



NASET ADHD SERIES

Part # 7 - Academic Instruction for Students with ADHD

Classroom Management Techniques

The first major component of the most effective instruction for children with ADHD is academic instruction. Teachers can help prepare their students with ADHD to achieve by applying the principles of effective teaching when they introduce, conduct, and conclude each lesson. The discussion and techniques that follow pertain to the instructional process in general (across subject areas) for students with ADHD.

Introducing Lessons

Students with ADHD learn best with a carefully structured academic lesson—one where the teacher explains what he or she wants children to learn in the current lesson and places these skills and knowledge in the context of previous lessons. Effective teachers preview their expectations about what students will learn and how they should behave during the lesson. A number of teaching-related practices have been found especially useful in facilitating this process:

- **Provide an advance organizer.** Prepare students for the day's lesson by quickly summarizing the order of various activities planned. Explain, for example, that a review of the previous lesson will be followed by new information and that both group and independent work will be expected.
- **Review previous lessons.** Review information about previous lessons on this topic. For example, remind children that yesterday's lesson focused on learning how to regroup in subtraction. Review several problems before describing the current lesson.
- **Set learning expectations.** State what students are expected to learn during the lesson. For example, explain to students that a language arts lesson will involve reading a story about Paul Bunyan and identifying new vocabulary words in the story.
- **Set behavioral expectations.** Describe how students are expected to behave during the lesson. For example, tell children that they may talk quietly to their neighbors as they do their seatwork or they may raise their hands to get your attention.
- **State needed materials.** Identify all materials that the children will need during the lesson, rather than leaving them to figure out on their own the materials required. For example, specify that children need their journals and pencils for journal writing or their crayons, scissors, and colored paper for an art project.

- **Explain additional resources.** Tell students how to obtain help in mastering the lesson. For example, refer children to a particular page in the textbook for guidance on completing a worksheet.
- **Simplify instructions, choices, and scheduling.** The simpler the expectations communicated to an ADHD student, the more likely it is that he or she will comprehend and complete them in a timely and productive manner.

Conducting Lessons

In order to conduct the most productive lessons for children with ADHD, effective teachers periodically question children's understanding of the material, probe for correct answers before calling on other students, and identify which students need additional assistance. Teachers should keep in mind that transitions from one lesson or class to another are particularly difficult for students with ADHD. When they are prepared for transitions, these children are more likely to respond and to stay on task. The following set of strategies may assist teachers in conducting effective lessons:

- **Be predictable.** Structure and consistency are very important for children with ADHD; many do not deal well with change. Minimal rules and minimal choices are best for these children. They need to understand clearly what is expected of them, as well as the consequences for not adhering to expectations.
- **Support the student's participation in the classroom.** Provide students with ADHD with private, discreet cues to stay on task and advance warning that they will be called upon shortly. Avoid bringing attention to differences between ADHD students and their classmates. At all times, avoid the use of sarcasm and criticism.
- **Use audiovisual materials.** Use a variety of audiovisual materials to present academic lessons. For example, use an overhead projector to demonstrate how to solve an addition problem requiring regrouping. The students can work on the problem at their desks while you manipulate counters on the projector screen.
- **Check student performance.** Question individual students to assess their mastery of the lesson. For example, you can ask students doing seatwork (i.e., lessons completed by students at their desks in the classroom) to demonstrate how they arrived at the answer to a problem, or you can ask individual students to state, in their own words, how the main character felt at the end of the story.
- **Ask probing questions.** Probe for the correct answer after allowing a child sufficient time to work out the answer to a question. Count at least 15 seconds before giving the answer or calling on another student. Ask followup questions that give children an opportunity to demonstrate what they know.
- **Perform ongoing student evaluation.** Identify students who need additional assistance. Watch for signs of lack of comprehension, such as daydreaming or visual or verbal indications of frustration. Provide these children with extra explanations, or ask another student to serve as a peer tutor for the lesson.
- **Help students correct their own mistakes.** Describe how students can identify and correct their own mistakes. For example, remind students that they should check their calculations in math problems and reiterate how they can check their calculations; remind students of particularly difficult spelling rules and how students can watch out for easy-to-make errors.
- **Help students focus.** Remind students to keep working and to focus on their assigned task. For example, you can provide follow-up directions or assign learning partners. These practices can be directed at individual children or at the entire class.
- **Follow-up directions.** Effective teachers of children with ADHD also guide them with follow-up directions:

- **Oral directions.** After giving directions to the class as a whole, provide additional oral directions for a child with ADHD. For example, ask the child if he or she understood the directions and repeat the directions together.
- **Written directions.** Provide follow-up directions in writing. For example, write the page number for an assignment on the chalkboard and remind the child to look at the chalkboard if he or she forgets the assignment.
- **Lower noise level.** Monitor the noise level in the classroom, and provide corrective feedback, as needed. If the noise level exceeds the level appropriate for the type of lesson, remind all students—or individual students—about the behavioral rules stated at the beginning of the lesson.
- **Divide work into smaller units.** Break down assignments into smaller, less complex tasks. For example, allow students to complete five math problems before presenting them with the remaining five problems.
- **Highlight key points.** Highlight key words in the instructions on worksheets to help the child with ADHD focus on the directions. Prepare the worksheet before the lesson begins, or underline key words as you and the child read the directions together. When reading, show children how to identify and highlight a key sentence, or have them write it on a separate piece of paper, before asking for a summary of the entire book. In math, show children how to underline the important facts and operations; in “Mary has two apples, and John has three,” underline “two,” “and,” and “three.”
- **Eliminate or reduce frequency of timed tests.** Tests that are timed may not allow children with ADHD to demonstrate what they truly know due to their potential preoccupation with elapsed time. Allow students with ADHD more time to complete quizzes and tests in order to eliminate “test anxiety,” and provide them with other opportunities, methods, or test formats to demonstrate their knowledge.
- **Use cooperative learning strategies.** Have students work together in small groups to maximize their own and each other’s learning. Use strategies such as Think-Pair-Share where teachers ask students to think about a topic, pair with a partner to discuss it, and share ideas with the group. (Slavin, 2002).
- **Use assistive technology.** All students, and those with ADHD in particular, can benefit from the use of technology (such as computers and projector screens), which makes instruction more visual and allows students to participate actively.

Concluding Lessons

Effective teachers conclude their lessons by providing advance warning that the lesson is about to end, checking the completed assignments of at least some of the students with ADHD, and instructing students how to begin preparing for the next activity.

- **Provide advance warnings.** Provide advance warning that a lesson is about to end. Announce 5 or 10 minutes before the end of the lesson (particularly for seatwork and group projects) how much time remains. You may also want to tell students at the beginning of the lesson how much time they will have to complete it.
- **Check assignments.** Check completed assignments for at least some students. Review what they have learned during the lesson to get a sense of how ready the class was for the lesson and how to plan the next lesson.
- **Preview the next lesson.** Instruct students on how to begin preparing for the next lesson. For example, inform children that they need to put away their textbooks and come to the front of the room for a large-group spelling lesson.

Individualizing Instructional Practices

In addition to the general strategies listed above for introducing, conducting, and concluding their lessons, effective teachers of students with ADHD also individualize their instructional practices in accordance with different academic subjects and the needs of their students within each area. This is because children with ADHD have different ways of learning and retaining information, not all of which involve traditional reading and listening. Effective teachers first identify areas in which each child requires extra assistance and then use special strategies to provide structured opportunities for the child to review and master an academic lesson that was previously presented to the entire class. Strategies that may help facilitate this goal include the following (grouped by subject area):

Language Arts and Reading Comprehension

To help children with ADHD who are poor readers improve their reading comprehension skills, try the following instructional practices:

- **Silent reading time.** Establish a fixed time each day for silent reading (e.g., D.E.A.R.: Drop Everything and Read and Sustained Silent Reading [Manzo & Zehr, 1998 and Holt & O'Tuel, 1989]).
- **Follow-along reading.** Ask the child to read a story silently while listening to other students or the teacher read the story aloud to the entire class.
- **Partner reading activities.** Pair the child with ADHD with another student partner who is a strong reader. The partners take turns reading orally and listening to each other.
- **Storyboards.** Ask the child to make storyboards that illustrate the sequence of main events in a story.
- **Storytelling.** Schedule storytelling sessions where the child can retell a story that he or she has read recently.
- **Playacting.** Schedule playacting sessions where the child can role-play different characters in a favorite story.
- **Word bank.** Keep a word bank or dictionary of new or “hard-to-read” sight-vocabulary words.
- **Board games for reading comprehension.** Play board games that provide practice with target reading-comprehension skills or sight-vocabulary words.
- **Computer games for reading comprehension.** Schedule computer time for the child to have drill-and-practice with sight vocabulary words.
- **Recorded books.** These materials, available from many libraries, can stimulate interest in traditional reading and can be used to reinforce and complement reading lessons.
- **“Backup” materials for home use.** Make available to students a second set of books and materials that they can use at home.
- **Summary materials.** Allow and encourage students to use published book summaries, synopses, and digests of major reading assignments to review (not replace) reading assignments.

Phonics

To help children with ADHD master rules of phonics, the following are effective:

- **Mnemonics for phonics.** Teach the child mnemonics that provide reminders about hard-to-learn phonics rules (e.g., “when two vowels go walking, the first does the talking”) (Scruggs & Mastropieri, 2000).
- **Word families.** Teach the child to recognize and read word families that illustrate particular phonetic concepts (e.g., “ph” sounds, “at-bat-cat”).

- **Board games for phonics.** Have students play board games, such as bingo, that allow them to practice phonetically irregular words.
- **Computer games for phonics.** Use a computer to provide opportunities for students to drill and practice with phonics or grammar lessons.
- **Picture-letter charts.** Use these for children who know sounds but do not know the letters that go with them.

Writing

In composing stories or other writing assignments, children with ADHD benefit from the following practices:

- **Standards for writing assignments.** Identify and teach the child classroom standards for acceptable written work, such as format and style.
- **Recognizing parts of a story.** Teach the student how to describe the major parts of a story (e.g., plot, main characters, setting, conflict, and resolution). Use a storyboard with parts listed for this purpose.
- **Post office.** Establish a post office in the classroom, and provide students with opportunities to write, mail, and receive letters to and from their classmates and teacher.
- **Visualize compositions.** Ask the child to close his or her eyes and visualize a paragraph that the teacher reads aloud. Another variation of this technique is to ask a student to describe a recent event while the other students close their eyes and visualize what is being said as a written paragraph.
- **Proofread compositions.** Require that the child proofread his or her work before turning in written assignments. Provide the child with a list of items to check when proofreading his or her own work.
- **Tape recorders.** Ask the student to dictate writing assignments into a tape recorder, as an alternative to writing them.
- **Dictate writing assignments.** Have the teacher or another student write down a story told by a child with ADHD.

Spelling

To help children with ADHD who are poor spellers, the following techniques have been found to be helpful:

- **Everyday examples of hard-to-spell words.** Take advantage of everyday events to teach difficult spelling words in context. For example, ask a child eating a cheese sandwich to spell “sandwich.”
- **Frequently used words.** Assign spelling words that the child routinely uses in his or her speech each day.
- **Dictionary of misspelled words.** Ask the child to keep a personal dictionary of frequently misspelled words.
- **Partner spelling activities.** Pair the child with another student. Ask the partners to quiz each other on the spelling of new words. Encourage both students to guess the correct spelling.
- **Manipulatives.** Use cutout letters or other manipulatives to spell out hard-to-learn words.
- **Color-coded letters.** Color code different letters in hard-to-spell words (e.g., “receipt”).
- **Movement activities.** Combine movement activities with spelling lessons (e.g., jump rope while spelling words out loud).
- **Word banks.** Use 3" x 5" index cards of frequently misspelled words sorted alphabetically.

Handwriting

Students with ADHD who have difficulty with manuscript or cursive writing may well benefit from their teacher's use of the following instructional practices:

- **Individual chalkboards.** Ask the child to practice copying and erasing the target words on a small, individual chalkboard. Two children can be paired to practice their target words together.
- **Quiet places for handwriting.** Provide the child with a special "quiet place" (e.g., a table outside the classroom) to complete his or her handwriting assignments.
- **Spacing words on a page.** Teach the child to use his or her finger to measure how much space to leave between each word in a written assignment.
- **Special writing paper.** Ask the child to use special paper with vertical lines to learn to space letters and words on a page.
- **Structured programs for handwriting.** Teach handwriting skills through a structured program, such as Jan Olsen's Handwriting Without Tears program (Olsen, 2003).

Math Computation

Numerous individualized instructional practices can help children with ADHD improve their basic computation skills. The following are just a few:

- **Patterns in math.** Teach the student to recognize patterns when adding, subtracting, multiplying, or dividing whole numbers. (e.g., the digits of numbers which are multiples of 9 [18, 27, 36 . . .] add up to 9).
- **Partnering for math activities.** Pair a child with ADHD with another student and provide opportunities for the partners to quiz each other about basic computation skills.
- **Mastery of math symbols.** If children do not understand the symbols used in math, they will not be able to do the work. For instance, do they understand that the "plus" in $1 + 3$ means to add and that the "minus" in $5 - 3$ means to take away?
- **Mnemonics for basic computation.** Teach the child mnemonics that describe basic steps in computing whole numbers. For example, "Don't Miss Susie's Boat" can be used to help the student recall the basic steps in long division (i.e., divide, multiply, subtract, and bring down).
- **Real-life examples of money skills.** Provide the child with real-life opportunities to practice target money skills. For example, ask the child to calculate his or her change when paying for lunch in the school cafeteria, or set up a class store where children can practice calculating change.
- **Color coding arithmetic symbols.** Color code basic arithmetic symbols, such as $+$, $-$, and $=$, to provide visual cues for children when they are computing whole numbers.
- **Calculators to check basic computation.** Ask the child to use a calculator to check addition, subtraction, multiplication, or division.
- **Board games for basic computation.** Ask the child to play board games to practice adding, subtracting, multiplying, and dividing whole numbers.
- **Computer games for basic computation.** Schedule computer time for the child to drill and practice basic computations, using appropriate games.
- **"Magic minute" drills.** Have students perform a quick (60-second) drill every day to practice basic computation of math facts, and have children track their own performance.

Solving Math Word Problems

To help children with ADHD improve their skill in solving word problems in mathematics, try the following:

- Reread the problem. Teach the child to read a word problem two times before beginning to compute the answer.
- Clue words. Teach the child clue words that identify which operation to use when solving word problems. For example, words such as “sum,” “total,” or “all together” may indicate an addition operation.
- Guiding questions for word problems. Teach students to ask guiding questions in solving word problems. For example: What is the question asked in the problem? What information do you need to figure out the answer? What operation should you use to compute the answer?
- Real-life examples of word problems. Ask the student to create and solve word problems that provide practice with specific target operations, such as addition, subtraction, multiplication, or division. These problems can be based on recent, real-life events in the child’s life.
- Calculators to check word problems. Ask the student to use a calculator to check computations made in answering assigned word problems.

Use of Special Materials in Math

Some children with ADHD benefit from using special materials to help them complete their math assignments, including:

- **Number lines.** Provide number lines for the child to use when computing whole numbers.
- **Manipulatives.** Use manipulatives to help students gain basic computation skills, such as counting poker chips when adding single-digit numbers.
- **Graph paper.** Ask the child to use graph paper to help organize columns when adding, subtracting, multiplying, or dividing whole numbers.

Organizational and Study Skills Useful for Academic Instruction of Children with ADHD

Many students with ADHD are easily distracted and have difficulty focusing their attention on assigned tasks. However, the following practices can help children with ADHD improve their organization of homework and other daily assignments:

- **Designate one teacher as the student’s advisor or coordinator.** This teacher will regularly review the student’s progress through progress reports submitted by other teachers and will act as the liaison between home and school. Permit the student to meet with this advisor on a regular basis (e.g., Monday morning) to plan and organize for the week and to review progress and problems from the past week.
- **Assignment notebooks.** Provide the child with an assignment notebook to help organize homework and other seatwork.
- **Color-coded folders.** Provide the child with color-coded folders to help organize assignments for different academic subjects (e.g., reading, mathematics, social science, and science).
- **Work with a homework partner.** Assign the child a partner to help record homework and other seatwork in the assignment notebook and file work sheets and other papers in the proper folders.
- **Clean out desks and book bags.** Ask the child to periodically sort through and clean out his or her desk, book bag, and other special places where written assignments are stored.
- **Visual aids as reminders of subject material.** Use banners, charts, lists, pie graphs, and diagrams situated throughout the classroom to remind students of the subject material being learned.

Assisting Students with ADHD with Time Management

Children with ADHD often have difficulty finishing their assignments on time and can thus benefit from special materials and practices that help them to improve their time management skills, including:

- Use a clock or wristwatch. Teach the child how to read and use a clock or wristwatch to manage time when completing assigned work.
- Use a calendar. Teach the child how to read and use a calendar to schedule assignments.
- Practice sequencing activities. Provide the child with supervised opportunities to break down a long assignment into a sequence of short, interrelated activities.
- Create a daily activity schedule. Tape a schedule of planned daily activities to the child's desk.

Helpful Study Skills for Students with ADHD

Children with ADHD often have difficulty in learning how to study effectively on their own. The following strategies may assist ADHD students in developing the study skills necessary for academic success:

- **Adapt worksheets.** Teach a child how to adapt instructional worksheets. For example, help a child fold his or her reading worksheet to reveal only one question at a time. The child can also use a blank piece of paper to cover the other questions on the page.
- **Venn diagrams.** Teach a child how to use Venn diagrams to help illustrate and organize key concepts in reading, mathematics, or other academic subjects.
- **Note-taking skills.** Teach a child with ADHD how to take notes when organizing key academic concepts that he or she has learned, perhaps with the use of a program such as Anita Archer's Skills for School Success (Archer & Gleason, 2002).
- **Checklist of frequent mistakes.** Provide the child with a checklist of mistakes that he or she frequently makes in written assignments (e.g., punctuation or capitalization errors), mathematics (e.g., addition or subtraction errors), or other academic subjects. Teach the child how to use this list when proofreading his or her work at home and school.
- **Checklist of homework supplies.** Provide the child with a checklist that identifies categories of items needed for homework assignments (e.g., books, pencils, and homework assignment sheets).
- **Uncluttered workspace.** Teach a child with ADHD how to prepare an uncluttered workspace to complete assignments. For example, instruct the child to clear away unnecessary books or other materials before beginning his or her seatwork.