Special Learning Considerations for Children with Attention Deficit Hyperactivity Disorder

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Abstract

Children who have attention deficit hyperactivity disorder (ADHD) face difficulty in classroom situations due to their lessened ability to learn by conventional methods. Children with ADHD excel in some tasks, but perform poorly in others because of differences in the ways that their brains acquire and retain information. Slower learning pace, memory issues, decreased motor skills, and lack of sustained focus contribute to lower academic functioning within the ADHD population. Ability is not decreased, however, and considerations can be made to ensure that the quality of education for children with ADHD is as high as for typical developmental (td) children.

Children with ADHD face many challenges because they do not learn in the same way that typical development (td) children do. Problems with inattention, lack of inhibition, and increased motor function cause difficulty within the classroom setting and may disrupt learning for not only the child with ADHD, but his or her classmates as well. Children with ADHD have different brain wiring, so they process and store information differently than td children. They lose their focus more easily and stay off-task longer than most other children in the classroom. Slower language comprehension causes delays in communication, but does not affect understanding of the information provided. They may have excellent verbal communication, but have serious deficits in nonverbal communication. They also have difficulty reading social cues because dividing attention in a highly stimulated environment, in addition to working memory deficits, depletes recognition of these cues. Because of these obstacles to learning, special consideration for alternate learning methods and increased time for tasks should be given to children with ADHD, in order to enable them to reach their full potential in academics.

Children with ADHD may have high IQs and score in the upper percentile for verbal communication skills, yet they may not have the ability to express the language of nonverbal communication (Melillo, 2010). There may be a significant point difference between the two, with genius scores and sizeable deficits found within the same individual. This point difference causes a type of disconnect that considerably affects the way the individual functions. While brain function might excel in some areas, the deficits in other areas create a distorted picture, which exhibits as poor functioning. Children with ADHD who function poorly both in and out of the classroom are aware of their difficulties, but still lack the ability to change (Klimkeit et al., 2006). This awareness can translate into psychological and emotional problems, which further affect a child's functioning within a school environment. "Fitting in" with other children at school fulfils a basic social need (Cherry, n.d., para. 1). Lack of such belonging may lead to frustration and to deviant behaviours (Brook, Brook, Zhang, & Koppel, 2010). Providing alternate ways of evaluating learned material, such as use of oral tests, could enable children with ADHD to articulate ideas that would otherwise be lost. This strategy would normalize the education and allow them to contribute to class development as well as to maintain their self-esteem due to their academic success.

Staying focused on the task at hand is a known difficulty for children with ADHD (I. McIntyre, psychiatrist, personal communication, May 24, 2012). What has been less well known is the very rapid repeated oscillation from attention to inattention (Rapport, Kofler, Alderson, Timko, & DuPaul, 2009). Differences between children with ADHD and td children include a faster loss of focus for children with ADHD, plus a longer time of unfocused behaviour. After the time of unfocused behaviour, focus does return to the required task. However, focus is again lost after a shorter period of time in comparison to td children (Rapport et al., 2009). Focus becomes even

more difficult in an active environment. Staying on track is a necessary function for any human to learn anything. For example, if A plus B equals C, but B was missed because the student saw an airplane through the classroom window, the equation will not be complete. This could be one reason that children with ADHD have major deficits in their learning, as it may not be noticed that important information was missed. Any concept that builds on a formerly learned concept is at risk. Subjects such as math and spelling may become frustrating, as they depend upon a solid understanding of basic knowledge in order to advance into more complex ideas and applications. A good strategy to use is to check a child's understanding of the concepts within a short amount of time that the lesson was learned. Any information gaps can then be filled before the deficit becomes a major handicap.

Children with ADHD have slower language comprehension of complex sentences, as compared to td children (Wassenberg et al., 2010). Although comprehension is delayed, understanding remains within normal range. Complex language is often used in the classroom to give instruction. Several instructions may be given at one time. Due to a delay in receiving and transmitting within their brains, children with ADHD may appear to ignore or misinterpret instruction. The child may not realize that he or she did not receive the entire communicated message. Furthermore, the child may not ask for the instruction to be repeated in the classroom due to normal social power hierarchy among teachers and students, or because of possible embarrassment in front of classmates. Strategies such as giving one simple direction at a time, giving written instruction, or pausing between instructions, would give the child with ADHD more time to process new information. Devices such as e-readers and ipads with a "read text" feature may offer children with ADHD a way to connect complex sentences with individual words as they hear them (A. Tavares, psychiatrist, personal communication, November 8, 2012). These devices and their content can be tailored for the individual, according to speed, reading ability, and personal preference.

Working memory deficits, plus a stimulating environment, contribute to an inability to recognize and comprehend social cues (Kofler et al., 2011). Central executive is one of three parts of working memory. It is this function that allows td children to "read" other people and react appropriately to their words and gestures. A dysfunction in central executive function occurs in children with ADHD, which causes quick decay of immediate memory, and allows excessive irrelevant information to interfere (Kofler et al., 2011). Thus, for a child with ADHD, holding a normal conversation with a peer or teacher is a great deal of work. It requires an exhausting amount of attention, possibly more than that child is capable of at that time. For example, when a dialogue ensues, it contains verbal messages along with nonverbal messages. These may be subtle or not-so-subtle cues. If concentration is lacking from either party, some cues are missed and communication starts to deteriorate. With enough deterioration or interference, the message is lost. For children with ADHD, interference can consist of environmental stimuli or stimuli from their own bodies and minds. These could be distractions such as shiny objects, movement in the environment, or the children's own thoughts on a subject totally unrelated to the situation or subject matter. Children with ADHD best understand short, precise messages, and benefit from written instruction (B. L. Geeky, community school counsellor, personal communication, November 24, 2011).

Spatial learning, when used in conjunction with textual learning within the general population, serves to increase retention of information (Caterino & Verdi, 2012). However, visual learning, followed by reading, shows no advantages for persons with ADHD. Caterino and Verdi (2012) found that ADHD-diagnosed persons did not have increased learning when exposed to these two different types of information on common subject matter. In fact, they noted that the extra information provided by the spatial display actually increased anxiety and decreased concentration, and therefore limited learning. Different methods of learning information became a burden, rather than its intended purpose, which was to serve as a learning tool to retain information more easily. This burden may be due to another kind of working memory deficit experienced by children with ADHD, which limits the amount of information that can be gained

and retained in a certain amount of time. Therefore, the limit of productivity is reached faster for persons with ADHD than for td persons, though the limit is not less. The ADHD population may benefit from decreasing the amount of learned text within a time span, from summarizing, or from simplifying spatial information.

Handwriting skills are essential to academic success (Tucha & Lange, 2005). Because automation of handwriting is affected by both visual and mental control, the functional physical deficits in motor skills and focus issues can interfere with the handwriting skills of children with ADHD. Fluency of handwriting, neatness, and legibility are important factors in completing classroom work and homework. Children with ADHD have difficulty completing assignments on time and are known to have a high rate of dysgraphia (Nicholas, 2009). Although other factors also contribute to non-completion of assignments, handwriting offers a measurable evaluation of a child's functioning. Handwriting analysis is a scientific method that can evaluate different aspects of a child's script. Rosenblum, Epsztein, and Josman (2008) reported major differences between the handwriting of children with ADHD when they used stimulant medication and when they did not. Children using stimulant medications had markedly better penmanship. Another noteworthy discovery is that children with ADHD have difficulty timing fine motor applications (Nicholas, 2009). Since fine motor skills are necessary for legible, accurate script, it would seem logical that writing would be messy, with poor formation of letters, and poor readability if timing and accuracy were diminished. Nicolas (2009) pointed out that complex stories with detailed story lines may be told orally by children with ADHD, but those same children may scarcely be able to write a coherent, legible paragraph. Recommendations for improved assignment output and faster completion include dictation methods (live or recorded) or use of a typing mechanism (ipad or laptop).

Daily life for children with ADHD is full of opportunity to build success or to break down self-esteem. Each life experience affects the way that they perceive themselves, whether it is a view of success or of failure. Great care must be taken to support them in and out of the classroom in a way that allows them to use their natural ways of thinking. Persons with ADHD are particularly susceptible to depression, anxiety, and substance abuse (Diep, 2011). These issues may be due to the added pressures that children with ADHD feel when they realize that they are different from their peers. A stable environment with appropriate boundaries is essential for any child. It is imperative that children with ADHD receive the same, in order to reach their full potential. It is unnecessary to provide a "free ride" or dismiss them as incapable. Children with ADHD simply need a different toolbox from which to draw, and a supportive someone who has the skills to use those tools.

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About the Author

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