

Module 2.3 Supporting Processing Speed Issues in the Classroom

Key Points: Processing Speed

- Key fundamental block necessary for high order integrated functions
- Impact is generalized and influences memory/attention
- Could impact crystalized intelligence over-time

Processing Speed: An Important View

- Visual-verbal processing speed (Rapid Naming) is a strong indicator of reading fluency or fluency problems
- Processing speed is correlated with other disorders, such as ADHD and SED issues. It is widely regarded as a generalized and sensitive indicator of neurocognitive deficit, but sometimes lack specificity

Processing Speed and Its Impact on Learning

- Neurocognitive Perspective: Transfer of information from one brain region to another-integrity and speed of the “neural highways”
- May impact crystallized intelligence over time due to slower learning rate
- PS deficits readily observed in reading fluency difficulties. However, math fluency and retrieval issues may also be seen

Processing Speed: What Causes It?

- Strength of neurological signals within and between neurons in the brain
- How quickly and efficiently neural-electrical signal are sent-transfer information to other brain regions
- PS deficits have many possible causes-but primarily low myelination and/or brain structure issues

Expert Guidance

- Not necessarily scientific in a strict sense of RCT or correlations studies, but widely employed and accepted by experts as effective and has practical significant
- Student motivation- use metacognitive strategy
- Reduce processing speed demands- reduce unnecessary information to be learned-focus on core concepts
- Organize information so it is efficient to learn
- Keep expectations high, but reasonable; immerse in rich and stimulating education environment

- Seek a balance between moving the student forward by raising time awareness, but not to the point it increases anxiety

Intervention

- Research indicating that PS can be increased via training programs, or non-medication interventions, is variable and not consistently substantiated. Some promising research developing
- Due to current body of research, focus should be on accommodations, not trying to “fix” PS deficits
- Focus on building skills that mitigate the effects of slow processing speed (SPS)
- Typically, only domain specific effects (near-effects)- Difficult to increase PS

Interventions: Skill building

- Address anxiety related to PS-develop coping skills
- Teach time management and self-awareness strategies
- Teach self-monitoring strategies- set goals and rate success related to timely completion
- Model fluency- reading and writing

Accommodations

- Mitigate the negative effects of SPS by minimizing “speed or quickness” in a new learning situation
- Functionally increase PS by decreasing extraneous task demands
- Teach students to advocate for accommodations that help support their needs and mitigate the effects of SPS
- Emphasize quality over quantity
- Allow additional time to complete assignment, test
 - Make sure the student starts the task and uses extra time
 - Use a visible timer on student desk to build time awareness
- Allow additional time for verbal response
- Prep student before calling upon in class
- Reduce repetition of task when mastery is demonstrated
- Allow students to complete every other item if content is not changed