



BBBD Supports and Interventions



Using the *Building Blocks of Brain Development* to Support Students with Learning Disabilities

Peter Thompson, Ed.S., Ph.D.





Module 2.3

BBBD: Supports and Interventions

Supporting Processing Speed Issues in the Classroom



Important Note

The information, concepts, and models provided in this presentation are intended to give practitioners a framework when conducting special education evaluations and employing interventions. It is emphasized that nothing in this presentation is meant to be directive or prescriptive.

Professionals are free to use some, or all of the information presented, but they are not required to do so in their practice. **Always consult with your special education director for clarity around district policies and expectations for special education evaluations.**



IMPORTANT 

Learning Outcomes

- Understand the nature of processing speed and its impact on learning
- Learn the most effective supports for processing speed problems



Presentation Organization

I. Processing Speed and Key Concepts

II. PS Supports and Interventions

A. Expert Guidance

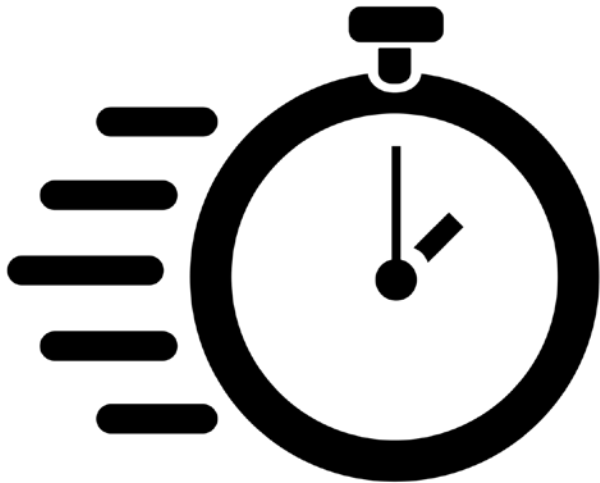
B. Interventions

C. Accommodations



I. Processing Speed

Key Concepts



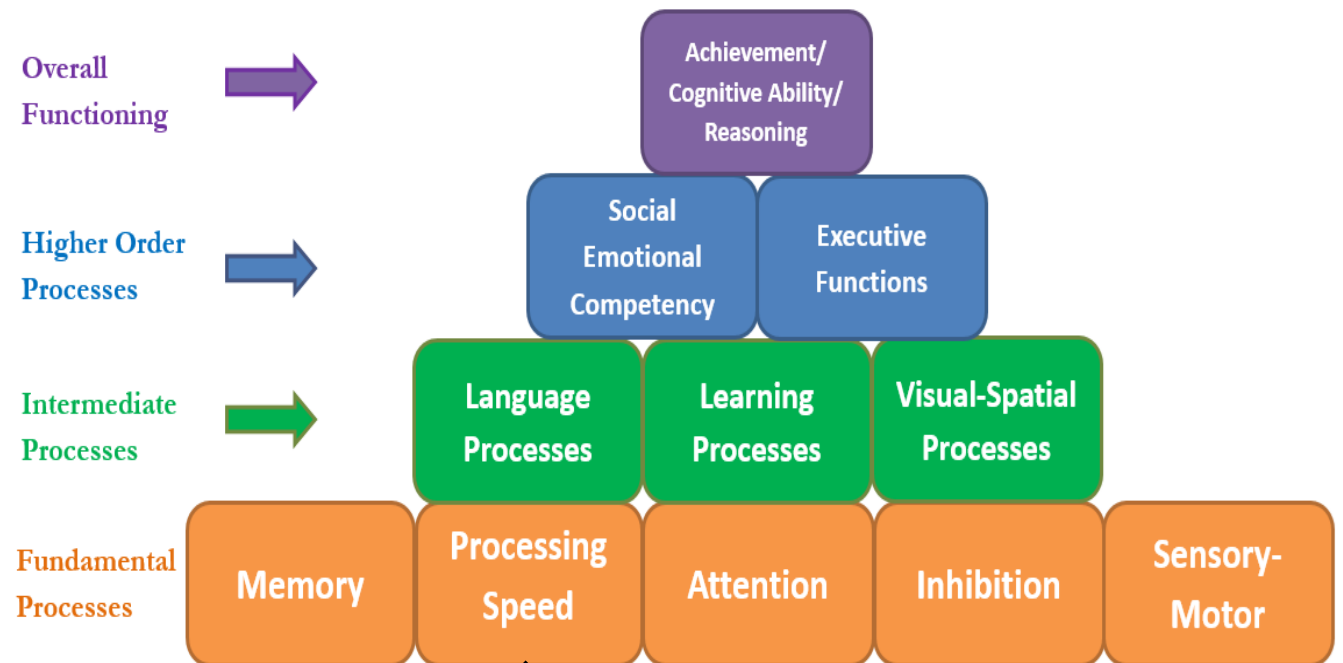
1. BBBD and Processing Speed
2. What Causes it?
3. Important Considerations
 - Limited interventions, but practical supports
 - Medication implications
 - Impact on memory and attention



Key Points: Processing Speed

- Is a key fundamental block necessary for higher order integrated functions
- Impact is generalized and influences memory / attention
- Could impact crystalized intelligence over-time

Building Blocks of Brain Development ©



The Hierarchy of Cognitive Functioning © - created by Peter Thompson, Ph.D. 2013, adapted from the works of Miller 2007; Reitan and Wolfson 2004; Hale and Fiorello 2004. Building Blocks of Brain Development © - further adapted by the CO Brain Injury Steering Committee, 2016.



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 a neurocognitive deficit, but sometimes lacks specificity.



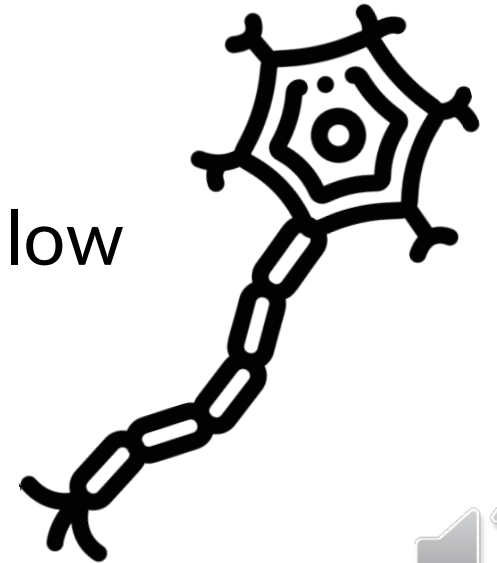
Processing Speed and Its Impact on Learning

- Neurocognitive Perspective: Transfer of information from one brain region to another-integrity and speed of the “neural highways”.
- May impact crystallized intelligence (i.e. knowledge base) 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 signals are sent—transfer information to other brain regions.
- PS deficits have many possible causes-but primarily low myelination and / or brain structure issues.

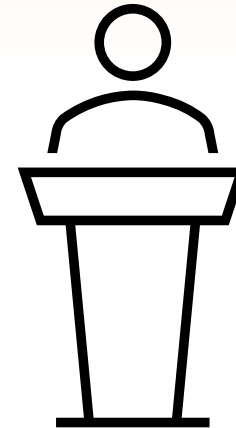


II. Processing Speed: Supports and Interventions

1. Expert Guidance
2. Interventions
3. Accommodations



1. Expert Guidance



1. Expert Guidance



Not necessarily scientific in a strict sense of RCT or correlational studies, but widely employed and accepted by experts as effective and has practical significance.

- ✓ Student Motivation—use metacognitive strategy -“the why”



1. Expert Guidance



- ✓ Reduce processing speed demands-reduce unnecessary information to be learned- focus on core concepts
- ✓ Organize information so it is efficient to learn (timelines, categories)



1. Expert Guidance



- ✓ 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



2. Intervention



2. Interventions: Processing Speed



- 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 the current body of research, focus should be on accommodations, not trying to “fix” PS deficits.



Interventions



- Focus on building skills that mitigate the effects of slow processing speed (SPS)
- Typically, only domain specific effects (near-effects)—
Difficult to increase PS—No magic intervention
 - Flash cards, speed games-don't necessarily generalize
 - Computerized interventions, video games-
be cautious and critical with research



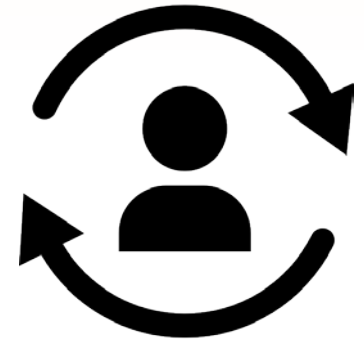
Interventions-Skill Building

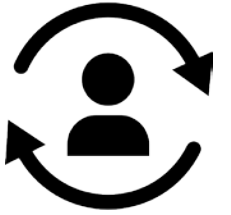


1. Address anxiety related to PS- develop coping skills
2. Teach time management and self-awareness strategies
3. Teach self-monitoring strategies- set goals and rate success related to timely completion
4. Model fluency—reading and writing



3. Accommodations



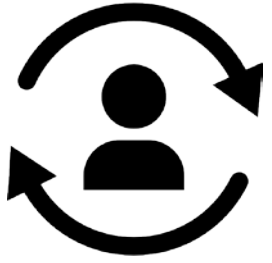


3. Processing Speed: Accommodations

- Mitigate the negative effects of SPS by minimizing “speed or “quickness” in a new learning situation
- Functionally increase PS by decreasing extraneous task demands (e.g. core learning)
- Teach students to advocate for accommodations that help support their needs and mitigate the effects of SPS



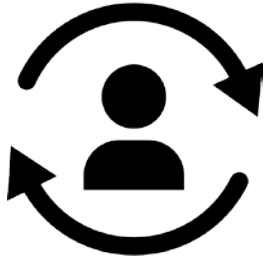
3. PS-Specific Accommodations



- Emphasize quality over quantity.
- Allow additional time to complete assignments, tests (1.5x but flex).
 - Make sure student starts task and uses extra-time.
 - Use a visible timer on student desk to build time awareness.



3. PS-Specific Accommodations



- Allow additional time for verbal response (be aware of anxiety).
- Prep student before calling upon in class.
- Reduce repetition of task when mastery is demonstrated.
- Allow student to complete every other item if content is not changed.



Summary

- Fundamental neuro-cognitive function of the BBBD.
- PS significantly contributes to learning.
- One of the most common deficits detected in SLD cases. PS is also associated with other issues (ADHD, Anxiety, SED).
- Widely regarded as very difficult to increase (fix).
- Interventions may be effective, but the focus should be on building skills that help mitigate the effects of SPS.
- Extra time, reduce workload, reducing anxiety, and self-monitoring with use of timer or other cues.





Thank You For Listening End of Module 2.3



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