

SLOW PROCESSING SPEED...IS IT DUE TO WEAK MOTOR SKILLS, WEAK AUDITORY PROCESSING SKILLS OR WEAK EXECUTIVE FUNCTION SKILLS?

by Melissa Mullin, Ph.D.

Slow processing speed can be due to more than just weak motor skills. Sarah's experience highlights some of the more complex factors that should be considered for a child with slow processing speed.

Sarah is a diligent, athletic and caring 15-year-old girl. Sarah has always done well in school, but not without support. When Sarah entered ninth grade at her new high school her study skills deteriorated and she began to have trouble completing her homework and turning it in. In spite of Sarah's best intentions she was not able to pull up her grades and complete her work. Based on recommendations from her school Sarah was evaluated to see if any learning issues were hindering her progress. The results of the evaluation demonstrated that while Sarah has an overall cognitive potential in the average range, her Processing Speed Index was significantly below her Verbal Comprehension and Working Memory Index scores.

The findings from Sarah's evaluation indicate that her processing speed deficit is due to her difficulty with visual discrimination, auditory processing, and weak executive functioning skills. While inattentive ADHD was not completely ruled out, the examiners felt that Sarah's main area of challenge was in the area of executive functioning rather than ADHD. Observation of Sarah during testing demonstrated her difficulty with task initiation. Sarah's auditory processing weakness resulted in a difficulty understanding directions. Without a complete understanding of directions Sarah often did not know what she was expected to do on the tasks presented. Sarah's response to not fully understanding the directions given to her, was to stop and try to figure out what she was supposed to do before she began working. This delay significantly impacted the time that it

took her to complete the tasks. In addition, without a full understanding of directions Sara often did not complete the tasks fully.

Sarah's challenge with executive functioning skills was evident in her difficulty starting tasks, as well as her difficulty organizing her thoughts and language as she listened to instructions. The combination of weak auditory processing skills along with weak organization and problem solving skills made it extremely difficult for Sarah to begin a new task.

Sarah's fine motor skills, reading skills and language skills were in the average range. Her slow processing speed affected her performance on writing and math tasks. In addition, Sarah needed extra time for reading comprehension tasks due to the complex language and organization processing required to comprehend the material.

Recommendations to help students like Sarah

Classroom Recommendations and Accommodations

- The following recommendations are suggested for use in the classroom:
 - Students will benefit from cueing so they know what to expect – check in with them periodically and preview what is to come.
 - Help students organize the information they hear in meaningful ways, including chunking the information into shorter steps or connecting new information with previously learned information.
 - Preview new concepts with students so they know what to expect – this will decrease stress and help with attention and engagement in the classroom.

Executive Function/Memory Skills

- Build strategies to help students analyze, prioritize, and execute specific steps in a given assignment.
- Encourage students to think through responses and take their time; many students with processing speed issues develop a compensatory strategy to rush through in order to finish work in time; these students would benefit from

slowing down to process the information more deeply.

- Teach students to stop and read directions carefully prior to starting a task.
- Break down tasks and follow the order-checking work along the way.
- Build memory skills by building associations to preexisting knowledge.
- Rehearse new information to help encode it.
- Encourage students to visualize what they are going to do before they begin a task.
- Teach students strategies to increase engagement such as use of reminders (which can be set on devices such as the iPhone) to help build attention, awareness, structure and independent work habits.
- Teach students to use self-talk to organize learning and performance strategies and to focus attention on tasks.
- Teach students strategies to help recall information, such as PAR:

P= Picture it.

A= Associate it

R= Review it.

- Teach students study and memory strategies such as:
 - “Chunking” information into more manageable units
 - Rehearse new information to help encode it
 - Use notecards to review information

Visual-Perceptual Strategies

- Use of graphic organizers to depict information visually and increase retention of ideas.
- Note-taking techniques that will present and summarize heard information visually.
- Exercises to sharpen the ability to attend to visual detail and to express similarities and differences between images.

Processing Speed/ fine motor skills

- Allow extra time for tests, usually time and a half.
- Provide extra time for students to complete in-class assignments.
- Train students in time management techniques to become aware of the time

that tasks take.

- Teach typing skills to enable students to type as fast as they think.
- Allow students to use the computer for all writing tasks.

Organization of language

- Students may have excellent ideas but have difficulty organizing their thoughts. Building pre-writing will help them express their ideas more clearly.
- Review of writing formats (Narrative, Expository, Descriptive, Compare/Contrast, Persuasive) would facilitate and structure written expression.
- Reinforce the writing process for students in a systematic manner (Brainstorming or clustering, writing, editing). The Inspiration Program is a creative computer tool that helps students brainstorm and organize their ideas before writing.
- Build students expressive language skills by:
 - Building language categorization skills
 - Building rapid naming skills
 - Teaching them how to organize new information as they learn it to create associations they can use later to recall the information
 - Building flexible thinking skills

Increase reading comprehension

- The SQ3R approach is recommended as an approach to studying information from text books
- Teach students to preview reading material prior to class to ensure they are able to follow along during class time
- Teach students to take notes at the end of each chapter of books they read. This will not only aid comprehension but assist in studying or finding information quickly when writing an essay
- Pull out keywords and main ideas while reading to help put what students are learning into context

Hopefully Sarah's academic achievement will improve as she builds strategies to help her overcome her areas of challenge. Building Sarah's ability, and helping

her develop strategies, to understand directions is the first step to helping her start tasks. Teaching Sarah how to break down and organize the steps to complete tasks will allow her to finish the tasks she starts. As Sarah develops these skills, it is hoped that she will be able to complete tasks in a timely manner, thereby increasing her processing speed.

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