Why are attention deficits important to address in college transition students?

It is now estimated that 4% of all American adults suffer from Attention Deficit Hyperactivity Disorder (ADHD) (Szegedy-Maszak, 2004). The number of students entering colleges with attention deficits has been estimated at anywhere from 1% to 20%, but most frequently, researchers estimate that 1 to 5% of students transitioning to college suffer from the disorder (Richard, 1995; Jones, Kalivoda & Higbee, 1997). College transition students with attention deficits often experience debilitating problems with attention, distractibility, organization, self-regulation, and mood (Kane, Mikala, Benjamin & Barkley, 1990). These students often need extra assistance organizing their time and the material taught in class to help them experience educational success.

The increasing cognitive demands of college transition and postsecondary education put these students at high risk of poor academic performance and a lack of persistence (Barkley, 1990; Fargason & Ford, 1994; Nadeau, 1995; Richard, 1995). The transition to college can cause students with attention deficits to become overwhelmed by the pressures of academic deadlines and the heavier workload, leading to confusion and frustration. If not addressed, these problems can lead to high drop out rates for these students. Research has shown that only 5% of students with attention deficits will complete a degree program compared to over 41% of students without such deficits (Barkely, 1990).

What are the causes of “attention deficits?”

Most researchers now agree that the causes of attention deficits stem mostly from neurobiological problems (Hallowell & Ratey, 1994). According to the most common theory, students with attention deficits have impaired functioning of the naturally occurring chemicals (called neurotransmitters) in the brain (Ballard et al, 1997). These neurotransmitters carry messages to different parts of the brain, allowing cells in the brain (or neurons) to communicate with each other. Most researchers believe that in individuals with attention deficits, there is a chemical imbalance in the stimulant neurotransmitters that control attention, known as dopamine and norepinephrine (Ballard et al, 1997; Jones et al, 1997).

What are the effects of ADHD on college transition students?

Problems of attention and impulsivity can prevent these students from physically organizing and planning their time and study space in ways that would allow for academic success. College transition students need to be able to schedule their courses, appointments, and study time, to plan and focus on assignments, and to use effective
study strategies. However, students with ADHD experience difficulty structuring their time and concentrating on tasks long enough to organize, plan, study, establish a routine, and complete assignments (Jones et al, 1997; Nadeau, 1995). The prospect of even beginning a classroom assignment can be overwhelming because of their inability to organize their time and effort, to create a productive space, and to use strategies to approach their work (Nadeau, 1995; Willis, Hoben & Myette, 1995).

**How can organizational strategies help these students?**

The chemical imbalances in their neurotransmitters cause students with ADHD to experience difficulties paying attention, shifting attention, selecting relevant information, using goal oriented strategies, organizing, and ignoring outside stimuli (Ballard et al, 1997; Mercugliano, 1998). Consequently, class material becomes poorly organized mentally or is filed in the brain in a random fashion (Nadeau, 1995; Willis et al, 1995). In addition to any other treatments students with attention deficits may receive such as tutoring, medication, and accommodations, teachers can also help these students by teaching them specific methods of organizing class material and information (Barkley, 1990; Kane et al, 1990; Mercugliano, 1995). It should be noted that the following strategies are useful for helping all learners become more efficient in their studies. In students with ADHD, they may make the difference between academic success and failure.

**Calendars and Planners:**

A schedule that is created by the student with the guidance of the teacher can assist in prioritizing time and in planning a suitable course load, hours of productivity, and specific objectives (Willis et al, 1995). In these daily calendars, students should be taught to write all appointments, commitments (including personal obligations or social activities), due dates, and tests for each day and then to cross off each task as it is completed. This strategy has been shown to prevent procrastination and to increase organization and task completion (Hallowell & Ratey, 1994; Schwiebert et al, 2002).

**Notebook Organization:**

The use of color coded notes has been demonstrated as a successful strategy for improving the organizational skills, comprehension, and retention in students with attention deficits (Hallowell & Ratey, 1994). Instructors can show students how to keep all notes organized by color in a three-ring binder with tabs to divide specific elements of class such as homework, class work, lectures, and so on (Willis et al, 1995). The instructor or individual students can choose a specific color to be dedicated to each element of class; for example, the syllabus for the course might be in the red section, homework in the green section, and class notes in the yellow section.

**Note-taking Strategies:**

Students can be taught to organize material within these notebooks with note-taking strategies like summarizing the reading or annotating the text and then recording the annotations in the appropriate section of the notebook (Jones et al, 1997). Students can also be taught to take notes on their own thoughts while listening to a lecture or
discussion to improve the comprehension and retention of information (Hallowell & Ratey, 1994; Schwiebert et al, 1998). If particular students find it difficult to concentrate on listening and processing while taking notes, they may qualify for note-taking accommodation (Richard, 1995). Instructors can then adapt the strategy by having these students review notes taken by their note-taker after class and then write reactions to the content in their notebook to encourage engagement, comprehension, and retention of class content.

**Visual Organizational Maps:**

Visual organizational maps such as flowcharts, clusters, lists, and outlines can help adult students with attention deficits to organize class content and their own ideas. Students can plug their ideas into organizational frameworks provided by the instructor and can eventually learn to generate these maps themselves (Oliver et al, 2000). The teacher can provide a map that shows the components of narratives to help students to structure class lectures and readings. Students can also use maps or outlines while writing papers and the teacher can provide outlines for different formats (description, cause-effect, problem-solution, etc.). These maps enable the students to eliminate the burden of idea organization so that they can focus on idea generation. Students can gradually be taught to generate their own maps to structure course content and their own ideas (Schwiebert et al, 1998).

**Visual Manipulatives:**

Visual Manipulatives that allow students to build models of organization with different colored shapes and different parts – such as Legos, Cuisenaire rods, or Word Shapes – can be used to organize class content, student ideas, and structural components of assignments (Oliver et al, 2000). This multi-sensory approach involves touch, color, and movement to facilitate the understanding of patterns of organization. Eventually, students often internalize the approach and no longer require the manipulatives to organize the information. The structure of essays, for example, can be taught by using interlocking gears where the first gear (green for “go”) represents the introductory paragraph; the next three gears (one color) represents the supporting paragraphs and the last gear (red for “stop”) represents the conclusion (Oliver et al, 2000). After composing their essays, students can compare their work to the gears to check for appropriate structure. These models can help students to understand the structure of ideas in a nonverbal way before they express those ideas.

**Mnemonic Devices:**

Mnemonic devices can assist students in remembering and focusing on the various requirements for academic success through cues and rhymes (Hallowell & Ratey, 1994; Schwiebert et al, 2002). “CANDO” for example, can assist students in organizing course content by reminding them to Create a list of what is to be learned, Ask themselves if the list is complete, Note main ideas and details in a map, Describe each component, and Over-learn main points. Another device is “RAP” which reminds students to Read, Ask themselves what is the main idea and what are two details, and Put them into their own words. “TOWER” can help students structure and organize their
work by reminding them to Think about the content, Order the topics, Write a rough draft, Error search, and Revise and rewrite (Schwiebert et al, 2002).

**Clarifying Questions:**

Instructors can specifically ask students what steps they plan to take in achieving a particular goal, what strategies they plan to use to organize, and why they have chosen those strategies. Through these questions, instructors can help students understand what information is most important, how to find it, conceptualize it, express and present it, and how to proceed when a goal is not reached (Oliver et al, 2000; Richard, 1995; Willis et al, 1995). Instructors are encouraged to ask students questions about personal experiences (like a movie or event) and to use clarifying questions to help them verbally structure their main points and details (Schwiebert et al, 2002). Students can also be taught to ask clarifying questions to understand the ideas expressed by their classmates and to include clarifying questions such as “Do you see what I mean?” to make sure their points are clear (Schwiebert et al, 2002).

**Feedback:**

Students with attention deficits greatly benefit from having their progress monitored and from their instructors describing what is expected of them, whether they are meeting course objectives, and what approaches might be most useful to them. Feedback should also praise students for their efforts and improvements and should encourage them to become self-observant by asking specific questions about organizational strategy use, time management, and future goals (Hallowell & Ratey, 1994). Students can also fill out feedback sheets about the verbal and written organization of each other’s work during peer reviews, providing models of effective and ineffective organization of concepts (Oliver et al, 2000). Feedback sheets with specific questions that reinforce the structure and organization of information presented in class can also be filled out by students at the end of class. A discussion of these sheets that compares the organization of the questions to the notes the students took during class can also assist students in monitoring their note-taking abilities (Oliver et al, 2000).

**Will these strategies help my students with attention deficits?**

Much more research on comprehensive interventions that address the various factors associated with ADHD is needed to meet the needs of this growing population most effectively. Most researchers do agree that students with attention deficits need multi-modal, comprehensive interventions that address a variety of factors. Instruction in organizational strategies is merely one recommended element of an intervention for students with attention deficits. In addition to making personal recommendations to students (for tutoring, note-takers, etc.) based on their individual needs, teaching students these organizational strategies may assist them in overcoming some of the often debilitating difficulties that attention deficits can cause. Through improving their organizational skills both physically and mentally, these students are more likely to reach their full potential, to experience educational success, to succeed, and to persist in academic settings.
Note: See the University of Central Florida’s 10 Tips to Improve Concentration for all students at http://www.sarc.sdes.ucf.edu/learningskills.html

References


National College Transition Network (NCTN)
World Education, Inc.


**About the author**

Kathrynn Di Tommaso, AM, EdM, is a doctoral candidate at the Harvard University Graduate School of Education and a Fellow at the National Center for the Study of Adult Learning and Literacy (NCSALL). She has taught English and developmental reading and writing at community colleges in the Bay Area and in the Boston area. You can reach her at ditommka@gse.harvard.edu