In the current education system it is desirable for all students to participate in the regular instructional program as much as possible. This is true for students who are disabled as well as those who are not. Intended outcomes from this participation are a sense of belonging and the development of meaningful relationships with peers and significant adults. Students with autism share the desire to be a part of regular school life and, with carefully planned support, find this attainable.

In addition to social experiences, participation in educational instruction designed for typical middle or high school students is possible for the student with autism when appropriate modifications are used. Without support the student with autism is not able to gain as much from the instruction as teachers or parents desire. An element of educating students with autism that is challenging is the appearance of mastery or success without the ability to make practical application of information. The long-term outcome for students when instruction is not adapted for their learning style is a lack of ability to apply information to achieve competence or independence in their lives. The students continue to lack real skills to hold a job or take care of basic living problems.

This chapter will discuss the characteristics and learning style associated with autism as they apply to educating higher functioning students with autism. It will also develop methods by which individual students may be assessed to understand the impact of autism on their ability to benefit from instruction. Finally, the chapter lists modifications, adaptations, and interventions that are appropriate for the student with autism as support in an education setting.

COGNITIVE CHARACTERISTICS IN AUTISM

Problems in the instructional process originate with the impact that autism has on learning. The teacher or parent will desire to understand this impact in order to make decisions about the support and assistance a student needs. Understanding begins with a look at the core attribute common to all persons with autism. Frith describes this attribute as “the inability to draw together information so as to derive coherent and meaningful ideas. There is a fault in the predisposition of the mind to make sense of the world” (Frith, 1989, pp. 186–187). The effect of this information processing problem results in the unique characteristics associated with autism.

The particular characteristics that impact cognitive functioning are central to the learning style employed by students with autism. The cognitive characteristics typical in autism are caused by problems with information processing. How the brain takes in, stores, and uses information is different from the norm. Information becomes confused and segregated in the brain. It is a problem of seeing the world from unusual perspectives. The cognitive characteristics are present to some degree in all
persons with autism, but the severity and impact of the characteristics on the learning process will vary with the individual (Frith, 1989).

**Cause-and-Effect Relationships**

Difficulty understanding cause-and-effect relationships is one of the cognitive deficits. For the student with autism, an event is not necessarily associated with the effect it causes. Similarly, a sequence of events may not seem related to each other. Events may be perceived as distinct and separate from each other. As a result, inferences and conclusions are difficult or impossible to draw (Frith, 1989).

**Focus on Details**

Another cognitive characteristic is a tendency to focus on irrelevant or insignificant details and miss the central meaning in a situation. At times the persons with autism may focus on a narrow interest of their own to the exclusion of almost everything else. At other times they may select erroneous information as significant or experience faulty interpretation.

Certain environmental events can be sufficiently distracting to make it difficult to focus on what is important. A great deal of noise or certain types of noise can be difficult for some students. Other students may be disrupted by students moving around during class as well as windows or other visual information on the walls. Most students with autism are distracted by something, and this may vary considerably from student to student (Mesibov, 1990–91).

**Sequencing**

Students with autism do not sequence and organize in the same manner as students without autism (Mesibov, 1990–91). One common form of compensation is for information to be stored in memory in a rote manner. Retrieving information or "breaking into" the sequence in the middle can be very difficult at times. An example concerning Temple Grandin, the noted author with autism described in earlier chapters, is an inability to give directions unless she can start from the beginning with no interruptions. If the listener asks a question or interrupts, she must start over from the beginning (Sacks, 1993/1994).

The sequencing problem has many other results. The ability to put events or information together logically is impaired. The ability to organize oneself is limited. The student may need frequent assistance in knowing where to start a task or when it is finished (Janzen, 1992b).

**Understanding of Time**

Concepts of time are abstract and difficult to understand for the student with autism. Most people perceive the passage of time through a complex system of internal and external signals. For the person with autism, there is an inadequate ability to comprehend the signals that determine the passage of time without the aid of specifics such as a watch. The result is an overfocus on watches or schedules. Often the high functioning student with autism is the first one in kindergarten to have mastered time telling. The overfocus also shows up in asking many repetitive time or schedule-related questions throughout the day (Janzen, 1989).

It is important to allow the student access to a schedule at all times. Many teachers and parents often feel their students with autism have an excellent ability to remember their schedules because of the ability to recite it. Extreme caution on the part of teachers and parents will help the comfort of the students in this area, however. Students with autism work very hard to compensate for the deficits they experience in this area and need written and visual supports on an ongoing basis throughout their lives.
Compulsiveness

Compulsions and obsessions are traits of autism that are often noted by teachers and particularly parents. At times compulsive routines are difficult to manage or interrupt. Often there is a compulsive perfectionism and a strong sense of right and wrong. This may produce intense feelings if things are done incorrectly and ongoing fear that this will happen. A result may be a reluctance to try new things. At times this can take the form of acting out or resistance. A complication to this problem arises when persons with autism do not ask for help sufficiently well to let you know they are having a problem (Janzen, 1992a).

Distractibility

Distractibility is a major problem over which students with autism have little control. Environmental distractions such as extraneous noises are difficult. Screening out information that is not needed often has to be a conscious process and even then may not achieve the desired results. An example again comes from Temple Grandin, who describes an inability to use a telephone in an airport because attempts to shut out the background noise also cut out the sounds coming through the telephone (Grandin, 1988).

Cognitive distractibility can be a problem for higher functioning students with autism as well. This process occurs when thoughts that most people can lay aside become a focus when trying to do other things. This can occur easily if there has been an incident that is stressful or upsetting to the individuals. They will find it difficult to stop thinking about it until they experience some type of closure first.

Confusion

The overall result of the cognitive characteristics of autism is tremendous confusion. This confusion is often masked by overall anxiety and stress. Stress can be expressed in typical ways such as general nervousness. However, increases in stress are often expressed and shown in unusual ways such as the behaviors typically identified with autism. As a result, this anxiety is often not easily recognized as a stress response. Stress responses can take the form of stereotypical behaviors, repetitive questioning, acting out, withdrawal, or acting silly. One response to confusion commonly seen is “getting stuck”—a task or routine is not started or may be stopped before it is completed.

LEARNING STYLE ASSOCIATED WITH AUTISM

The learning style of a student with autism is a product of the cognitive characteristics. Learning style traits may be thought of as symptoms of autism but are not the core underlying problem. Because the learning style traits are symptoms, it is helpful for the teacher or parent to remember the cause of that symptom. Assistance or intervention for the student when the teacher or parent responds to the underlying, core processing problem rather than just the symptoms achieves more success. With autism the understanding of “why” is as important to effective teaching as the “how.”

Learning Rate and Ability

An ability to learn quickly is a trait common to persons with autism. Rote, factual, and favorite topic information can be learned very fast. Once learned, however, information can be difficult to change.

Another learning trait is an inability to draw from incidental or inferential teaching in which self-discovery is the method used (Janzen, 1988). Learning in a self-discovery approach is only possible if the materials and experiences are enhanced and modified with explanations, visual structure, and visual information.

Students with autism generally learn best when using a visual mode to input information. Their memory for visual detail is usually quite good. In contrast, auditory memory is faulty and
unreliable if the student must receive information just by listening (Janzen, 1986).

Language and Concepts

Language comprehension is a pervasive problem in students with autism, and it influences all learning. Abstract concepts usually need to be taught and are sometimes hard for the student to grasp (Frith, 1991). There is a tendency to not listen to directions carefully unless taught to do so. In addition, students often respond to verbal directions or information slowly and need a longer time to process and respond to what is said. There is often a need to repeat information out loud. This can be confused with echolalia at times, but it actually serves the purpose of allowing the student to rehearse information. This technique is most often used if it is new information or if the student is relearning a task in a new way.

Expression with language is also difficult. For example, it is not easy to tell others what they are doing, are supposed to be doing, or have done in a clear manner. This can be confusing to the teacher or parent because the student may appear to be verbal or in fact talk constantly. The deficit for the higher functioning students with autism is not the ability to talk but the ability to generate the important tools of communication to achieve effective interactions with others.

Impulse Control

Students with autism may have problems controlling impulses to do or say things at inappropriate times. The result in a classroom situation is that they speak out or move around more often than peers. They may also appear to have frequent outbursts that have an impulsive quality. In these situations what is actually occurring for the students is an inability to express frustration until they reach their limit of tolerance and have an outburst. This can make it appear that the outburst happens suddenly or quickly while it actually has been building for some time. This problem is compounded by an inability to ask for help efficiently.

THE SIGNIFICANCE OF UNDERSTANDING THE CHARACTERISTICS OF AUTISM

Often teachers, parents, and others misinterpret the behavior of students with autism. The examples in Table 3.1 show how the behavior of a student may actually be a characteristic associated with autism even though it resembles behavior typically viewed as adolescent. For example, from time to time all high school teachers experience disinterest, disruptions, or defiance in their students. It can be easy to interpret the behavior of the student with autism from this frame of reference as well.

ASSESSMENT

Assessment is a key element in beginning effective instruction for students with autism (Mesibov, 1990–91). Assessment can occur on an informal or a formal basis. The questions that follow have been derived from lectures, training, and articles by Gary Mesibov and others at Division TEACCH in Chapel Hill, North Carolina. They are important to consider in all assessment activities. From this information will be determined what type and the extent of support a student will need for instruction and smooth functioning.

Learning Style and Impact of Autism

1. What are the strengths, weaknesses, and emerging skills of the student?
2. What are particular areas of interest or talent?
<table>
<thead>
<tr>
<th>Student action</th>
<th>Teacher thinks the student</th>
<th>What is actually happening</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inattentiveness.</td>
<td>is daydreaming.</td>
<td>Student does not understand what to do and/or where to start.</td>
</tr>
<tr>
<td>Keeps asking the same question over and over.</td>
<td>is using attention-getting behavior.</td>
<td>Student is having difficulty understanding and may be confused.</td>
</tr>
<tr>
<td>Speaks out in class.</td>
<td>is using attention-getting behavior.</td>
<td>Student may not know which questions are meant for him or her or that other people may want to say something.</td>
</tr>
<tr>
<td>Calls others inappropriate names.</td>
<td>does not like contact with other students.</td>
<td>Student feels threatened from teasing or some other source of discomfort.</td>
</tr>
<tr>
<td>Never turns in homework.</td>
<td>will not do assigned work; is poorly motivated or stubborn.</td>
<td>Student does not know where to turn work in (so it never leaves the notebook).</td>
</tr>
</tbody>
</table>

3. Does the student understand cause-and-effect relationships (and first/then, work/break, safety, social correctness, etc.)?

4. What distractions are the most challenging to the student?

5. Does the student know when a task is finished without being told by others?

6. What does the student remember easily? What is difficult to remember?

7. How does the student like to know what is coming next?

8. Does the student adapt to new situations easily?

9. How does the student respond when he or she is wrong or needs to be corrected?

10. What does the student do when confused or anxious?

**Approach to Tasks**

1. How does the student start? Is there a pattern to the student’s way of initiating a task?

2. How does the student process information (visual, auditory, kinesthetic)? How can you tell?

3. Does the student repeat directions out loud? If given written directions will the student use them effectively in the task?

4. Does the student wait and attend to directions or immediately start on a task without directions? Conversely, does the student seem to be too dependent on directions to start a task?

5. Does the student change his or her approach to a task if the task changes or needs modifications? How? Does the student often revert to the former answer even if it is no longer valid for the task?
6. Does the student need a model or example of the task to look at to fully understand what he or she is doing and to increase competency?

7. Does the student work through a task or project with only one direction, or is a series of directions needed to keep the student going? Is the student's work smoother if the directions are in a visual form?

8. Does the student ask for help or know when he or she has a problem? How does the student express this?

9. What nonverbal signs are present when the student is having a difficult time or need help?

10. Is the student able to tell when he or she made a mistake and correct the errors independently? Does the student experience a great deal of frustration if he or she makes a mistake or is asked to correct the work?

FUNCTIONAL ACADEMIC SKILLS

Functional academics should be included in educational programs for a student with autism. An assessment of daily living skills may be conducted for educational planning as well as determining long-term support needs. Many assessment tools are available from commercial publishers. One assessment that is very comprehensive is the “Home Life Checklist” by Nancy Dalrymple (1987), from the Indiana Resource Center in Bloomington, Indiana.

Daily living skill assessments should include all factors for independent living, such as safety with medications, ability to take care of health needs (including visiting a doctor independently), and ability with money. Listed in Table 3.2 are other areas of functional skills that should be considered for students with autism that may not be found on standard assessments.

**TABLE 3.2. Functional Skills**

<table>
<thead>
<tr>
<th>SKILL AREA</th>
<th>EXAMPLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading</td>
<td></td>
</tr>
<tr>
<td>Understanding the purpose of and ability to use:</td>
<td></td>
</tr>
<tr>
<td>• newspapers</td>
<td>Discriminating valid from junk mail, such as credit card applications, contests, and others with misleading ads so as to respond appropriately</td>
</tr>
<tr>
<td>• community bulletins</td>
<td></td>
</tr>
<tr>
<td>• community posters</td>
<td></td>
</tr>
<tr>
<td>• menus</td>
<td></td>
</tr>
<tr>
<td>• bus schedules</td>
<td></td>
</tr>
<tr>
<td>• city maps</td>
<td></td>
</tr>
<tr>
<td>• TV guides</td>
<td></td>
</tr>
<tr>
<td>• phone book</td>
<td></td>
</tr>
<tr>
<td>Directions for games or electronic equipment</td>
<td>Interest stories</td>
</tr>
<tr>
<td>Directions for model kit assembly</td>
<td>Comic books</td>
</tr>
<tr>
<td>Reference materials and resources</td>
<td>Magazines</td>
</tr>
</tbody>
</table>

(continues)
### TABLE 3.2. Continued

<table>
<thead>
<tr>
<th>SKILL AREA</th>
<th>EXAMPLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional geography</td>
<td>Work-related information such as company policies or rules</td>
</tr>
<tr>
<td><strong>Personal Management</strong></td>
<td></td>
</tr>
<tr>
<td>Following recipes</td>
<td>Following survival signs</td>
</tr>
<tr>
<td>Reading directions on labels</td>
<td>Planning balanced meals</td>
</tr>
<tr>
<td>Properly administering medication—over-the-</td>
<td>Following directions on home appliances such as microwaves, dishwashers, washers, dryers</td>
</tr>
<tr>
<td>counter and prescription</td>
<td></td>
</tr>
<tr>
<td><strong>Computers</strong></td>
<td></td>
</tr>
<tr>
<td>Playing games</td>
<td>Budgeting and banking</td>
</tr>
<tr>
<td>Reading directions to access programs</td>
<td>Word processing</td>
</tr>
<tr>
<td>Uses of Internet</td>
<td>Electronic mail</td>
</tr>
<tr>
<td><strong>Writing</strong></td>
<td></td>
</tr>
<tr>
<td>Personal letters</td>
<td>Job application</td>
</tr>
<tr>
<td>Personal schedule and “To Do” list</td>
<td>Research papers: application and synthesis of materials</td>
</tr>
<tr>
<td>Daily diary or journal</td>
<td>Taking messages for others</td>
</tr>
<tr>
<td>Address and phone book</td>
<td>Taking notes for own use</td>
</tr>
<tr>
<td><strong>Math</strong></td>
<td></td>
</tr>
<tr>
<td>Budgeting</td>
<td>Functional use of money</td>
</tr>
<tr>
<td>Measurements</td>
<td>Fractions for everyday use</td>
</tr>
<tr>
<td>Time and calendars</td>
<td>Calculator use</td>
</tr>
</tbody>
</table>

### ASSISTANCE

There are two levels of assistance in the education of students with disabilities:

- **Level 1:** *Modifications and adaptations* are the easiest and least intrusive methods of assistance.
- **Level 2:** *Intervention and direct assistance* require more direct help from an instructor and may require more time.

For the student with autism, ongoing methods of assistance and help from both levels allow compensation for the impact of autism on the educational process. It is vital to the success of the student that these are ongoing and available throughout the day. The strategies developed for assistance should not be removed even if the student appears to be proficient in that area. They are usually experiencing success because of the modification, and without it their learning and independence will be diminished.
Another aspect of support that is very important to independence is the manner in which support is provided. Support should be independent of an instructor’s verbal and physical presence. It should instead be incorporated into the environment and teaching methods or materials. Several methods of support that are provided in this way are shown in Table 3.3 for both Level 1 and Level 2.

**Modifications and Adaptations**

Most modifications and adaptations occur as a part of the regular instruction or student management process. They are added to the usual routine as a support, much as a person with a broken leg uses crutches to walk independent of assistance from others. At times more assistance is required, but careful assessment of the circumstances and student needs will determine the amount, duration, and type. The modifications and adaptations listed here will provide support for the student with autism. This list could be much longer, and many variations are possible. This is an area where assessment, intuition, and teamwork are vital for developing the best possible strategies for each unique individual. The goal of assistance is always to allow the student to be as independent from direct adult supervision and ongoing direction as possible.

**Time Management and Schedules.** One area of support that is vital to the success of the student with autism that is not addressed in this chapter is time management and scheduling. These issues are addressed in Chapter 4, which is an important companion to the information in this chapter. Time management strategies and personal schedules are always necessary for the student with autism.

<table>
<thead>
<tr>
<th>Student Need</th>
<th>Level 1: Modifications and Adaptations</th>
<th>Level 2: Intervention and Direct Assistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Following directions</td>
<td>Visual instructions</td>
<td>Visual notes</td>
</tr>
<tr>
<td>Language comprehension</td>
<td>Semantic organizers or visuals for key points</td>
<td>Concept and vocabulary development</td>
</tr>
<tr>
<td>Assignments</td>
<td>Reduced workload and clear directions</td>
<td>Pass/no pass or teacher/student conferences</td>
</tr>
<tr>
<td>Involvement in class groups</td>
<td>Small-group goals and pregrou work</td>
<td>Concept development</td>
</tr>
<tr>
<td>Grades</td>
<td>Goal grading, extra credit, prearrangements, advance warnings</td>
<td>Outline development</td>
</tr>
<tr>
<td>Homework</td>
<td>Complete instructions and parent involvement</td>
<td></td>
</tr>
<tr>
<td>Essay work</td>
<td>Specific directions</td>
<td></td>
</tr>
<tr>
<td>Tests and exams</td>
<td>Oral or written tests, distraction-free environments</td>
<td></td>
</tr>
<tr>
<td>Class discussions</td>
<td>Redirections</td>
<td></td>
</tr>
<tr>
<td>Stress</td>
<td>Breaks and stress-reduction plans</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
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</tbody>
</table>
Following Directions: Visual Instructions. Provide visual information about tasks and projects in order to increase the student’s understanding and efficiency in following directions. Words, photographs, pictographs (simple line drawings), or combinations of these may be used to supply the visual information.

Instructions should include the entire task, activity, or sequence of activities (see the example in Figure 3.1). A series of directions or steps to complete the task should provide the most comprehensive details. Information about the finished product should be included (Janzen, 1989).

Other components of instructions include

- how much work they are to do.
- where to begin.
- what to do and in what order.
- when it is finished.
- what the finished product looks like.
- what to do next.

This information must be presented in an organized, visual manner understandable to the student.

Language Comprehension. To take advantage of the visual strengths of students with autism, all class lectures, directions, and explanations should be represented visually as well as verbally. Information that must be used or remembered only from hearing it is generally unreliable and misinterpreted more often than if the visual channel is also used. Some traditional methods of assistance such as reading along in a text is often not the type of visual help needed because of possible reading comprehension and vocabulary problems. Other visual supports are often needed to provide a clear, meaningful picture to the student.

Semantic Organizers. A method of visually representing material is semantic organizers or story maps, topic mapping, or webbing. In this method the main points of the information are arranged in a logical manner or sequence and connected by lines to help show their relationships to each other. These can be drawn ahead of time, and the teacher can use a visual point to keep track on the topic map as he or she talks. A more effective use of the semantic organizer is to draw it as the material is being presented (Peflessen, 1989). An example of a semantic organizer is shown in Figure 3.2.

Group Work in Health Class

1. Write a 3-page paper with 3 other kids in class.
2. Ms. Smith will tell you whom you will work with.
3. Your group will:
   - decide what your paper will be about.
   - meet for 30 minutes each day this week from 10:15 to 10:45.
   - write the paper on Friday and turn it in to the basket on my desk.
4. Check your goal card each day before you start.

FIGURE 3.1. Instructions should include the entire task or activity.
Key Phrases or Main Points. Another strategy of visual assistance is to write out key words or phrases as a discussion or lecture takes place. This can be done with the entire class during regular instruction. An added benefit in the instructional process is found in increased attending by all students who are visual learners.

The key phrase strategy is also useful for another purpose for students with autism. Used in an individual manner, writing out a key word or phrase is helpful if the students are “stuck” due to frustration or confusion. They can be helped over the hurdle they are experiencing by giving them the essential information of what they are to do at that moment. A two- or three-word written direction at a time like this is highly effective. The “trick” to this strategy is identifying what or why the students are having a problem. The visual information given must be short, specific to the problem they are having, and written in a positive form.

Assignment Modifications: Reduced Work and Clear Directions. Because of the learning style of the student with autism, regular coursework assignments may require modification. Many students have difficulty completing assignments. The most common modification to help solve this problem is to require less work. Some types of coursework assume that students will need repetitive practice to learn and master a skill. The fast learning rate of students with autism allows them to master and retain a skill without this repetition. This is a good opportunity to reduce the amount of work required. At the same time the instructor can allow for possible writing problems many students with autism have.

In determining how much to modify the regular assignment, many factors should be taken into consideration. Areas to consider are students’ writing ability, personal stamina, type of task and difficulty level for those students, knowledge of how fast the students learn, how they learn, what motivates the students, and how much work of that type they can do at one sitting and/or on their own. Take these factors into consideration and then test your assessment through careful observation of the students completing that work with the modification in place. If the students are able to
successfully complete the work on their own, the optimum level has probably been reached. Be very cautious about giving more work the next time. For long-term support, assignment modifications that require less work will probably be a common practice rather than an occasional procedure.

When giving assignments always make the finished aspect of the task or project very clear. For effective time management teachers or parents should be able to match the amount of work to the time available based on their knowledge of the students. Modify the amount of work required so the students are able to complete it in the time allowed. Let the students know what to do with any finished products very specifically. Make sure they know when, how, and where to turn in assignments. Do not assume even the simplest thing. Students have been known to have their notebooks full of finished homework but never ask where they are supposed to turn it in.

Involvement in Class Groups: Small-Group Goals and Pregroup Work. In class settings the teacher may ask students to be involved in a variety of class groupings, from one large group to several small groups. Different types of support may be needed by students with autism when they are in various types of groups.

When the work is in small groups to complete tasks or projects, students with autism will be able to increase their contributions to the group if their roles are very clear to them. The teacher may give them a few specific goals (including a social goal) to meet during that group session. Put the goals in writing and give immediate feedback when the session is over about the success in meeting the goals. In small-group settings it can be very difficult for students with autism to contribute academic information and socially interact at the same time. To increase the amount of meaningful involvement, academic contributions can be developed prior to the group session so that the students already know what they will contribute and thus be able to concentrate on the social aspect. Figure 3.3 shows an example of written goals for a student while in a group that is developing a class presentation.

Modified Grading. Students with autism often have a difficult time with the concepts of grades. They may become overly anxious about their grades to the point that it affects their overall behavior. One student with autism became so upset because he was not achieving straight A's that he would not go to school. Other responses to grades may be total lack of understanding or general apathy. In both cases of over or under concern, the grades are essentially meaningless. Modifying the grading system can solve many problems and increase motivation and productivity in some situations.

Goal Grading. This strategy determines grades on the progress toward predetermined goals. The goals must be arrived at by the student, teacher, and parent to make sense to the

1. Tell your 3 ideas.
2. Say one thing about each idea.
3. Let the other group members talk about your idea.
4. Talk to everyone in the group at least one time. Remember to look at them.
5. It's OK if the group does not want to use your ideas.

**FIGURE 3.3.** A 3”×5” goal card for the student to keep during group work.
student. They should be written down and reviewed with the student on a regular basis. A goal for English may be to write two essays of three pages each on selected topics. A goal for math may be to complete two pages a week in the math book and one page a week in a menu math workbook. The goals should be very specific and work oriented. If social- or work-related goals are to be included, they should be specific also. An example of a work-related goal may be to take notes during lectures using an outline worksheet or to check in with the teacher before class begins each day (Murphy, Meyers, Olesen, McLean, & Custer, 1988).

**Extra Credit Opportunities.** Opportunities are presented to students as an integral part of the program. These opportunities can draw on the individual students’ strengths or particular areas of interest by allowing them to turn in work that uses those topics as a focus. For example, a student who has an intense interest in how money is coined and in metals may be able to write essays about this process as extra credit in English. Or the student may be able to write a letter to other coin collectors asking them for information for credit in writing or reading. In math, the student may be able to work out problems based on the chemical makeup of coins and the various proportions used. These assignments may also be used as substitution for other work that is difficult for the student (Murphy et al., 1988).

**Prearrangements.** Agreements as to the amount of work to be completed during each grading period can be effective for some students. The student and teacher agree, “If you do this much you get an A; for this much you can earn a B; and for this much you can earn a C.” The agreement should be very specific. Parent involvement when forming these agreements is important (Murphy et al., 1988).

**Advance Warning Systems.** This system can be effective for students working within the usual grading systems. In this method two weeks before report cards are to be sent home, the student is given a facsimile report card with the grade entered. If the student would like to improve the grade in the two weeks remaining, then alternatives or ways to bring the grade up to the desired level are arrived at by the teacher and student. This system must be made concrete for the student to be effective. Specific timelines for activities with frequent progress checks by the teacher and parents will be needed for success (Murphy et al., 1988).

**Homework: Complete Instructions and Parent Involvement.** Parents are a great asset to the educational team of a student with autism. Parents are generally very involved with their child and are committed to providing support to the school. In trying to provide support, one area that parents will often express frustration in is homework. Due to the communication difficulties of the student with autism, parents often do not have enough information to assist in homework effectively. To increase success with homework, the school staff may give complete directions directly to the parent. Make sure that parents can tell what the assignment is without having been in the class. Ask yourself, “If I had not been there, would I understand the directions for this assignment?” A general rule of thumb to consider for students with autism is to not rely on them to relay information home. It is not a matter of lack of responsibility but their problems with language and understanding that cause the information to get entirely forgotten or so distorted that the parents cannot get the message clearly (Moreno, 1991).

**Essay Work: Specific Directions.** Essay material assignments are often vague to students with autism because they are generally unaware of how much they are to write or whether they are really answering the question, part of the question, or their distorted understanding of the question. The language difficulties of autism become a major problem in these situations (Moreno, 1991). Giving clear written directions about how much to write, what to write, and how to know when they are finished will help clear up some of the
confusion. Checking in with the students early in the work to provide feedback will help also.

Tests and Exams: Oral or Written Tests and Distraction-Free Environments. Test taking can be extremely stressful for students with autism. The problem of slow processing as well as the need to be perfect combine to make these situations often intolerable. Tests can be modified by using both an oral and a written version, changing the place to take tests, using a take-home test, or allowing other means to show that the material is learned and understood (Murphy et al., 1988). Give students ample opportunity to ask questions so that the teacher can be aware of how well the students are understanding what is being asked of them. It is easy to tell how well the students understand the test questions by whether their questions make sense to the teacher. At times a very small clarification can make a major difference to students with autism. They may be misunderstanding only one word in the question, but that is causing them to be unable to comprehend the entire question. By clarifying the one word, the teacher can enable the students to proceed independently.

An ongoing problem for students with autism is being able to ask for help when they need it. While taking tests or exams this problem may be worse because of stress the student may feel in the test-taking situation. A card with useful reminders can be a quick and easy strategy of assistance to the student (see Figure 3.4).

Class Discussions: Redirects. During discussion in large group settings, students with autism may be operating from an entirely different perspective than that of typical students. They may have a different perspective on why they are there, what is expected of them, or what the topic is. As a result, students may at times offer information that is on another topic than the one under discussion. These situations can easily appear humorous or bizarre to classmates. How the teacher responds to these comments will have a direct impact on the social success of the students with autism. If all students are treated with respect and care, the other students in class will often model the teacher’s behavior toward the students with autism.

A few simple strategies can redirect students with autism back to the topic under discussion. When off-topic comments are made, relate them back to the body of the material with as logical a link-up as you can make. If the comment is so off topic that it is not possible to link it up, say, “Thank you, now can you tell me one thing about [topic under discussion]?” Avoid questions during discussion; use a “tell me” approach instead. In a “tell me” approach the teacher starts with “tell me about” and then leads into the topic or question. More information can be gained from students with autism through this approach than through usual questions. Always take any communication from students with autism seriously, and never laugh at them for an absurd-sounding comment. Examples of a “tell me” approach include the following.

- “Tell me about the work the President of the United States does.”
- “Tell me about how the blood vessels help your body.”
- Tell me about ___________________.
- Tell me what ___________________.
- “Tell me how ___________________.”

1. Remember to ask for help if you are not sure about a word.
2. Remember to relax.

FIGURE 3.4. Exam cue card.
Stress: Breaks and Stress Reduction Plans.
Teachers and parents can give significant help to students with autism by including methods of stress reduction in all routines and activities. One effective strategy is to offer a way for the student to withdraw from the class for a while if needed. A prearranged signal for a short break can avoid many problems or outbursts. When students come back from short breaks help them get into the flow of things quickly by telling them what just happened and what they are to do now. Arrange for a break area and allow a specific amount of time for breaks. It is helpful to remember when designing a system such as this that the students are rarely guilty of avoiding work but truly need a way to reduce the rigorous demands made on them because of their disability. If teachers or parents suspect that students are trying to avoid work, then the work must be analyzed as to whether the students understand it or whether a more effective form of motivation may be added.

If behavior outbursts occur avoid such questions as, “Why did you do that?” It is helpful to talk with students to determine what the problem is, but they may need a short break first before they are able to discuss the problem. An effective stress reduction program or plan can prevent outbursts if the plan is consistently used (Janzien, 1992a). Progressive relaxation techniques or imagery have proven successful in stress reduction for students with autism (Cautela & Groden, 1978; see also the Resources section at the end of this book).

Intervention and Direct Assistance

The second level of assistance consists of interventions and direct assistance that involve greater support. These strategies and methods often require more time from instructors than modifications and adaptations. Generally they require some direct involvement with an adult or possibly a peer for a specific purpose. This level of support is commonly needed by students when learning new material or learning about new environments. Some students may require increased intervention for certain activities while doing quite well with modifications or less support for much of their day. There is significant variance among students or even within one student’s program as to the degree of intervention needed. This will vary with time and overall stress or anxiety level also. It is not a sign of regression if a student needs increased support at any given time.

Following Directions: Visual Notes. When a student has questions or problems, the teacher may give assistance in a visual manner by writing out directions and instructions and then leave the student. The teacher should check to see if the direction/instruction has been started correctly but should not stay any longer than necessary. The instruction will be the most effective if kept short and concrete.

Language Comprehension: Concept and Vocabulary Development. The language difficulties of students with autism are considered a major stumbling block to participation in many activities designed for the regular curriculum. The most difficult aspect for students with autism is understanding concepts or vocabulary if they have not had experience with it. Even with experience there is often incomplete understanding about that concept, which hinders effective understanding for the students (Frith, 1991).

With careful introduction and development of language concepts, the student with autism can gain a usable level of knowledge. When introducing new concepts or abstract vocabulary, the teacher or parent may start with the student’s own experience or information about that concept. The next step is adding information that is similar but new to expand the student’s understanding. Using semantic organizers during this process is very important to show the relationships between various pieces of information. An example might be a lesson in which the student is to learn about Russia. The teacher will start talking with the student about where the student lives. Next the state the student lives in is talked about. After that the United States
is discussed with an emphasis that this is a country rather than a city or a state. At that point Russia can be introduced with the help of a map to show the two countries' geographic relationship. To teach about Russian culture or life, compare the student's life, the average life in the United States, and Russian life.

**Grading: Pass/No Pass or Teacher-Student Conferences.** Alternatives to grades may be necessary for some students with autism. The basic program for those students may be so modified from the regular curriculum that standard grading does not make sense or grading is so misunderstood by the students that it causes problems. Pass/fail or satisfactory/unsatisfactory may be useful in these cases, with the criteria for each clearly expressed ahead of time to the students.

Another strategy that is effective with some students is to hold student-and-teacher conferences about progress made on specific goals the students are working on and then jointly rate progress toward these goals together. Videotapes of the students can be viewed jointly to discuss and rate social progress. A look at classwork can help the students review their progress.

**Homework: Concept Development.** For some students with autism, alternatives to homework are the most efficient use of their time. One highly effective alternative to homework is to use the time at home on concept development. In this strategy parents work with the students to develop concepts and vocabulary that will be talked about in the next week in class. They may talk about, draw about, or find other material or pictures about upcoming topics through books, magazines, video, TV, or other means.

If assignments still require a certain amount of time spent outside the regular class schedule in the form of homework, this may be done most effectively with school staff in an alternative setting such as a resource room or school library. Greater assistance for students to complete the work or to be free from distractions can be achieved in these settings.

**Essay Work: Outline Development.** Creative and original thinking can be very difficult for students with autism. Most students prefer factual or real-life types of projects. Students may experience great anxiety and tension over creative activities while finding a nonfiction paper interesting and enjoyable to write. For nonfiction projects some adults with autism have described a process in which detailed pictures or stories are first visualized as entire pieces in their heads before they put any of it on paper (Grandin, 1988).

Students with autism can do "creative" projects if they are given assistance to develop a plan first. When assigning a creative project, plan with the students to develop the outline and directions. Make the beginning and ending clear as to when it is finished and what it will look like.

Creative information or original ideas can often be obtained from students with the use of open-ended statements. An example of an open-ended statement to start planning a project is as follows: "When I want to write about______ (or come up with a general topic for them), I think about_______." An outline for their work can be built from this using more open-ended statements, such as, "Tell me three things about (topic)."

When using the approach of asking for a specific number of responses from students using a visual grid is very effective. The visual grid shows the open-ended statement along with a blank (see Figure 3.5). The grid is a verbal worksheet in which the students fill in the answers by telling the teacher or parent their idea and the teacher or parent writes in the answer. It seems to disturb the flow of information when the students must write in the answer. Some students may get very involved in the process and ask to do some of the writing. This works effectively if it is the student’s idea and the flow of thoughts is not interrupted too much.

**Class Discussions: Advance Organizers.** Participation in regular class lessons or new
activities can be enhanced by some advance awareness of the material by the student with autism. To supply needed information Advance Organizers are used so that a teacher may prepare a student for new material. Some strategies in Advance Organizers are to introduce new concepts, teach new vocabulary, give an organizational framework for upcoming material, or give the student concrete objectives. Advance Organizers are usually visual to help the student anticipate and prepare. This may be as simple as studying a city map and bus schedule before actually making the trip. It can be as complex as visiting the library and researching material on new vocabulary before this is discussed in the classroom (Horton & Lovitt, 1989).

**Stress: Asking For Help.** The skills needed to ask for assistance from others involve a series of complicated decisions and levels of self-awareness. For many students with autism, this always remains a problem in at least some of the situations they encounter. To provide intervention in this area the teacher or parent can build in steps and strategies for seeking assistance or to have work checked. One method is to use cue cards as reminders to students to ask for help if they need it (see Figure 3.6). These

**Ask Ms. Smith for help when you need it.**
cards can be taped in their notebooks or other prominent places where they will notice them.

Another strategy to remind students to ask for help is the use of visual signals. Check marks on work at various points to remind students to seek out the teacher to have their work checked is one signal that works well (see Figure 3.7).

A final strategy that is useful if the student is using a set of written directions is to add a direction such as, "Go to the teacher if you need help."

CHAPTER SUMMARY
In this chapter the characteristics of autism have been defined with an emphasis on how this disability affects learning style. Effective assessment of students with autism is tied to their characteristics and learning styles. After defining autism and assessing its impact on the educational process, a teacher or parent can develop a plan of support based on the two levels of assistance available—modifications and adaptations or interventions and direct assistance. It is important to avoid a recipe-book approach to providing support to students with autism. Understanding the impact of autism on individual students will help you decide the levels and types of supports needed and allow for maximum individualization.

Increased independence will be the outcome for the students.

Through increased independence it is possible for students with autism to find meaningful involvement in school. Teachers and parents have many strategies to employ; the greatest challenge is to match them to the needs of the students. Maximum independence and satisfying social relationships are possible.

REFERENCES


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**Stop**

**FIGURE 3.7.** When students see check marks, it is a signal to get the teacher to check their work.


