



ADHD: Classroom Interventions

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Attention deficit hyperactivity disorder (ADHD) is one of the most common childhood behavior disorders. The 2006 National Health Interview Survey indicated that 7% of children ages 3-17 have at some point been diagnosed with ADHD (Bloom & Cohen, 2007). Combined with this high prevalence is the fact that ADHD's core symptoms of inattention, hyperactivity, and impulsivity are associated with a variety of school adjustment challenges. It is not surprising that these students are at risk for school failure and require behavioral interventions to promote school success.

GENERAL APPROACHES TO BEHAVIOR INTERVENTION

Before offering interventions for specific ADHD challenges, it is important to acknowledge that, while these students do have a core set of common difficulties, this group is very diverse. Instead of focusing only on ADHD symptoms, intervention should begin by identifying specific challenging behaviors. Next, identify alternative desired behaviors that would preclude the occurrence of the challenging behaviors (behaviors that are incompatible with the undesired behaviors). Keep both sets of behaviors in mind. Educators need to not only make clear to students what behavior is unacceptable, but also what behavior is acceptable.

Ensure that intervention plans are based on a functional assessment of behavior. Identify antecedents and consequences of both the challenging and desirable behaviors. Analysis of antecedents will suggest adjustments to the classroom setting that can set up the student for success (e.g., reducing the amount of time spent in specific challenging situations), while analysis of consequences will identify those environmental conditions that reinforce behavior (e.g., escaping challenging situations). The function of the problem behavior should guide interventions. For example, if the behavior is maintained by negative reinforcement (e.g., avoidance of an undesired task), the intervention should ensure that this goal is not obtained by the problem behavior. At the same time, the intervention should teach the student that the desirable behavior is a more effective and efficient way of obtaining the desired behavioral goal.

ENVIRONMENTAL AND INSTRUCTIONAL CONSIDERATIONS

Classroom environmental changes can be helpful in reducing problematic behaviors and learning difficulties. The interventions discussed below might be thought of as *setting up the student with ADHD for success*. For specific citations in support of these interventions, see Brock, Jimerson, and Hansen (2009).

Task Duration

Given the short attention span of students with ADHD, academic assignments should be brief, with immediate feedback regarding accuracy. For example, long projects can be broken up into smaller parts. It can also be helpful to allow students to take breaks during long periods of class work.

Task Difficulty

Students with ADHD are more likely to give up and become frustrated when given an academic task that exceeds their instructional level. They also tend to become bored and inattentive with simple tasks. Adjusting task difficulty (e.g., matching difficulty to the student's skill level) is a way to engage students with ADHD and to help them avoid frustration. Some students with ADHD may also benefit from starting with easier tasks and slowly progressing to more difficult tasks as their confidence builds.

Direct Instruction

Attention and on-task behavior can be improved when the student with ADHD is engaged in teacher-directed activities instead of independent seatwork. Teaching note-taking strategies increases the benefits

of direct instruction and has been shown to significantly improve on-task behavior, scores on assignments, and comprehension. Students with ADHD may also benefit from explicit direct instruction on attention (i.e., attention training sessions). Skills practiced in these sessions can include avoiding irrelevant cues (e.g., other students talking) and selectively attending to important material (e.g., the teacher's instruction).

Peer Tutoring

Peer tutoring has been shown to be effective in supporting academic and behavioral gains among students with ADHD. It is recommended that peer tutors be of the same gender as the student with ADHD and have higher academic and better behavioral skills. The highest academic gains in peer tutoring situations are made when students are presented with challenging material and when teacher feedback is frequent. As little as 20 minutes per day of peer tutoring has been found to result in significant increases in on-task behavior.

Class-Wide Peer Tutoring

Students with ADHD who have participated in class-wide peer tutoring have been reported to demonstrate increased on-task behavior and improved accuracy on academic tasks. Each student plays the role of a tutor and a tutee, and teachers are required to carefully monitor the process. This intervention involves first providing students with ADHD with instruction on how to be an effective tutor and then giving them scripts of academic materials. Tutors give immediate feedback and points are awarded for correct responses.

Scheduling

Given that the on-task behavior of students with ADHD typically worsens as the academic day progresses, it is recommended that critical instruction be provided in the morning. During the afternoon, when problem-solving skills tend to be especially poor, more active, nonacademic activities can be scheduled. Further, preferred activities can be scheduled after nonpreferred activities to provide an incentive to complete challenging tasks.

Novelty

Increasing the novelty and interest level of tasks (e.g., color, shape, texture) reduces activity level, increases attention, and improves the overall performance of students with attention problems. Teachers can use novelty in the classroom by bolding important elements of written directions and using brightly colored paper, animation, or even different intonations when giving instructions or teaching a lesson. Students with ADHD respond positively to the novelty provided by films, models, and skits. It is also important to minimize

assigning repetitive tasks for students with ADHD, as these increase off-task behaviors.

Structure and Organization

Students with ADHD respond positively to structure and predictability. They can benefit from the use of a daily schedule and maintaining a consistent day-to-day routine. It may also be helpful to give them advance notice of changes in the class routine. Lessons themselves can be carefully structured and important points clearly identified. For example, providing a lecture outline is a helpful aid that increases memory of main ideas. Students with ADHD perform better on memory tasks when material is meaningfully structured for them.

Rule Reminders and Visual Cues

The rules given to students with ADHD should be well defined, specific, frequently reinforced, and associated with clear consequences. Because relying on students' memory of rules is insufficient, visual rule reminders should be placed throughout the classroom. It is also helpful if rules are reviewed before activity transitions and following school breaks. Teaching students self-monitoring skills using visual cues has been shown to improve selective and sustained attention and language while at the same time reducing impulsivity. Such instruction can be facilitated by providing students with a list of questions to run through when starting a new assignment, such as: "What is the problem?" "What is my plan?" "Am I following my plan?" and "How did I do?"

Pacing of Work

When possible, allow students with ADHD to set their own pace. The intensity of problematic ADHD behaviors is lessened when work is self-paced.

Clear and Direct Instructions

Students with ADHD often have difficulty following directions with many steps. Directions should be short, specific, and direct. By using fewer and more direct words to explain assignments, teachers can increase the understanding and engagement of students with ADHD. To ensure understanding, students with ADHD can be asked to rephrase directions in their own words. Teachers should be prepared to repeat directions frequently and recognize that these students may often miss what was said due to the inattention associated with their ADHD.

Choice

Allowing students a choice of activities can help to reduce disruptive behaviors and increase on-task behavior and task completion. This accommodation might

involve giving a student a list of possible tasks to complete and letting the student choose what to work on first. Choices might include working on either a math or a language arts assignment for 15 minutes before being required to switch to the other subject. This strategy is most effective when it is used in combination with other behavioral techniques.

Productive Physical Movement

Students with hyperactive symptoms may have difficulty sitting still for prolonged periods of time. Planning for increased physical movement has been shown to improve the on-task behavior of students with ADHD. It may be helpful to develop a variety of physical activities such as stretch breaks, a trip to the office, a chance to sharpen a pencil, taking a note to another teacher, watering the plants, feeding classroom pets, or simply standing at a desk while completing class-work. Even the movement required by calculator use has been shown to increase on-task behavior. Alternating seat-work activities with other activities that allow for movement is essential. It is also important to keep in mind that on some days it will be more difficult for the student to sit still than on others. Teachers need to be flexible and modify instructional demands accordingly.

Active Versus Passive Involvement

Tasks that require active (as opposed to passive) responses can help hyperactive students channel their disruptive behaviors into constructive responses. While it can be challenging for these children to sit and listen to a long lecture, they can be successful participants in the same lecture when asked to assist in some way (e.g., help with audiovisual aids, write important points on the chalk board).

Cross-Modality Responding and Feedback

Students with ADHD have been found to respond better to cross-modal feedback. For example, students respond better to verbal feedback when completing visual tasks. Students also tend to do better when response options are available in a format different from the question. For example, when presented with a question orally, students do better when their response options are listed visually. Cross-modal feedback allows students with ADHD to differentiate the information they are receiving about their performance from their task and differentiate the information they are taking in from the information they are generating.

Distractions

Placing the student in close proximity to the teacher and away from high traffic areas can reduce distractions and increase attention (e.g., seating the student away from

activity centers, mobiles, doorways, and windows). Eliminating irrelevant and highly desirable distractions such as toys or cartoons from the work area is also an effective modification. Auditory distractions (e.g., side conversations) during complex and cognitively effortful tasks tend to be the most problematic for students with ADHD and thus are especially important to minimize or eliminate.

Planning Ahead

Knowledge of ADHD and its primary symptoms is helpful in anticipating difficult situations. Keep in mind that some situations will be more difficult for some students than others. Effortful problem-solving tasks may be especially troublesome due to the low frustration threshold of many students with ADHD. These situations should be anticipated and appropriate accommodations made. For example, when presenting a task that the teacher suspects might exceed the student's attentional capacity, it is appropriate to reduce assignment length and emphasize quality as opposed to quantity.

CONTINGENCY MANAGEMENT: ENCOURAGING APPROPRIATE BEHAVIOR

Although classroom environmental changes and accommodations can be helpful in reducing problematic behaviors and learning difficulties, they are often not sufficient by themselves. Contingencies that reinforce appropriate or desired behaviors and discourage inappropriate or undesired behaviors, such as those discussed below, should also be available. For specific citations in support of these contingency management approaches, see Brock et al. (2009).

Powerful External Reinforcement

Students with ADHD typically need an external measure of success and a payoff for increased performance. Relying on intangible rewards is often not enough for these students. Keep in mind that the contingencies or consequences used must be delivered more immediately and frequently to students with ADHD, who tend to be more influenced by current rewards than by prior reinforcement. Behavioral consequences will need to be more powerful than is required for other students. The rewards used with these students may lose their reinforcing power quickly and should be frequently changed or rotated.

Use of both negative and positive consequences is essential. However, before negative consequences are implemented, appropriate and rich incentives should first be developed to reinforce desired behavior. Give much encouragement, praise, and affection, as students with ADHD are easily discouraged. When negative consequences are administered, they should be delivered in a fashion that does not embarrass the student.

Self-Monitoring

Many students with ADHD have the skill to perform desired behaviors. However, they are not able to perform consistently over time due to challenges with self-regulation. Thus, self-monitoring can be another intervention helpful to the student with ADHD and has been found to increase on-task behavior. For example, an audiotape of tones played at random intervals can be used to remind a student to monitor his or her behavior. The student and the teacher listen for the tones and record whether or not the student is on-task. At predetermined times during the day, the teacher's and student's records are compared and the student is reinforced for agreement with teacher responses.

Once students become accurate in assessing their behavior, they will then be reinforced for improvements in on-task behavior. Once students have been taught to monitor and reinforce their behaviors, any external monitoring and reinforcement can be decreased. Self-monitoring has been shown to be especially effective when the targeted behaviors or desired outcomes are valuable to the student.

Self-monitoring strategies have been found to result in gains in on-task behavior and improvements in selective and sustained attention. They also reduce impulsivity, regardless of whether a child with ADHD responds to medication. These outcomes suggest that self-monitoring may be a particularly promising technique for children whose challenging behaviors are affected by medication.

Token Economy Systems

These systems are proven to be helpful in improving both the academic and behavioral functioning of students with ADHD. These typically involve giving students tokens (e.g., poker chips) when they display appropriate behavior. The tokens are in turn exchanged for tangible rewards or privileges at specified times. The use of a token economy is an effective way to deliver immediate feedback frequently to students in a busy environment.

Response-Cost Programs

While verbal reprimands are sufficient for some students, more powerful negative consequences, such as response-cost programs, are needed for others. The use of a response-cost system has been demonstrated to increase the levels of on-task behavior, seatwork productivity, and academic accuracy of students with ADHD. A specific response-cost program found to be effective with ADHD students involves giving a specific number of points at the start of each day. When a rule is broken (i.e., a problem behavior is displayed), points are taken away. To maintain their points and receive

reinforcement, students must avoid displaying inappropriate behaviors.

Since students with ADHD are easily frustrated, it may be helpful to allow them the opportunity to earn points back by displaying appropriate behavior. At the end of the period or day, students are allowed to exchange the points they have earned for a tangible reward or privilege. When there are high student-teacher ratios in a classroom, response-cost programs have been found to be more practical to implement than other behavioral interventions, since it is difficult to continuously monitor every student's behavior.

Time-Out

Time-out typically involves removing the student from classroom activities. Before time-out is implemented, it should be clear that it is not reinforcing for the child (i.e., giving the student what he or she wants). For example, if a student is displaying aggressive or disruptive behaviors to receive attention from peers, removing the student from his or her peers (i.e., time-out) would be effective. However, if a student is trying to avoid schoolwork, time-out can be reinforcing.

The time-out area should be a neutral environment and the student should remain there for only a short time. After the time-out is completed, a discussion of what went wrong and how to prevent the problem in the future takes place. While these procedures are effective among students with ADHD, it is recommended that they be used only with the most disruptive classroom behaviors and only when there is a highly trained staff member available to monitor the time-out process.

CONCLUSIONS

As students with ADHD are a very diverse group, there is no one intervention (or set of interventions) that will improve the classroom functioning of all of these students. It is suggested that classroom modifications be tailored to unique needs. In developing these modifications, it is perhaps best to begin by examining how the classroom environment might be changed to set up the student for success. The next step is to consider the implementation of a contingency management system designed to provide external incentives for appropriate classroom behaviors. It is important to remember that behavior management programs must be consistently applied. Further, it is essential to avoid excessive use of negative consequences such as reprimands and time-outs. In all response-cost programs, it is important to avoid the use of unrealistic standards that result in excessive point or privilege loss.

Students with ADHD experience substantial amounts of school failure. For any intervention program to be effective, the student with ADHD must experience

success. It is essential that students are frequently reinforced for what we want them to do, rather than punished for what we do not want them to do.

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RECOMMENDED RESOURCES

Print

- DuPaul, G. J., & Weyandt, L. L. (2006). School-based intervention for children with attention deficit hyperactivity disorder: Effects on academic, social, and behavioral functioning. *International Journal of Disability, Development and Education*, 53, 161-176.
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Instructional strategies and practices. Washington, DC: Author. Available: <http://www.ed.gov/rschstat/research/pubs/adhd/adhd-teaching-2006.pdf>

Zentall, S. S. (2005). Theory- and evidence-based strategies for children with attentional problems. *Psychology in the Schools*, 42, 821-836.

Video

Stoner, G., & DuPaul, G. S. (2008). *Classroom interventions for ADHD* (DVD). Available from: <http://www.psychotherapy.net>

Online

Centers for Disease Control and Prevention: <http://www.cdc.gov/ncbddd/adhd>

CHADD (Children and Adults With Attention Deficit/Hyperactivity Disorder): <http://www.chadd.org>

National Resource Center on AD/HD: A Program of CHADD: <http://www.help4adhd.org>

U.S. Department of Education, *Identifying and treating attention deficit hyperactivity disorder: A resource for school and home*: <http://www.ed.gov/rschstat/research/pubs/adhd/adhd-identifying.html>

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