

Understanding and Working With Attention Deficit Disorder Students

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From a holistic perspective the term attention refers to a student's capacity to focus, direct and sustain their attention on a particular stimulus within their environment for a significant period of time. The development of students' attention spans develops progressively from the time they enter school. From the beginning some students have more innate ability to pay attention than their peers. One may think of attention capacity as running from high to low with all learners falling somewhere along the continuum. Different issues hold varying levels of interest for students, and their attention spans will vary accordingly. Unfortunately, for some students the development of their attention does not progress normally. These students frequently need education accommodations.

Students' ability to attend to classroom instruction and assignments is critical if they are to learn the material being presented. Duhaney (2003) declares that a lack of adequate attention is predictive of reduced academic engaged time which leads to lower grades and places students at risk of school failure. Penkman (2004) agrees and further asserts that adequate attention capacity is essential for academic success. In short, a student's attention span is an essential ingredient for learning. Unfortunately, Brown (2007) indicates that 7.8 % of U. S. Children between 4-17 are affected with significant attention problems. Typically boys outnumber girls 3 to 1 however, it is also perceived that the female population is under identified.

The Diagnostic and Statistical Manual of Mental Disorders (4th edition) (1994) organizes attention-deficit and disruptive behavior disorders according to a variety of subtypes. One particular division is the "predominately inattentive" type or more commonly referred to as simply Attention Deficit Disorder (ADD). The subtype ADD will be the focus of this paper and will be examined from the perspective of: characteristics, social cognition, etiology, co-morbidity, medications, teachers' dispositions, and instructional modifications.

Characteristics

While problems of attention are not new, our ability to describe and understand the problems of those individuals with attention deficit disorders (ADD) is improving. Hartman (1997) posits that an ADD problem is the inability to stop receiving messages not the inability to sort messages out. These individuals experience a dysfunction that is not necessarily tissue damage but an impairment of the brain's cognitive management system or what is sometimes referred to as executive functions. Brown (2007) suggests ADD affects student's capacity to: "organize and get started on tasks. Attend to details and avoid excessive distractibility. Regulate alertness and processing speed. Sustain and, when necessary, shift focus. Use short-term working memory and access recall. Sustain motivation to work. [And] Manage emotions appropriately" (p. 22).

Common behavior indicators of children with this difficulty include being frequently distractible, having excessive fidgets or squirms, experiencing difficulty following instructions, often taking on multiple tasks at one time but never completing them, repeatedly not listening to what is said, often losing things, impatience, and regularly needing immediate gratification.

ADD students commonly disregard the long-term consequences of their actions because they are so intent on the moment and its rewards. Typically they are disorganized and have a tendency to be messy because they skip from activity to activity, too impatient to clean up the debris from their last endeavor.

While ADD students are easily distracted and frequently have difficulty in listening, they are capable of shorter and potentially intense attention episodes. For example, an ADD student may be capable of intense focusing while playing a computer video game. Many will be able to comprehensively focus during an athletic event. At both home and school ADD students typically exercise poor study skills and experience difficulty working independently. It is not unusual for other students to frequently perceive them as “spacey” because of their tendency to tune out their surroundings. Their difficulty in focusing, concentrating, attending to tasks, and sustaining attention has obvious academic implications. Hallowell and Ratey (1994) indicate ADD students may be daydreamers sitting in the back of their classrooms looking out the window and engaging in long thoughts or they may be the highly imaginative, who are building bridges to the unknown in the midst of conversations. They may be writing plays in their minds while not doing their daily school work. These students steal away without the noisemaking or bark of their hyperactive brethren, but they slip away just the same.

Social Cognition

Difficulty in handling the nuances of social situations sometimes described as social cognition may cause ADD students to experience peer difficulties, rejection, and isolation. For example, these students commonly experience difficulty following conversations, picking up on subtle clues such as the raising of the eyebrows or changes in pitch, stress, and juncture patterns the paralanguage of speech. The impact of these

difficulties tends to be a deteriorated self-concept and reduced self-esteem.

Diamond (2005) observes that there is a substantive difference in students with Attention Deficit Hyperactive Disorder (ADHD) and those with the ADD subtype regarding social issues. While ADHD children tend to lack self-consciousness, those with ADD are often overly self-conscious. The researcher notes that while both groups tend to experience social problems the reasons are different. ADHD students are prone to alienating others by butting in, failing to wait their turn, taking others things, and in general acting without adequate consideration of others feelings. Conversely, ADD students are frequently too passive, shy, or withdrawn. This introverted demeanor may result in the perception of others that ADD students are aloof, disinterested or unresponsive.

Within the school context ADHD students’ disruptive behavior is co-morbid with conduct challenges. However, ADD students display a marked absence of externalizing disorders. They experience heightened internalized disorders and tend to be isolated socially.

Etiology

The precise cause of ADD is not known yet there is a strong tendency for it to run in families. ADD students routinely have a parent, grandparent, sibling or other family member with a similar developmental history. While an explicit genetic link has not been identified other physiological issues are being explored. Some medical experts hypothesize that ADD students have a shortage of neurotransmitters (the chemicals dopamine and serotonin) which are responsible for neurosensory messages. When we concentrate our brain produces additional neurotransmitters, which allow us to focus on one variable while blocking out competing stimuli.

Penkman (2004) describes two branches of the ADD neurological phenomenon. In the first

case, case the symptoms first appear by the time the student is motorically independent. In the second the symptoms can develop insidiously over time without an explicit demarcating trauma. Penkman explains that attention can be viewed as a supportive or core cognitive function, with attention being essential for higher cognitive operations to take place. Information cannot be processed or remembered nor can problem solving occur if the student cannot first attend to these tasks. Penkman does acknowledge that implicit learning can occur without direct attention.

As far back as 1986 Baddeley introduced the term dysexecutive syndrome for adults who experienced disorganization, forgetfulness, and inattention. Initially the dysexecutive syndrome was used with reference to adults. Now Diamond (2005) contends that the inattentive subtype of ADHD provides an example of the syndrome in children. Brown (2007) has developed a model describing six strands of executive function with each strand representing a cluster of related cognitive functions. In addition, the six strands interact in a myriad of combinations and include:

- Activation: organizing, prioritizing and activating for work.
- Focus: focusing , sustaining, and shifting attention to tasks.
- Effort: regulating alertness and sustaining effort and processing speed.
- Emotion: managing frustration and modulating emotions.
- Memory: using working memory and accessing recall.
- Action: monitoring and self-regulating action. (p. 24)

Brown underscores that these functions do not work continuously at optimal levels for anyone. He stipulates that everyone periodically has some degree of difficulty using the functions. However, ADD children experience significantly greater difficulty using the functions when compared to their age appropriate peers.

Brown (2007) further asserts that scientific evidence now demonstrates that basic elements of the various strands emerge in early childhood, with the complex nature of the networks not being fully operationalized until the late teens or early twenties. This helps to explain Penkman's (2004) notion of the two branches cited above. For some students we can identify ADD impairments in preschool. Others students function normally during early school years only initializing difficulties with the challenges of middle school while other students reach high school before they are "unable to cope with the ongoing conflicts and demands of study, classroom performance, homework in several subjects, and family and social interactions" (Brown 2007, p. 26).

Prenatal drug and alcohol exposure are suspected contributors to the apparent rise in the number of ADD students. While substance exposed children clinically exhibit a number of neurological traits that are identified with ADD, clinical research has not established a causal relationship. Other factors which have been widely discussed but have not been substantiated by research include: lead poisoning, diet, complications in pregnancy, and or trauma at birth.

Co-morbidity

It is not uncommon for the problems of ADD children to be associated with other types of disabilities. Hallahan and Kaufman (2000) posits that nearly one-third of all those diagnosed with learning disabilities also have attention deficits. Additionally, Brown (2007) estimates that approximately 50 % of all ADD students have at least one or more specific learning disabilities. Diamond (2005) points out that many ADD have difficulty with their rate of reading, experience language deficits, along with mental mathematical calculation problems. However, Diamond does observe that there are potential tradeoffs between linguistic and spatial skills. Many ADD students have excellent spatial reasoning and artistic ability.

From a nonacademic perspective, anxiety, depression, bipolar, agitation or mania, substance abuse, high risk behavior, dissociative states, borderline personality features, conduct disorder, and obsessive-compulsive disorder have been cited by Hallowell and Ratey (1994) as associations with ADD.

Medications

There are two primary prescriptive treatments used in association with ADD. As stated earlier the suspected underproduction of neurotransmitters in the brain may be treated with bicyclic or tricyclic prescription drugs. A second treatment is intended to stimulate the student's nervous system with a low to mild dose of methylphenidate (Ritalin) and amphetamines (Adderall) which can stimulate the nervous system thus helping the student to focus. While both ADHD and ADD students use these same medications the dosage level is quite different. ADHD students are typically provided high level dosages intended to calm them. ADD students are prescribed much milder dosages which are intended to stimulate their nervous systems. As students enter adolescence their body chemistry can change and their prescriptive levels will need to be adjusted.

Richardson (2005) observes that as ADD students grow older they may turn to addictive substances including, caffeine, nicotine, prescription tranquilizers, pain medication, alcohol, marijuana, heroin, and street amphetamines to soothe their restless brains and bodies. This engagement in substances which ADD students perceive as improving their abilities or help them feel better or even numb their feelings is referred to as self-medicating. Richardson indicates that self-medicating can feel comforting at first but in the long run it is like putting out a fire with gasoline. Substance abuse can and often does become an issue for these students according to Richardson.

Medication is not curative, Brown (2007) observes they help alleviate symptoms, but only while the medications are taken. Unfortunately many students fail to take or be given their medications. A full treatment of the prescriptive treatment of ADD is beyond the scope of this paper.

Teachers' Dispositions

Dealing with the challenges of ADD can be perplexing and exasperating for the student, for their teachers, and their parents. The first step to helping these students is to recognize that they have probably experienced an inordinate amount of frustration and both internal and external attacks on their sense of self-esteem and self-worth.

Given budget issues, the growing number of identified special education students and the underfunding of special education, the most common setting for ADD students is the inclusion regular classroom. Teachers in regular classrooms need to be flexible and committed to working with ADD students on a personal level. These teachers need to be aware of the biological/physiological nature of ADD, and it is imperative for them to establish a supportive working relationship with the student's parents or home caregivers.

Both Diamond (2005) and Brown (2007) remind teachers of the situational specificity of the symptoms.

These researchers observe that almost every ADD student has periods of excellent executive functioning. Video games and athletic events, for some, can serve as examples of this normal functioning. Consequently, both teachers, and parents or care givers have to guard against the rationale of ... "if you can focus in one place, then why can't you pay attention in the classroom". The problem is not one of will power but "a chronic impairment in the chemistry of the management system of the brain" (Brown, 2007, p. 26).

Diamond (2005) posits that differences in students' working memory directly relates to their differences in selective attention. The same functions that help students selectively attend to stimuli also help them selectively keep their minds focused on the information that needs to be held onto in working memory.

Beyond the dimension of distraction, Diamond (2005) hypothesizes that ADD students may be easily bored. This introduces an issue of motivation. They easily lose interest in one activity and their attention drifts to something else. Consequently, we see students abandon one assignment before completion and moving on to another activity. Diamond suggests that "it is not so much that external distractions derail them as that they go looking for external (or internal) distractions because their interest in what they are supposed to be doing, or had started has dwindled" (Diamond 2005 p. 819). What can help these students stay focused? Diamond (2005) contends that the answer is challenge and risk as qualities that literally get ADD students adrenaline pumping and allows them to sustain their attention to elicit optimal performance. She suggests that a faster presentation rate can potentially assist attention spans.

Computer and video games (which children with ADD can play for hours and hours) are fast paced, often with imminent danger keeping arousal high. Such games often rely on the execution of well-practice associations between presses and game features or well-practiced sequences of button presses, which children with ADD have no difficulty retrieving from their intact long-term memory and procedural memory. (Diamond, 2005 p.819)

ADD students can more readily burn out when subject to activities that require slower speed of processing. These students have difficulty focusing their attention on all the details. They need a greater infusion of adrenaline. This is why the amphetamines (Adderall) and meth-

ylphenidate (Ritalin) which can stimulate the nervous system and help the students to sustain attention. While ADD students can be appropriately motivated on a given activity, it is hard for them to sustain that level of attention over multiple activities.

ADD students' fluctuation in focusing, concentrating, attending to tasks and sustaining attention can significantly undermine their academic performance. Teachers need to be willing to put forth the extra effort to be supportive and make the changes and accommodations as needed for these students.

Instructional Modifications

All students profit from what is known about effective instruction. ADD students have additional needs of which equity and excellence are two essential characteristics. Appropriate training and skills to facilitate ADD students learning is needed by classroom teachers. Teacher educators need to work with both pre-serve and in-service teachers to understand how to best help ADD students rather than becoming frustrated with and distracted by them.

The affective component of the teacher - ADD student interaction is very important. These students respond best, like most students, to an environment with shared respect with their teachers. Teachers need to both develop and maintain positive perceptions of all students they work with, but this is critical for success with ADD students. Effective teachers make use of the time when students come into their classrooms to greet as many students as possible, but especially ADD students, by name and communicate that they are glad they are there.

When discussing the nuances of the ADD impairment with students and their parents Patricia Anderson and I developed a series of tips for teachers to consider (Buttery & Anderson, 1998, 1999; Buttery, 2001).

- Tell both the student and parent(s) or care givers that you are concerned for them and want to help them be successful. They need to know you are on their side and intend to help them.
- Use an accurate and appropriate vocabulary in explanations.
- Consider using the metaphor of near sightedness in an explanation. Near sightedness can be corrected with glasses. Medications can sometimes help like glasses but they don't permanently remove the challenge.
- Be prepared to answer student's questions, admitting when you don't know the answers.
- Reassure the student that ADD is NOT retardation, nor stupidity, etc.
- Use positive role models from the family or from history (Thomas Edison).
- Think of ADD as a hurdle on a tack, it needs to be leaped and then continue forward. Stress that it is not a road block.
- Caution the student to avoid using ADD as an excuse. Encourage them to think of ADD as an explanation for why certain kinds of tasks and activities are difficult. Insist that students with ADD still take responsibility for what they do. Help them avoid developing the mistaken goals of avoidance or inadequacy.
- Educate others about ADD. Parents, students in classrooms, extended family members can be advocates for the ADD student. However, keep in mind cultural values, for example, within the traditional Asian culture public identification of student problems can lead to parental humiliation.
- "Coach" the student on how to answer questions from others about ADD. Encourage

them to tell the truth. Role-playing conversations with questions may be a helpful activity.

Each semester in my classroom management course we discuss my check book theory. I hold up my check book, and we talk about the fact that neither they nor I can write more checks than there are funds in the account. I encourage them to think about their students in a similar way. Each student is an account and everything encouraging, warm, and positive counts as deposits. Desists, reprimands, and negative comments are withdrawals. If they don't want to go bankrupt with their students, they need to remember the ratio of positive to negative comments that they generate. A classroom milieu that is warm can allow teachers to use selected behavioral techniques such as social approval, ignoring minor issues that do not affect learning, and even the use of disapproval when essential to help shape positive behavior. If teachers desire to tender confident, secure, and motivated students, they must remember their role as a model through which positive feelings and attitudes are communicated. "What teachers help plant in the minds of their students will grow regardless of whether it is ragweed or roses" (Buttery & Reitzammer, 1986 p. 45).

Being able to catch and hold students' interest and attention is not an essay task. It represents an immense challenge for teachers, and they need to develop a repertoire of techniques. Here are some suggestions to help sustain students' attention (Buttery, 2001).

- Use signaling techniques to indicate you are about to start a lesson or resume an activity.
- Communicate excitement and model enthusiasm about the upcoming lesson if you want to capture student interest.
- After making selected statements have students clap twice if they agree thus facilitating involvement.

- Vary the tone and pitch of voice. Try making a loud command for example, with elementary students “Ears! Ready! Freeze! Followed by a few seconds of silence before proceeding in a normal voice to give directions.
- Use eye contact and physical proximity, the classroom should be arranged such that students are facing the teacher when instructions are being given. Student seating should be such that the teacher has ready accessibility. It is frequently helpful to have ADD students in the front of the room so that a teacher can simply tap or put their hand on the students desk as private method to recapture attention.
- Many teachers ask the class an interesting or speculative question to generate discussion and interest in the upcoming lesson. While teachers generally prefer to first ask a question and then select a respondent so that all students have to prepare an answer it is occasionally helpful to break this guideline and call the ADD students name first as a way of alerting them that they are about to be called upon.
- Sometimes props such as a unique hat or music are helpful in getting students attention.
- Use mystery. Keep an object relevant to the upcoming lesson in a box, bag, or even a pillowcase. This technique allows students to make predictions and can generate excellent discussions and writing activities.
- Use response cards so that all students have to respond to a question.

Academically, students with ADD have major problems with organization and study skills. Structure becomes a key element in paving the road to an improved daily life for ADD students. Without a sense of structure those with ADD experience chaos. Structure gives shape and

direction to creative energies. Key elements of structure include tools like checklists, reminders, notepads, appointment books, filing systems, bulletin boards, schedules alarms clocks and watches and computer aids. Structure provides a sense of external controls to compensate for the unreliable internal controls. The key is to help the child find things that work. Anderson and I developed a series of key points for teachers to consider when attempting to help ADD students sense of structure and organization (Buttery & Anderson, 1998, 1999; Buttery, 2001).

- Define the problem. Identify exact locations or situations where problems frequently occur.
- Make a list of specific solutions for each problem area.
- Use concrete reminders such as lists, schedules, clocks, etc.
- Provide incentives for encouraging and rewarding success. ADD students need high doses of encouragement and opportunities to generate success. Positive reinforcement and behavior modification techniques/incentives can be employed for example, table points for being attentive and on task, individual charts, contracts, and cards for teachers to give points, stickers, initials etc.
- Monitor and check student progress during seatwork.
- Give feedback frequently. Help students with ADD to see what they are doing as they are doing it—in both positive and negative instances. Explain to the student how they can identify and correct their own mistakes.
- Place responsibility on the ADD student whenever possible. Help them to learn to accept responsibility for their actions.

- Use praise and positive comments as often as possible. Students with ADD often blossom under the warmth of praise.
- Find extra helpers, supporters, or tutors to assist with assignments if necessary. Parents and teachers should avoid assuming too many roles in the lives of students with ADD. Parents or care givers who have to constantly correct their children, provide academic support, and clarify expectations can strain their relationship with their children.
- Provide assistive devices or plans that make tasks easier. An alarm clock to designate a 20-minute work session, computer to reduce handwriting tasks, or the use of earphones to increase concentration may be workable strategies of assistance.
- Teachers should consider reducing the amount of written assignments. It takes additional effort for ADD children to write in comparison to other children. What may take the regular child 20 minutes to do the ADD child may take hours. This is also true of homework. The parents of ADD students frequently complain about the inordinate amount of time required for their children to complete homework assignments.
- Negotiate, don't struggle with children with ADD.

In conclusion, when teachers make a personal commitment with open hearts and display a willingness to do what is in the best interest of ADD students those children can learn to compensate for a problem that has caused them frustration and heartache. Seeing these students overcome a major hurdle of life can be very gratifying to teachers and the students they have helped along the way. When considering choices teachers should keep in mind the classic quotation from Haim Ginott (1972).

I have come to a frightening conclusion. I am the decisive element in the classroom. It is my daily mood that makes the weather. As a teacher, I possess tremendous power to make child's life miserable or joyous. I can be a tool of torture or an instrument of inspiration. I can humiliate or humor, hurt or heal.

In all situations it is my response that decides whether a crisis will be escalated or de-escalated, and a child humanized or de-humanized. (p. 16)

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