CHAPTER 15
TREATMENT OF ADHD IN SCHOOL SETTINGS

Linda Pfiffner, George J. DuPaul, and Russell Barkley

Over the past decade, the quantity of information about ADHD and school-based interventions has proliferated. A number of efforts sponsored by the US Department of Education have resulted in readily available written documents about recommended school-based interventions for meeting the needs of students with ADHD (see OSEP 2004). Major education journals and professional education associations have focused on ADHD and numerous texts have been written on the subject. A greater number of students with ADHD are being served by special education programs or through 504 accommodations in general education classrooms (Forness and Kavale 2001). Because the 1991 memorandum from the US Department of Education stipulating that ADHD/ADD may be a qualifying condition under Part B of the Other Health Impaired category, the number of students with ADHD receiving services through this mechanism increased dramatically (Forness and Kavale 2001). Clearly, awareness and identification of ADHD is ever-increasing in school districts across the country.

There remains, however, a pressing need to further develop school-based interventions and provide adequate training and resources to teachers. Several large scale studies over the past decade, however, have made clear some of the limitations of behavioral interventions. The largest single study of medication and psychosocial treatment effects for ADHD youth, referred to as the MTA study is described more fully in a later chapter, along with other combined treatment programs. Pertinent to this discussion on school-based intervention, the psychosocial treatment in that study included a package of school-based interventions received by all children in the psychosocial treatment arms along with intensive parent management training for the parents. The school interventions included an 8-week summer treatment program (described under model interventions below), 3 months of behavioral intervention in the classroom by a paraprofessional (described under model interventions below), followed

by teacher –administered behavioral interventions in the classroom for the remaining 5 months of the school year. Some improvement in ADHD/ODD symptom severity occurred for those receiving this package of interventions without medication, but it was not different from the treatment-as-usual control group and was significantly less than that achieved with medication only, with the caveat that those with a comorbid anxiety disorder responded equally well to medication and psychosocial treatment (Jensen 2002). The behavioral intervention added benefit to medication in specific areas of impairment (e.g., teacher-rated social skills, academics, parent-child relationships) (Jensen, Hinshaw et al. 2001) and the best outcomes overall were achieved among the children receiving both behavioral interventions and medication (Conners, Epstein et al. 2001; Swanson, Kraemer et al. 2001). Still, the lack of greater impact of the intensive behavioral intervention in the absence of medication and on ADHD/ODD symptoms generally was unexpected and could be due to a number of factors with two of these being the well-known lack of generalization and maintenance of gains when behavioral treatments are withdrawn. Pertinent to this point, post-treatment measures were gathered at two points after the behavioral intervention had been faded and was no longer being used at its highest intensity while medication was still being used at its most effective dose. A recent study examining school-based intervention and parent training for young children at-risk for disruptive behavior disorders, also found that initial treatment effects were not maintained and did not generalize to new classrooms two years after the treatment was terminated (Shelton, Barkley et al. 2000).

These results and those from other combined treatment studies have led some to question the utility of behavioral interventions and to instead advocate for greater use of medication (Elia, Ambrosini et al. 1999; Forness & Kavale 2001). A number of factors, however, argue for the strong need to increase the focus on further development of non-pharmacological school-based interventions. First despite the remarkable gains in pharmacological treatment of ADHD (e.g., new delivery systems and medications continually coming on the market to aid in tailoring to the needs of each child), not all

children benefit and those that do are usually not "normalized." Second, some children show untoward side effects and not all parents choose to use medication; in fact parents tend to favor behavioral over pharmacological treatments (Pelham 1999). Third, although medications are effective in reducing ADHD symptoms, pharmacological effects on associated academic and social deficits are less pronounced (Conners, 2002). Furthermore, school-based interventions can be quite powerful while they are being administered, particularly when there is confirmation that they are being administered consistently. The meta-analysis published by DuPaul and Eckert (1997) show moderate to large effect sizes for contingency management programs, as well as academic interventions such as peer tutoring, on ADHD-related behaviors; such effect sizes can rival those achieved by medications when provided in moderate to high doses of intensity. Smaller, but positive effects were found on academic outcome measures. Lest this sound like special pleading for behavioral treatments, it is important to bear in mind when comparing medication with behavioral interventions in schools that advances in the technology for non-pharmacological interventions have lagged well behind the advances made in psychopharmacology. Much of the work in psychopharmacology is on improving delivery systems, increasing the duration of effect, incorporating mixed (rising) dose intensities across the day, and better targeting the diverse needs of youth with ADHD. Similar issues need to be addressed for non-pharmacological interventions: how to better tailor behavioral treatments to individual child needs, how to extend the effects across time and situations and how to improve delivery systems, in this case, how to improve the implementation of effective interventions by teachers in schools. Over the past several years, there have been some advances in these areas. Much of the recent work on school-based interventions has focused on academic interventions and use of a functional analysis in planning interventions to address individual needs. In addition, several promising new programs have been developed to facilitate implementation of behavioral interventions in school settings. This chapter will review these advances along with the technology as

presented in the previous texts; this technology continues to serve as a fundamental base for the efficacy of behavioral interventions.

Teacher Education, Training and Support

The educational success of children with ADHD involves not only a well-documented behavioral technology (which we review later), but also the presence of teachers actively and willingly engaged in the process of working with students with ADHD , and an administration that supports identification and intervention for ADHD. The latter two components are clearly crucial to treatment success, as behavioral technologies and curriculum modifications can only work if they are deployed regularly in classroom settings. The teacher's knowledge of and attitude toward the disorder of ADHD is critical. In a recent survey of teachers, Arcia et al (2000) found that many teachers lack basic information about the nature of ADHD and comprehensive classroom management programs geared for these students. We have found that where teachers have a poor grasp of the nature, course, outcome, and causes of this disorder and misperceptions about appropriate therapies, little impact will be gained from attempting to establish behavior management programs within that classroom. On the other hand, a positive teacherstudent relationship, based on teacher understanding of the student and the disorder, may improve academic and social functioning. Teachers should be aware of the following:

- ADHD is considered to be a biologically-based, educational disability that is treatable, but not curable. Interventions can have a powerful and positive impact because the severity of symptoms and comorbid conditions are very sensitive to environmental variables. However, the refractory nature of ADHD symptomatology makes it likely that these children will continue to experience at least some difficulty in their academic and social endeavors. ADHD is therefore akin to diabetes where the goals of school intervention are to contain and manage the symptoms so as to preclude or minimize the occurrence of secondary harms that befall the child who is not well managed (e.g., grade retention, peer rejection, suspension, expulsion, low achievement skills, etc.)

- ADHD is not due to a lack of skill or knowledge, but is a problem of sustaining attention, effort, and motivation and inhibiting behavior in a consistent manner over time, especially when consequences are delayed, weak or absent. Thus it is a disorder of performing what one knows, not of knowing what to do. That said, deficits in specific skill areas (e.g., academic, social, organizational) are common among students with ADHD as well. These may arise, in part, from the high co-occurrence of learning disabilities with ADHD, as noted in earlier chapters, as well as from educational inopportunity in some instances (e.g., adoption from third world or war torn countries or residing within impoverished neighborhoods). But such deficits can also arise from the direct interference of ADHD symptoms with the process of knowledge acquisition (availability for learning) and the weaknesses in executive functioning necessary to acquire information more efficiently and deploy it more effectively.

- It is harder for students with ADHD to do the same academic work and exhibit the social behavior expected of other students. Consider the student to be 30% or more behind in social skills and organization, as Barkley (2001) has argued. The student with ADHD needs more structure, more frequent and salient positive consequences, more consistent negative consequences, and accommodations to assigned work.

- The most effective interventions for improving school performance are those applied consistently within the school setting. Family therapy, individual therapy, and parent training, while often beneficial at home, rarely prove to be helpful in improving academic and behavioral functioning of ADHD children at school (Abramowitz & O'Leary, 1991).

- School-based interventions should include both proactive and reactive strategies to maximize behavior change (DuPaul & Stoner, 2003). Proactive interventions involve manipulating antecedent events (e.g., modifying instruction or classroom context) to prevent challenging behaviors from occurring. Alternatively, reactive strategies are characterized by implementing consequences (e.g., positive reinforcement) following a target behavior.

- Teachers should consider the use of peers, parents, or computers to deliver classroom interventions (DuPaul & Power, 2000). The acceptability and feasibility of school-based interventions may be enhanced by going beyond an exclusive reliance on teachers to deliver interventions.

Education about ADHD can be imparted through in-service presentations and by providing brief reading materials or videotapes similar to those mentioned in Chapters 12. Prepared Powerpoint files for such purposes are available as well to assist with giving such presentations (see www.russellbarkley.com). General education teachers also require training to implement behavioral programs because such training is rarely provided in their education credential programs. General education teachers are less likely to use classroom accommodations and behavioral interventions than special education teachers (Zentall & Stormont-Spurgin 1995; Forness & Kavale 2001) and they report that a lack of training is a significant barrier to effective programming for students with ADHD (Arcia, Frank et al. 2000). Even so, many general education teachers do report using some type of behavioral intervention in their classrooms (Fabiano & Pelham, 2003), although the effects are often limited. This is likely due to the fact that the typical teacher has only cursory exposure (not training) to behavior modification and/or uses weak and untailored behavioral interventions.   So, although a teacher may report using a behavioral intervention, it may not be an effective one, and the teacher may not have the training or skill to improve it. Training is intended to remedy this problem. At least one study found that teachers who received training reported increased confidence in setting up effective behavioral contracts and adjusting lessons and materials for students with ADHD (Arcia, Frank et al. 2000).

What type of training is most effective? It has been our experience that one-day in-service presentations, while useful for imparting information about the disorder, are usually not sufficient for training teachers how to implement behavior modification programs. Such school-sponsored training can be effective, however, if followed up by on-going consultation or technical support. In recent years, many schools have adopted

collaborative consultation models, whereby a behavioral consultant (or school psychologist) works with educators in general and special education in a systematic manner to assess student needs and plan and implement interventions (Dunson III, Hughes, & Jackson, 1994; Shapiro et al., 1996). Ideally, the consultant should conduct a functional assessment of the student (discussed later) which includes an observation of the student in the classroom setting and meeting with the teacher about the student and what antecedents and consequences may be related to the problems he or she is having. Once an intervention is designed and implemented, the consultant should meet with the teacher daily or weekly to review progress. Behavioral programs usually require modification over time so this ongoing evaluation and consultation is essential. One such program was developed at Lehigh University to serve students in middle school (Shapiro et al., 1996). The program begins with a 2-day in-service training focused on ADHD and school-based assessment and intervention. Following this basic training, intensive on-site consultation is provided for approximately 2 hours per day over a 60 day period. Consultation includes such activities as developing and implementing individual programs with students having difficulty (e.g., daily report card, self-management training), establishing methods of identifying and monitoring ADHD students, and assisting in communicating and interacting with physicians. Advanced training in ADHD is also provided. The program has been found to substantially improve the knowledge base and service to middle school students with ADHD and represents a very promising approach for systematizing training efforts within school districts.

Since the last published version of this chapter, additional models for training teachers have been developed. Although not specific to ADHD, Atkins et al (2003) has initiated several programs for improving school-based models for mental health service delivery. Of relevance for teacher training and support, the Teacher Key Opinion Leaders (KOL) project focused specifically on ways in which indigenous resources in urban schools could support classroom teachers in their implementation of evidence-based educational strategies for students, many of whom have ADHD. This program is

based on the idea that influential peers would be more likely than outside consultants to influence teachers to adopt novel classroom practices. Teachers who were highly regarded for their ability to assist with classroom issues were selected by other teachers as key opinion leaders. These leaders received training in 11 evidence-based practices (e.g., positive reinforcement, response cost, peer tutoring, home-school notes) and then served as teacher consultants at their respective schools. Preliminary data show that KOL-supported teachers reported using significantly more of the 11 recommended strategies than teachers who did not receive such support. Consultation from other mental health providers was not associated with use of any of the strategies. Atkins et al. (2003) also is developing a program to increase service integration and sustainability in urban settings by coordinating delivery of mental health services among schools and community social service agencies. This form of "wrap-around" program has an emphasis on use of evidence-based universal, targeted and intensive interventions, tailored to the needs of individual children and provided through close collaboration between school and mental health agencies. Funding for the program is offset by existing resources (e.g., Medicaid).

Another consideration for training teachers in school-based interventions is the extent to which these interventions are viewed as acceptable by teachers. Teachers report that they tend to prefer positive over negative consequences, behavioral interventions with medication over medication alone, and time-efficient (e.g., home-school daily report card) over time-consuming (e.g., response cost) interventions (Pisecco, Huzinec, & Curtis, 2001; Power & Hess 1995). Although in actual practice, use of response cost also has been viewed favorably (e.g., McGoey and DuPaul 2000). Acceptability of treatments may vary as a function of the child's gender, with medication being viewed as more acceptable for boys than for girls with ADHD (Pisecco et al., 2001). The acceptability of interventions may also differ by grade level. Middle and secondary level teachers reported having tried and being more successful in using accommodations that involve the child in activities and allow for alternative seating arrangements during independent work. General educators appear to show a

greater resistance to making accommodations than special educators. For example,

Zentall et al. (1995) found that general educators showed less willingness to use

accommodations that involved varying instructional methods and providing alternative

modes for teaching or responding (e.g., allowing alternative response modes, using

special organizational systems, modifying tests, using prompt cards). This greater

resistance may reflect a lack of understanding about the nature of ADHD, about

individual student needs, or about how to use these interventions efficiently, all of

which may be helped through in-service training.

However, it seems reasonable that special education teachers with small classes

would have less difficulty implementing behavioral programs for students with ADHD

than teachers of up to 30-40 students, who may find the recordkeeping, close

monitoring of the child, and administration of a range of rewards and/or negative

consequences to be very time-consuming and impractical. To help with this common

situation:

- the addition of a behavioral aide in the classroom can be invaluable, even when the
  aide must rotate across multiple classrooms because of budget limitations.

- teachers should be provided with ongoing consultation to help plan and
  troubleshoot behavioral programs.

- teachers should be supported in their efforts to work with students with ADHD.
  Support may include verbal recognition for their efforts, financial compensation for
  special materials and books, and planning and development time. We have found
  that schools with effective practices for ADHD invariably have an administration
  that recognizes this disorder as a condition in need of specialized accommodations
  or interventions and provides training and resources necessary to adequately serve
  the special needs of these students.

Unfortunately, even with adequate resources, some teachers may still be averse

to working with students with ADHD or using behavior modification procedures on

theoretical grounds (e.g., its dehumanizing or too mechanistic). In such cases of poor

teacher motivation or knowledge or where teacher philosophy greatly conflicts with the

necessary interventions for a child with ADHD, parents are to be encouraged to be assertive in pressing the school administrators for either greater teacher accountability or a transfer to another classroom or school.

Collaboration Between Home and School

An important consideration for enhancing the effectiveness of school interventions is the relationship between home and school. In cases where both teacher and parents are knowledgeable about ADHD, have realistic goals, and are motivated to work with ADHD, effective collaborations develop easily. In other cases, home-school conflicts can be significant and ultimately compromise the student's progress. Parents may blame their child's difficulties on the school or may feel that the school system is failing to adequately address their child's needs. Teachers may believe that family problems are causing the child's symptoms or that medication should be considered in lieu of accommodations in the classroom. During recent years, conflict between home and school has escalated as demonstrated by increased involvement of child advocates and the legal system to sort out educational placement issues. Some of the conflict is due to misinformation and can be addressed through education about ADHD. Parents and teachers need to dispel notions of blame and work toward improving the fit between the child's characteristics and the environments at school and at home. A behavioral consultant/clinician with expertise in ADHD and behavior modification can help mediate these problems by providing information regarding the nature of ADHD and its causes as well as information regarding the role of behavioral interventions (including both their strengths and limitations) in the treatment of ADHD. The need to establish interventions in all settings in which problems occur should be stressed to parents and school personnel since changes in one setting rarely generalize without intervention to other settings. Many collaborative teams within schools routinely include parents so that complementary programs can be designed at school and at home (Burcham et al., 1993; Colton & Sheridan, 1998; Kotkin, 1995). Recently, Atkins et al (2003) found that an intensive parent outreach effort in urban areas involving an extensive telephone-based engagement interview, community consultants and staff

clinicians as members of school-based teams, and a flexible service delivery model including family and classroom services, resulted in a much higher rate of family participation than is typical.

To develop effective collaborations, the clinician should meet weekly or biweekly with the teacher and/or parent to provide instruction and coaching in behavioral management as well as continual monitoring and evaluation of the program. Older children should be included during some of these meetings to help set goals and determine appropriate and valuable rewards since involving the children in this way often enhances their motivation to participate and be successful in the program. For example, written contracts for a daily report card system (described in a later section) which indicate the different roles of teacher, parent and child (e.g., the teacher's role in monitoring child behavior, the parent's role in dispensing rewards, and the child's role in engaging in appropriate target behaviors) is a concrete method of ensuring consistent adherence to the plan over time. It is also important that parents understand that implementing behavior modification programs in the classroom is not an easy task for most teachers. We routinely encourage parents to be actively involved in their child's educational program, follow-through, and use positive reinforcement liberally with their child's teacher, just as the clinician should use positive reinforcement liberally with the parent and teacher.

General Behavioral Guidelines

Effective management programs link the nature of the problems to specific interventions; an approach of management by objectives. On a broad diagnostic level, interventions can be targeted to specific subtypes of ADHD and comorbid disorders. For example, there is evidence that children with the inattentive (ADHD-I), relative to combined type of ADHD show relatively slow cognitive processing, low levels of curiosity, interest, and enjoyment of learning, preference for less challenging tasks, preference for cooperative work environments, and greater reliance on external

criteria for determining success (Carlson, Booth et al. 2002). As a result, children with

ADHD-I may benefit from behavioral interventions which emphasize noncompetitive

external incentives for meeting specific goals and accommodations to tasks and

assignments to address slow work style (Pfiffner, 2003). They may also be more

likely to respond to as well as to worsen from inclusion in social skills training,

depending upon the mix of anti-social with non-antisocial children (Antschel &

Remer, 2003). With regard to comorbidity, children with ADHD and anxiety may

benefit equally from behavioral interventions as from stimulant medication, whereas

those with comorbid oppositional defiant disorder or conduct disorder may benefit most

from a combination of medication and behavioral interventions (Jensen, 2002).

However, in terms of classroom management, the diagnostic level of distinction can

only highlight general trends. For maximally effective behavioral interventions tailored

to the specific needs of the student, one must go beyond the diagnosis and identify

specific behaviors for which change is desired (e.g., deportment, academic problems,

social skills) as well as the function that these behaviors serve for the student. Effective

target behaviors should do the following:

- *Focus on teaching children a set of skills and adaptive behaviors to replace the
  problems* (DuPaul & Stoner, 2003). For example, a target behavior to address
  organizational problems may involve teaching the student to use and store materials
  in their desk or locker properly; an aggressive child may be taught to increase good
  sportsmanship skills. If positive alternative behaviors are not taught and only
  problem behavior is targeted for intervention, children may simply replace one
  problem behavior with another.

- *Include academic performance (e.g., amount of work completed accurately) rather
  than just on-task behavior because improvement in classroom deportment is often
  not paralleled by improvement in academic functioning (e.g., children who are*

sitting quietly may not be any better at completing their work). Increased attention to the development of academic skills (e.g., reading, writing, and spelling) in students with ADHD has also been stressed to prevent deficits in academic achievement commonly experienced by these students in their later elementary years.

- *Include common problem situations such as transitions between classes and activities, recess and lunch.* Teachers should consider very simple programs targeting these brief periods during the day.

More recently, investigators (DuPaul & Ervin, 1996; Ervin, DuPaul, Kern, & Friman, 1997) have studied methods to better link selection of target behaviors with intervention for ADHD through use of functional assessment. A functional assessment involves:

(1) *Carefully defining the target behavior in question so that the teacher is able to reliably monitor the behavior,*

(2) *Identifying antecedents and consequences to the behavior in the natural environment through interviews with teachers, parents and students and direct observation,*

(3) *Generating hypotheses about the function of the problem behavior in terms of antecedent events that set the occasion for the behavior and/or consequences that maintain it.* Potential antecedents include difficult or challenging work, a teacher direction or negative consequence, or disruption from another child. Potential consequences include teacher or peer attention, or withdrawal of a task or teacher request. Antecedent events need not immediately precede the problem behavior to be important in this analysis. Distal events, or those occurring minutes to hours before the target behavior, may have some role to play in increasing the probability of disruptive behaviors. For instance, arguments or fights with other family members at home or with other children on the bus ride to school may alter certain

affective states (e.g., anger, frustration) which may make the occurrence of aggressive or defiant behavior upon arrival at school more probable.

(4) *Systematically manipulating antecedents and consequences (those that can be) to test hypotheses about their functional relationship to the target behavior.* DuPaul and Ervin, (1996) summarize a number of possible functions of ADHD behaviors. The most common may be to avoid or escape effortful or challenging tasks (e.g., repetitive paper-pencil tasks). Others include obtaining teacher or peer attention, gaining access to an activity that is more reinforcing or interested to the child (e.g., fiddling with toys rather than completing work), or accessing pleasant sensory experiences (e.g., daydreaming).

(5) *Implementing interventions that alter the functional antecedents or consequences so that problem behavior is replaced with appropriate behavior.* For example, a child who is easily distracted by small toys or objects in his or her desk may be allowed access to those objects only after a specific amount of assigned work is completed.

Functional assessment provides a useful mechanism for tailoring interventions to individual children, one that goes well beyond a diagnosis of ADHD. This approach should help the clinician predict which of many behavioral interventions will have the greatest impact on changing specific problematic behaviors. This approach can also be useful for modifying existing behavioral programs. For example, Fabiano and Pelham (2003) report a recent case study in which a teacher had been using a behavioral intervention for a student with ADHD for several weeks yet the boy had yet to achieve his behavior goal and earn a reward. A consultant observed the boy in the classroom and based on a functional assessment made a few simple suggestions: provide rewards daily rather than weekly, provide immediate feedback to the boy when he violated classroom rules, make clear the criteria for the target behaviors to fewer than 3 violations of each rule. These changes to the program resulted in improvement in on-task behavior and reductions in disruptive behavior.

Intervention Principles:

Behavioral interventions for ADHD in the classroom include a range of modifications to the classroom environment, academic tasks, in-class consequences, homebased programs, and self-management interventions. Each of these are discussed below, but before discussing specific approaches, we will review a number of general principles that apply to the classroom management of ADHD children stemming from the model presented earlier (Chapter 7) that ADHD is likely an impairment in the self-regulation of behavior by its consequences and by rules, most likely owing to weaknesses in inhibition and executive functioning. These principles apply as much to classroom management as they did to parent training in child management at home (Chapters 12-14). This conceptualization of ADHD requires that:

1. *Rules and instructions provided to children with ADHD must be clear, brief, and often delivered through more visible and external modes of presentation than is required for the management of normal children.* Stating directions clearly, having the child repeat them out loud, having the child utter them softly to themselves while following through on the instruction, and displaying sets of rules or ruleprompts (e.g. stop signs, big eyes, big ears for "stop, look, and listen" reminders) prominently throughout the classroom are essential to proper management of ADHD children. Relying on the child's recollection of the rules as well as upon purely verbal reminders is often ineffective.

2. *Consequences used to manage the behavior of ADHD children must be delivered swiftly and more immediately than is needed for normal children.* Delays in consequences greatly degrade their efficacy for children with ADHD. As will be noted throughout this chapter, the timing and strategic application of consequences with children with ADHD must be more systematic and is far more crucial to their management than in normal children. This is not just true for rewards, but is especially so for punishment which can be kept mild and still effective by delivering it as quickly upon the misbehavior as possible – Swift, not harsh, justice is the essence of effective punishment.

3. *Consequences must be delivered more frequently, not just more immediately, to children with ADHD in view of their motivational deficits.* Behavioral tracking, or the ongoing adherence to rules after the rule has been stated and compliance initiated, appears to be problematic for children with ADHD. Frequent feedback or consequences for rule adherence seem helpful in maintaining appropriate degrees of tracking to rules over time.

4. *The type of consequences used with children with ADHD must often be of a higher magnitude, or more powerful, than that needed to manage the behavior of normal children.* The relative insensitivity of children with ADHD to response consequences dictates that those chosen for inclusion in a behavior management program must have sufficient reinforcement value or magnitude to motivate children with ADHD to perform the desired behaviors. Suffice it to say, then, that mere occasional praise or reprimands are simply not enough to effectively manage children with ADHD.

5. *An appropriate and often richer degree of incentives must be provided within a setting or task to reinforce appropriate behavior before punishment can be implemented.* This means that punishment must remain within a relative balance with rewards or it is unlikely to succeed. It is therefore imperative that powerful reinforcement programs be established first and instituted over 1 to 2 weeks before implementing punishment in order for the punishment, sparingly used, to be maximally effective. Often children with ADHD will not improve with the use of response cost or time out if the availability of reinforcement is low in the classroom and hence removal from it is unlikely to be punitive. "Positives before negatives" is the order of the day with children with ADHD. When punishment fails, this is the first area which clinicians, consultations, or educators should explore for problems before instituting higher magnitude or more frequent punishment programs.

6. *Those reinforcers or particular rewards which are employed must be changed or rotated more frequently with ADHD than normal children given the penchant of the former for more rapid habituation or satiation to response consequences, apparently*

rewards in particular. This means that even though a particular reinforcer seems to be effective for the moment in motivating child compliance, it is likely that it will lose its reinforcement value more rapidly than normal over time. Reward menus in classes, such as those used to back up token systems, must therefore be changed periodically, say every 2 to 3 weeks, to maintain the power of efficacy of the program in motivating appropriate child behavior. Failure to do so is likely to result in the loss of power of the reward program and the premature abandonment of token technologies based on the false assumption that they simply will not work any longer. Token systems can be maintained over an entire school year with minimal loss of power in the program provided that the reinforcers are changed frequently to accommodate to this problem of habituation. Such rewards can be returned later to the program once they have been set aside for a while, often with the result that their reinforcement value appears to have been improved by their absence or unavailability.

7. *Anticipation is the key with children with ADHD.* This means that teachers must be more mindful of planning ahead in managing children with this disorder, particularly during phases of transition across activities or classes, to insure that the children are cognizant of the shift in rules (and consequences) that is about to occur. It is useful for teachers to take a moment to prompt a child to recall the rules of conduct in the upcoming situation, repeat them orally, and recall what the rewards and punishments will be in the impending situation <u>before</u> entering that activity or situation. <u>Think aloud, think ahead</u> is the important message to educators here. Following a three step procedure similar to that used in parental management of children with ADHD in public places (See Chapter 12) can be effective in reducing the likelihood of inappropriate behavior. As noted later, by themselves such cognitive selfinstructions are unlikely to be of lasting benefit but when combined with contingency management procedures can be of considerable aide to the classroom management of ADHD children.

8. *Children with ADHD must be held more publicly accountable for their behavior and goal-attainment than normal children.* The weaknesses in executive functioning associated with ADHD result in a child whose behavior is less regulated by

internal information (mental representations) and less monitored via self-awareness than is the case in normal children. Addressing such weaknesses requires that the child with ADHD be provided with more external cues about performance demands at key "points of performance" in the school, be monitored more closely by teachers, and be provided with consequences more often across the school day for behavioral control and goal attainment than would be the case in normal children.

9. *Behavioral interventions, while successful, only work while they are being implemented and, even then, require continued monitoring and modification over time for maximal effectiveness.* One common scenario is that a student responds initially to a well-tailored program, but then over time, the response deteriorates; in other cases, a behavioral program may fail to modify the behavior at all. This does not mean behavioral programs do not work. Instead, such difficulties signal that the program needs to be modified. It is likely that one of a number of common problems (e.g., rewards lost their value, program not implemented consistently, program not based on a functional analysis of the factors related to the problem behavior) occurred.

A variety of effective management programs can be developed with the above principles in mind; the challenge lies in designing programs that can be easily integrated with classroom instruction and are practical to use. In an approach referred to as Parallel Teaching (Pfiffner, 1996), social behavior and academic material are taught "in parallel" throughout the day; ongoing instruction is blended with behavior management in the context of a structured classroom environment to facilitate a high state of learning readiness. This blending occurs by scanning the classroom every one to two minutes and inserting very brief interventions while simultaneously delivering the lesson plan or otherwise interacting with students. Interventions might be statements of praise to students who are on-task, redirections to those off-task, nonverbal gestures, such as a thumbs-up sign or an affectionate squeeze of the shoulder, or questions about the lesson with the intention of involving students in the learning process. Managing student behavior in this manner better allows the teacher to issue consequences immediately, consistently, and frequently, than if consequences are only

administered after behavior is out of control or only for exceptional behavior. The efficacy of embedding teacher's managerial statements into ongoing teaching was studied by (Martens & Hiralall, 1997) with preschool children. They demonstrated that small changes (in this case, greater use of praise in scripted sequences) could be easily incorporated into ongoing teaching interactions with dramatic improvement in the student's behavior. In addition, once the skills are learned, it generally does not require any more time or resources than procedures the teacher is currently using. Often, teachers of children with ADHD are spending a great deal of time attending to negative behavior. This approach simply involves the teacher altering his or her pattern of interaction from attending to negative behavior to attending to positive behavior. Again, it is the timing of the attention that is so important to its success in managing behavior. A range of behavioral interventions, reviewed below, can be embedded during teaching activities; these interventions should be considered a critical part of effective teaching, rather than a time-consuming adjunct. However, behavioral aides in the classroom will likely be necessary to implement interventions for students with more severe symptoms.