student's age or skills in some areas, that he can do a particular task or understands social expectations. Students with ASD frequently have a very irregular profile of skills and function very differently on different days or in different situations. An academically competent student may struggle with a simple task such as responding appropriately to someone who greets him in the hallway, or with a more complex task such as locating an item in a store or starting a conversation with a peer.

Give clear, brief instructions using demonstrations or modeling whenever possible. Help the student understand the "why" of the situation, using social stories or role-playing when applicable.

Check comprehension of instructions or conversations.

Adults working with the student should develop strategies to check comprehension and help the student show, by paraphrasing or demonstrating, that he has understood. Peers can observe the adult's strategies and imitate them, and can learn to interpret the student's communications.

Seat the student next to someone who is a good "buddy" when appropriate. Teach the student how to communicate to this person when he needs help.

Ensure task expectations are appropriate.

Support the student to complete tasks and meet expectations at his ability level to give him a sense of accomplishment and confidence. Ensure that tasks have a clear beginning-middle-end and that reinforcers are clear and provided as frequently as necessary. Debrief after each success, review with the student what he did right, and praise perseverance and completion.

Help the student to set reasonable goals that he can meet, such as "copying three sentences that are dictated" or "getting 80% on the spelling pre-test." Ask the student to compare his performance to previous efforts rather than to the work of others.

Fact-based assignments are more likely to be successful than tasks that require creativity, imagination, or empathy. These are challenging areas for students with ASD who have difficulty understanding that others have different perspectives, motivations, and knowledge than they do.

If the student needs frequent breaks, adjust the length or difficulty of tasks so they can be completed in a manageable period. Ensure that the student returns to the task and is reinforced for completing it.

Use written and/or graphic cues to remind the student of tasks and expectations.

For line drawings of students and school situations that are adaptable to fit many students, see Street, A., and R. Cattoche. *Picture the Progress*, 1995. (Social Relationships)

Not knowing what to expect can be anxiety producing. Clear visual cues can provide a picture for the student. Use graphic or written cues to remind student of

- expectations (for example, how many times to write each spelling word)
- strategies to problem-solve (for example, raise hand for help, put head down on desk and cover ears when it is too noisy)
- strategies to communicate in problem situations (for example, "I don't understand, I can't do it, What do I do when I'm finished?")

Adjust activity levels to match student needs.

Be sensitive to the impact of tiredness, under-stimulation, low muscle tone, or too much sedentary time without breaks.

It may be necessary to have a calm, quiet area where the student with ASD can go to manage sensory or emotional overload. Relaxation for some students may mean engaging in repetitive behaviours that have a calming effect. Students who crave certain repetitive movement activities, such as rocking, spinning objects, or becoming immersed in activities of perseverative interest, can be provided with a time and space where this activity is permitted.

Students who crave active play and physical contact often profit from regular periods of exercise and gross motor activity several times daily. This can occur in the gym, in hallways as appropriate, in a vacant classroom, or on the playground. Activities can include hallway aerobics, step exercises, weights, practising skills with balls or ropes, etc.

Movement can be incorporated into the classroom by giving the student reasons to be out of his desk. Sensory experiences can be incorporated into regular learning activities as tasks (finding objects or word cards buried in containers of rice) or as reinforcers (access to vibrating toy, playdough).

Provide a structured, predictable environment.

For suggestions to manage typical sources of anxiety within a school day, see Moore, S.T. "Anxiety." *Asperger Syndrome and the Elementary School Experience*, 2002: 132-150. (AS)

The need for structure, routine, and predictability exists in all settings for a student with ASD. Strategies that are useful at school may also be useful in home and community settings. At the same time, a student needs to learn to be flexible and to tolerate small variations to the routine in order to become comfortable with the changes that are normal parts of everyday life.

Students with ASD can become dependent on a routine very easily and insist that an event that happened one way must always happen in exactly the same way. For example, a student may demand that the same activity be done every time he goes to gym, or may expect always to be the first to enter the classroom because he went first once. These subtle routines are often easy to overlook.

A student with ASD may also interpret one event as having caused another and expect the association to continue, such as expecting the fire alarm to ring when a substitute teacher is in class because that happened the last time there was a substitute teacher.

Unexpected changes in the environment may confuse a student with ASD. Prepare the student ahead of time for physical rearrangements in the classroom, and involve him in making the changes if possible.

Provide a customized visual daily schedule.

All planned activities can be charted in a visual form and posted at or near the student's desk, so that he can anticipate changes in activities and know what to expect. The schedule should be used consistently. Staff should direct the student's attention to the schedule by gesture when necessary and ensure that the student learns to use the schedule with increasing independence.

Please note: The purpose of visual supports is to increase the student's ability to function without continuous adult prompting. Visual supports provide the student with a prompt system that has the potential to allow him to function with as much independence from adults as possible. Adults must teach the student to use the visual support and then let the student use it.

Plan for transitions and learn to manage change.

Tools that can be used to prepare students for changes in activity or setting include

- visual schedules
- verbal reminders
- social stories

These tools help students to manage the stress of changes in schedule or of personnel, such as the computer class being unavailable or the presence of a substitute teacher.

Once a student has learned the daily routine or can follow a schedule, begin to introduce small changes regularly. Use the visual schedule plus other communication systems to warn of changes in activities or personnel, and give reasons. Reinforce the student for managing the changes.

Help the student to recognize and manage his own anxious or overstimulated state.

As a student with ASD develops more awareness and better communication skills, he can learn to recognize and take responsibility for managing his arousal level and feelings. Teach the student to name a feeling by identifying body language or facial expressions. Ask the student to name two or three of the feelings in his body, such as a hard feeling in the stomach or head.

To help young students manage anxiety using visual techniques, see Buron, K.D. *When My Autism Gets Too Big: A Relaxation Book for Children with Autism Spectrum Disorders*, 2003. (Sensory/Self-Regulation)

Help the student learn a few physical and verbal strategies to calm down. These can include, among others:

- taking a series of deep breaths, holding and releasing them
- counting slowly to a particular number
- visualizing something pleasant or visualizing the body returning to a calm state
- referring to picture/written cue cards to remind him what to do
- reading or repeating to himself a verbal script for calming or reassuring
- expressing feelings by drawing
- storing preoccupations on an imaginary computer disk and not thinking about them again until a specified time or until a certain task is completed

Cautela, J.R., and J. Groden. *Relaxation: A Comprehensive Manual for Adults, Children and Children with Special Needs*, 1978. (Sensory/Self-Regulation)

Additional strategies for managing sensory sensitivities may be found in the "Sensory Systems: Common Difficulties and Strategies" chart in Table 5.2.

Handle verbalized anxiety calmly and move on.

Students with ASD can be very preoccupied with repetitive worries about family issues ("What if my dad loses his job?") or environmental concerns triggered by television or newspaper coverage of hurricanes, floods, or other disasters. The student may have a poor sense of relative time or distance and may feel in personal jeopardy. He may find it difficult to focus on anything else and may try to talk about the preoccupations or repeatedly seek adult reassurance.

Try to avoid reinforcing the anxiety with too much reassurance or discussion, or letting the student use it as a way to avoid tasks. Provide a brief, matter-of-fact response and then move back to the task or change the subject.

Accept that the student may always show some level of anxiety.

Typically developing students differ in their tolerance for change and in their general level of anxiety. Students with ASD may be more prone to anxiety for many reasons, and some may always react with mild to severe anxiety about changes of personnel or settings or routine, no matter how carefully and systematically transitions have been planned. When appropriate, acknowledge that changes are sometimes difficult. Continue to look for strategies that support the student, and reinforce him when a situation is managed well.

3. Resistance and Anger Management

School is a stressful place for many students with ASD. The student may resist task expectations because he fears failure, can't express confusion, or because the emotional and intellectual effort doesn't seem worthwhile. What most typically developing students find motivating, such as socializing with friends, excelling at academics, or enjoying sports, may not motivate students with ASD.

For the student with ASD, attempts at social interaction may consistently meet with failure. Meeting academic expectations may be difficult and be a source of low self-esteem. Anger and resistance, like anxiety, may build over time and lead to withdrawal or outbursts. The strategies in the previous section for helping the student deal with anxiety may help with resistance and anger management. This section provides specific suggestions for dealing with resistance and anger.

See Appendix C for information about positive behaviour support for students with ASD.

Observe patterns of anger build-up and intervene as early as possible.

Brenda Smith Myles and Jack Southwick identify three stages of the rage cycle in *Asperger Syndrome and Difficult Moments*:

- rumbling
- rage
- recovery

They stress the importance of developing a proactive written plan for managing rage attacks so that all staff are aware of their roles and expectations.

- See Myles, B.S., and J. Southwick. *Asperger Syndrome and Difficult Moments*, 1999 for a much more detailed discussion of strategies for handling tantrums and meltdowns and a variety of useful forms for doing functional assessments of behaviours and settings, and a description of the Situation, Options, Consequences, Choices, Simulation, Strategies (SOCCSS) approach. (AS)
- Also see Janzen, J. "Evaluate and Refine to Support Effective Learning and Behavior." *Understanding the Nature of Autism,* 2003: 157-169 and 443-465, and "Assess and Plan Interventions for Severe Behaviour Problems." (Education)

Table 5.3: The Rage Cycle

Rumbling Stage	**Strategies**
Decrease in ability to process verbal language, increase in body tension, tapping fingers or clenching fists, argumentative or confrontational behaviour, verbal outbursts, name-calling, task refusal.	Know the signs. Try to intervene without becoming part of a power struggle. Point to visual cues to remind of schedule or reinforcers or to indicate choices when student needs break in task or change of setting. Encourage student to move to out-of-classroom setting before he or she loses control. Keep voice quiet and calm.
Rage Stage	**Strategies**
Student may bolt from area, shout, throw or rip materials, aggress verbally or may withdraw and shut down emotionally; student is out of his or her own or others' control.	Keep voice quiet and calm, or do not speak at all. As required, use physical intervention and get assistance to remove student from area, to protect other students, or to remove other students. Help student go to familiar, safe place to calm down. Learn by trial-and-error what helps student calm; this may include darkening the room, remaining silent or playing quiet music, letting student do a calming activity such as drawing, etc.
Recovery Stage	**Strategies**
Student may deny that the event occurred or be sad, apologetic, and/or physically exhausted.	When student is completely calm, use the social autopsy approach. Using a written format if possible, help student recall what occurred, what he or she wanted to happen, how he or she felt, how he or she thought others were affected, what to do next time, etc.

Adapted from *Asperger Syndrome and Difficult Moments: Practical Solutions for Tantrums, Rage, and Meltdowns* by Brenda Smith Myles and Jack Southwick.

<www.asperger.net>

Be prepared for difficult days.

A student may arrive at school resistant and angry because of events that happened at home or on the way to school. When this occurs, provide the student with his usual structure and routines but with reduced task difficulty and more frequent breaks (if necessary). Start the day with some time to calm down in a quiet space, and begin the day's routine when the student has settled sufficiently. This will allow the student an opportunity to maintain control of his behaviour and hopefully get through the day without a major incident.

Note aspects of tasks and activities that create frustration.

Resistance or anger in a student with ASD may occur during instruction for a number of reasons, including

- a cognitive disability
- difficulties with language comprehension and following instructions
- difficulties with language expression (such as asking for help)
- limitations in problem-solving skills
- an inability to compromise
- a tendency to be a perfectionist

When a student with ASD shows resistance or anger, it is necessary to determine whether task expectations are realistic (considering his individual profile). It may be necessary to adjust expectations, instructional strategies, and in some cases the educational setting, to bring them in line with the student's abilities.

Persevere with reasonable expectations for task completion.

The student with ASD needs to have many experiences with successful task completion in order to connect following directions with positive consequences and social feedback from others.

Adults in home, school, and community environments often inadvertently reinforce tantrum behaviours by removing a student from a particular setting or withdrawing task demands. A student with ASD learns patterns very quickly, and may learn to use tantrums or "meltdowns" as an easy and successful channel of communication.

Remember to reinforce efforts and improvements, however slight, on a frequent basis so that the balance of interaction between the student and adults is positive rather than negative. Model this for peers so that they learn to do it as well.

Help the student to cope.

Egocentricity, difficulty interpreting non-verbal communication, and poor understanding of social interaction often lead to confusion, hurt feelings, and anger for a student with ASD. A student may over-personalize situations and interpret rejection or anger from a peer when none was intended.

A student may become a target for ridicule or bullying by peers. Peers may do this subtly, such as using a word to which the student always

reacts negatively, or suggesting that a student do or say something which others know will get the student in trouble with someone else.

Classroom- and school-wide positive school climate programs should teach appropriate skills and make it clear that ridicule or bullying will not be tolerated.

Students who are able to recognize and manage their own anxiety can also be taught to recognize the beginnings of anger and to release it in appropriate ways. Strategies for anxiety may also work for anger and resistance.

- Duke, M.P., and S. Nowicki. *Helping the Child Who Doesn't Fit In*, 1992.
- Duke, M.P., S. Nowicki, and E. Martin. *Teaching Your Child the Language of Social Success*, 1996.

  (Social Relationships)
- Garrity, C., et al. *Bully-Proofing Your School*, 1998.

  (Education)

Build the student's self-esteem.

Identify a student's strengths and do everything possible to boost his self-esteem. Emphasize the student's abilities and accomplishments, rather than letting him dwell on comparisons with others.

- Find activities that the student does well and give him many chances to do them.
- Put the student in an "expert" role, such as using factual knowledge to be part of a small group making up Trivial Pursuit™-style questions on a classroom curricular unit, or presenting an interesting collection of facts to a class of younger children, or using artistic talent in various ways throughout the school.
- Allow an older student to be a helper in Kindergarten or Grade 1, using his strengths to interact with children or to help with classroom maintenance chores.
- Let the student assist with other tasks as appropriate, such as helping the librarian with seasonal displays or shelving books, helping the gym teacher set up and take down stations, helping the computer teacher with routine chores, or demonstrating tasks to younger children.
- Tell the student when he does anything well. Use an objective phrase such as "that went well" so that he learns not to take all successes and failures personally. Praise the student and specify what he did that went well. Teach the student some catch-phrases to use, and make a game of having him practise using the skill.
- Help the student to not expect perfection in everything. He could set different goals for different activities or subjects, such as "I'll try to get 80% on the pre-test" or "I'll aim for 75% on that test because it's my hardest subject" or "I'll try to get 10 problems done before recess and maybe if I'm really fast I can get 12 done."
- Help the student to set goals that are benchmarks toward a larger goal, so that he can learn to reach successes bit by bit rather than seeing only complete success or complete failure.

Provide opportunities for meaningful contact with peers who have appropriate social behaviour.

Most students without ASD are willing to come to school for a variety of social reasons, in addition to meeting parental expectations. Perhaps school is where they see their friends, socialize during class or recess, or perhaps they enjoy attention from the adults. Academic and other kinds of achievement often are esteem-building experiences as well.

These kinds of social reinforcers are less available to students with ASD, and accordingly it is important to build connections between them and their peers and to provide reasons for them to want to come to school. It will be necessary to teach appropriate social behaviours and to provide students with situation-specific expectations for behaviour.

Provide regular access to a supportive communication relationship.

High-functioning students with adequate verbal skills may benefit from being able to talk regularly to someone in the school environment who is not normally involved in instruction or behaviour management. This person could be a resource teacher, guidance counsellor, or psychologist. The time spent with this person might be used to summarize events of the day or to debrief after difficult situations.

4. Limited Problem-Solving and Independence

Students with ASD often experience difficulty with problem solving and functioning independently. Important skills in problem solving, such as the ability to interpret information, attend to important information and screen out distractions, plan, organize, and sequence events, are typically lacking in students with ASD. As a result, students with ASD may rely on adult assistance to solve problems and complete tasks.

These common skills are difficult for students with ASD, whether the problems are organizational, interpersonal, or academic.

Some students become skilled in using passive problem-solving styles and become reliant on adult assistance or attention. They may resist expectations that they learn and apply active problem-solving strategies or that they do any task with increased levels of independence.

Increased independence is an appropriate goal for all students. Educational planning for students with ASD should address problem-solving and increased independence.

This section provides strategies for developing problem-solving skills and independence.

Teach flexibility.

Introduce small changes to routine regularly, using appropriate visual/verbal strategies to warn the student of the upcoming changes. Acknowledge to the student that managing change is hard, and provide praise as necessary.

Model and acknowledge "making mistakes" or "changing your mind" in natural and structured situations. Have peers do this as well. This gives the student a chance to see other people coping rather than excelling, and demonstrates that mistakes can often be fixed.

Work into conversations casual references to weaknesses and imperfections, his own and others, in order to highlight that these are normal and acceptable parts of everyone's life.

In one-to-one sessions and in the classroom, brainstorm responses to difficult situations in the student's daily life. This will encourage the student to generate many possible solutions to a problem and help him to overcome rigidity and the belief that there is only one right way to do anything.

Problem-solve in natural settings.

To improve a student's problem-solving ability, adults need to avoid the temptation to prevent problems from developing. The process below outlines steps in a process to support a student to learn how to manage difficult situations. This process must be used cautiously; it is important to provide enough support to help the student learn without accidentally frustrating him.

- let natural problems develop
- let the student become aware of the problem and name it if possible
- let the student try a variety of strategies
- reinforce the student for every success, telling him what was done right
- if the student is unsuccessful, show him a strategy and prompt as necessary
- if the student is verbal, give him a simple script to use, such as "Put the key in, turn it all the way, push the door."
- encourage the student to echo and tally steps on fingers if possible, so that he learns to talk himself through the problem
- ensure the student has many opportunities to practise strategies in different settings

Model problem-solving and encourage peers to model.

Adults can model problem-solving in a calm and structured way throughout the day, and peers can be encouraged to do the same. It could become a class activity to find good problem-solving strategies in stories, videos, or class situations and to identify examples of good problem-solving and why it was successful.

Teach the student to use a graphic format as well as spoken words to problem-solve.

Teach the student to use a written problem-solving approach, rather than just talking the process through. As an alternative, have the student draw or cut out small pictures and physically manipulate them to express "what happened?" and "what can I do next time?"

Help the student follow routines more independently.

Adults working with students with ASD may unintentionally foster dependence by providing too many prompts, or by prompting too quickly. Teach the student to use a written problem-solving approach. If a student requires prompts to go through every step of a familiar routine, try

- using a visual or graphic script (such as a sequence of pictures for dressing or a written list of steps for an academic task), and teaching the child to use it
- waiting longer before prompting or reminding

Table 5.4: Levels of Independence

	School	Community
Independent	Student with motor skills adequate to push door approaches door, pushes it open, and goes through.	Student approaches clerk in a fast-food restaurant and responds to the natural prompt of "Can I take your order please?" by using a verbal or visual system to communicate wishes.
Verbal Prompt	Student does not respond to natural prompt. Adult says "Push the door."	Student does not respond to natural prompt. Adult says, "Tell her what you want."
Motor Prompt	Student does not respond to natural or verbal prompt. Adult gets student's attention and points to the door.	Student does not respond to natural or verbal prompt. Adult gets student's attention and points to clerk or points to or taps visual communication system.
Physical Prompt	Student does not respond to other prompts. Adult jogs the student's elbow, puts student's hand on door, or provides hand-over-hand support to push door open.	Student does not respond to other prompts. Adult jogs the student's elbow, puts student's hand on communication board, or provides hand-over-hand support to use AAC system.

See Table 4.2 for a more elaborate prompt hierarchy.

Determine the student's level of on-task behaviour and task completion, and reasons for difficulty.

There are many possible reasons for a student failing to comply with a task expectation or not remaining on task long enough. The task may be beyond the student's ability, or he may lack internal or external motivation to do it. He may not be able to screen distractions or may have learned that the best way to keep an adult engaged is to require constant prompting.

Ensure that adult attention and interaction remain available as the student improves in independence and on-task behaviour.

Students with ASD typically interact most successfully with adults, who can adjust their style of communication and interaction to the student's needs. Students may rely on this social interaction for pleasure and for reassurance and security.

A student who enjoys adult attention will not work toward increased independence or on-task behaviour if he learns that the consequence is reduced adult attention. It is important to ensure that the student learns, in small increments, that adult interaction can be contingent on accomplishing rather than on failing to accomplish.

5. Scattered Developmental Profile

As a group, students with ASD demonstrate a range in levels of intellectual development. A student with ASD may have a cognitive disability or normal intelligence. A cognitive disability, like ASD, may range from mild to severe and have a significant impact on a student's ability to learn.

As well, the developmental profile of a student with ASD will be uneven. One student may show an average level of intelligence but be significantly affected by abnormal responses to sensory stimuli, communication impairment, or anxiety. Another student may show deficits in some areas of development and strong skills in another.

Some students with ASD may appear to be more able than they are because they have good skills to decode written material, extremely strong rote memories, and sophisticated vocabularies or other areas of high function.

Appendix B contains suggestions related to needs of students with Asperger's Syndrome. Many are also applicable to students identified as "high functioning."

In Middle Years, as social and academic environments become more complex and abstract, students who succeeded academically in Early Years often begin to encounter difficulties with learning. This may be especially troubling for a student who sees being smart and doing well as an essential part of his identity, and confusing for teachers and parents who have not realized how much the child has relied on a good memory and excellent vocabulary to succeed.

Help students with ASD to understand and accept themselves and their differences.

For students able to comprehend verbal or written information, discuss with parents the process of explaining to their child the ways in which he is like many others and the ways in which he is different.

This is often done in a classroom or with the student individually in the context of discussing the idea of individual differences. The adult might note that everyone has some areas in which they naturally excel without having to try hard, such as being a good runner or a good speller. Everyone has some areas in which they can improve if they work hard at it, such as playing piano or skating. And everyone has some areas in which they will probably never excel, no matter how hard they try. Some students, for instance, have difficulty learning certain school subjects, or in saying what they are thinking, or in making friends. Emphasize that people usually value other people as friends or as part of their family not only because of what they can do but because of how they act toward other people, by listening, helping, being reliable, being considerate, etc.

In an individual session, explain to the child that he has a learning disability. Be clear that this learning problem makes things harder but not impossible, and that everyone will continue to help him. The label of Autism Spectrum Disorder can be introduced if the child indicates by questions that he is ready for additional information.

For a comprehensive approach to explaining ASD to more able students, see Faherty, C. *What Does It Mean to Me? A Workbook Explaining Life Lessons to the Child or Youth with High Functioning Autism or Asperger's Syndrome*, 2000.

(Explaining)

After consultation with the parents, the student's difficulties may be explained to his classmates. In some classrooms this discussion happens naturally year by year, in the context of a general unit on disabilities or differences, whether or not the classroom that year includes children with a particular disability.

Another approach is described by Carol Gray in *The Sixth Sense II* (2002.) It is designed for students aged 7-12 and is more comprehensive than its predecessor, originally published as part of *Taming the Recess Jungle* (1993).

Using this lesson plan, an adult discusses how our five senses work similarly for most but not for all of us, and then introduces the sixth or "social" sense. This sense lets some but not all of us understand social rules and how to send and receive social messages by means such as facial expression, body language and gesture, and tone of voice, without needing to be taught directly.

Activities in the lesson plan help students find ways to support a classmate with an impairment in vision or in hearing, and then expand to help them think of ways to support a classmate whose sixth or "social" sense doesn't work well.

Ensure that the IEP reflects the student profile.

It is tempting to assume that a student who demonstrates strengths in one area can achieve equally well in all areas if he tries hard and is constantly challenged. It is equally tempting to prioritize meeting curricular objectives to the exclusion of setting goals in areas of communication and social skills.

IEP outcomes should recognize the child's individual profile of strengths and weaknesses, learning style, and need to master skills for communication, interaction, and academic learning.

For many practical, class-based suggestions, see

- Moore, S.T. *Asperger Syndrome and the Elementary School Experience*, 2002: 47-92 and 93-130.
- Myles, B.S., and R. Simpson. "Teaching Academic Content to Students with Asperger Syndrome." *Asperger Syndrome: A Guide for Educators and Parents*, 1998: 43-68. (AS)
- Janzen, J. "Concepts, Rules and Academic Skills." *Understanding the Nature of Autism*, 2003: 313-340. (Education)

Help the student learn to use rote memory more efficiently.

Rote memory is often a strength for students with ASD. It is often helpful to teach the student how to use this strength effectively and efficiently.

- In a small group and in one-to-one or casual situations, help the student to repeat back, perhaps by tallying on his fingers, the key points of what the adult has said or what the instructions were. When the student can do this aloud, help him to do it silently or by whispering. Reward success with praise and concrete rewards, points, or whatever motivates the student.
- In a small group and then in a classroom setting, help the student learn to write down key words or main points of verbal instructions and information.
- Help the student learn to store facts under different headings by memory or in writing (for example, under a character's name, under a job title, or other identification) so that the student becomes more comfortable with different but equally correct ways to remember.

Emphasize comprehension over rote memory.

Rote memory is a typical area of strength for a student with ASD. Comprehension of the memorized material, however, may be lacking. Many students with ASD are able to read text, but may understand little of what they have read.

It is important to build reading comprehension by emphasizing meaning along with saying the words. Before reading begins:

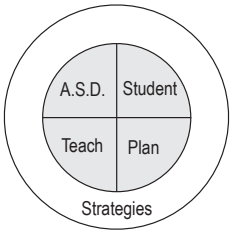
- attempt to connect the material with the student's knowledge or previous experiences
- talk about illustrations in the book
- provide a brief overview of the material
- ask questions that involve drawing conclusions and making predictions

- **Please note:** Don't assume the student understands key words or concepts or is able to transfer something learned from one setting to another. It may be necessary to pre-teach key words.

After the student has read the material, encourage him (according to age, level, and ability) to summarize main ideas, describe the setting, the characters and their action, etc.

Strategies to develop comprehension can include

- reading independently to identify any words with an unclear meaning, and asking for an explanation
- locating specific information within a few pages, gradually increasing the number of pages and decreasing the picture cues
- going back over a story the student has read to locate answers to questions such as "who said?" and numbering events in sequence
- restating the main idea of a paragraph, section, or chapter
- using newspapers, TV guides, directions on packages, restaurant menus, ads and flyers, and instructions for construction activities such as models
- teaching where to look on a worksheet or test for instructions, rather than assuming the student understands what to do from the appearance of the problem or question
- teaching the student to use visual supports, including written timetables on the board, an individual schedule on his desk, steps for a task itemized in point form, colour coding for mandatory vs. choice tasks, a written journal of events of the day to take home, and graphic organizers to help the student retain and organize information
- encouraging students with ASD to use questions to ask about word meanings and other aspects of what they read and hear, even if you need to write the questions and let them read them
- teaching students with ASD how to get an adult's attention, to ask for help, and to show or explain what they don't understand
- using hands-on experiential learning (when possible) to help the student understand the meaning of new words and experiences and to see pieces of new information fit together



At this stage, the team is ready to

- ❑ select appropriate instructional strategies
- ❑ incorporate knowledge about ASD and the student's profile into implementation
- ❑ adjust strategies according to student progress