BBBD Supports and Interventions
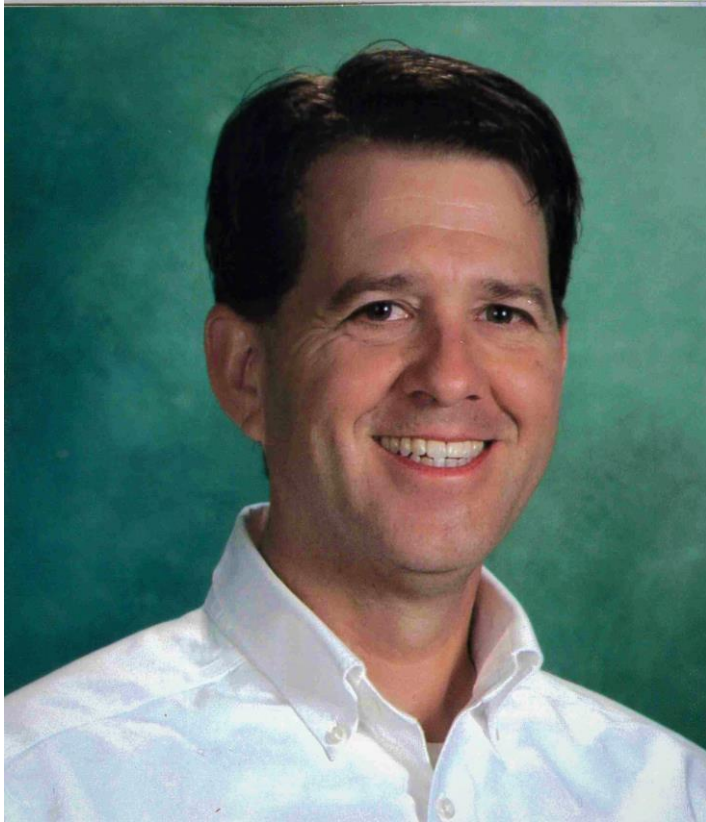
COLORADO
Department of Education

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

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

Sound provided by Bensound

Contributors and Acknowledgments

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Consideration of Terms

- The full and correct term is the *Building Blocks of Brain Development© (BBBD)*

- For this presentation, referred to many ways such as the BBBM or BBBD

- For this presentation, the BBBM or BBBD is used to describe <u>brain function</u> more than development

The Overall Purpose of This Series

- This series is a continuation of the course, **A** **C**_**omprehensive Model for SLD Evaluations: Using the**_ **BBBD to Understand and Assess SLD**.

- To provide practitioners and teams with an **intervention framework**, based on a convergence of data from a comprehensive SLD evaluation.

Module 1.1 Introduction

A Framework For SLD Supports and Interventions

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 why using the BBBD is important for SLD supports**

- **Review key concepts of the 3-factor model and the BBBD**

- **Understand some of the debate and research surrounding the BBBD**

FAPE Continuum from CDE

The FAPE Continuum

| Evaluation | Present Levels & Needs | Measurable Goals | Services in the LRE | Educational Benefit |

Our "Guideposts" start here, and then our services / support will stem from this point.

BBBD Guideposts to Create Your Own Personalized Framework

● Guideposts creates a "framework"--Defined enough to be effective, yet broad enough to give practitioners flexibility to use their own training and judgment based in "best practices".

● Guideposts help create a tree on which to hang your own practice.

● Just as every practitioner has a different approach to helping students, every student is unique and deserves a personalized intervention plan.
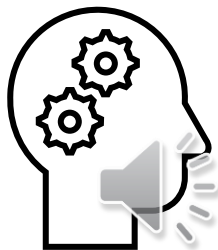
BBBD Interventions
Important Considerations

- All learning and learning problems **are** brain functions or dysfunctions. SLD is a deficit in one or more of key cognitive processes related to learning and school achievement.

- Typically, SLD has <u>more than one</u> neurocognitive weakness because brain functions are integrated. Major academic domains, such as reading, are on a "<u>neural circuit</u>" that are linked to multiple brain processes.

BBBD Interventions
Important Considerations

- Understanding how the brain functions using the BBBD in SLD evaluations, helps to set realistic goals and target specific areas to intervene.

- SLDs can impact a student in multiple domains, not just in school. Interventions can improve a student's quality of life (e.g social-emotional, daily functioning).
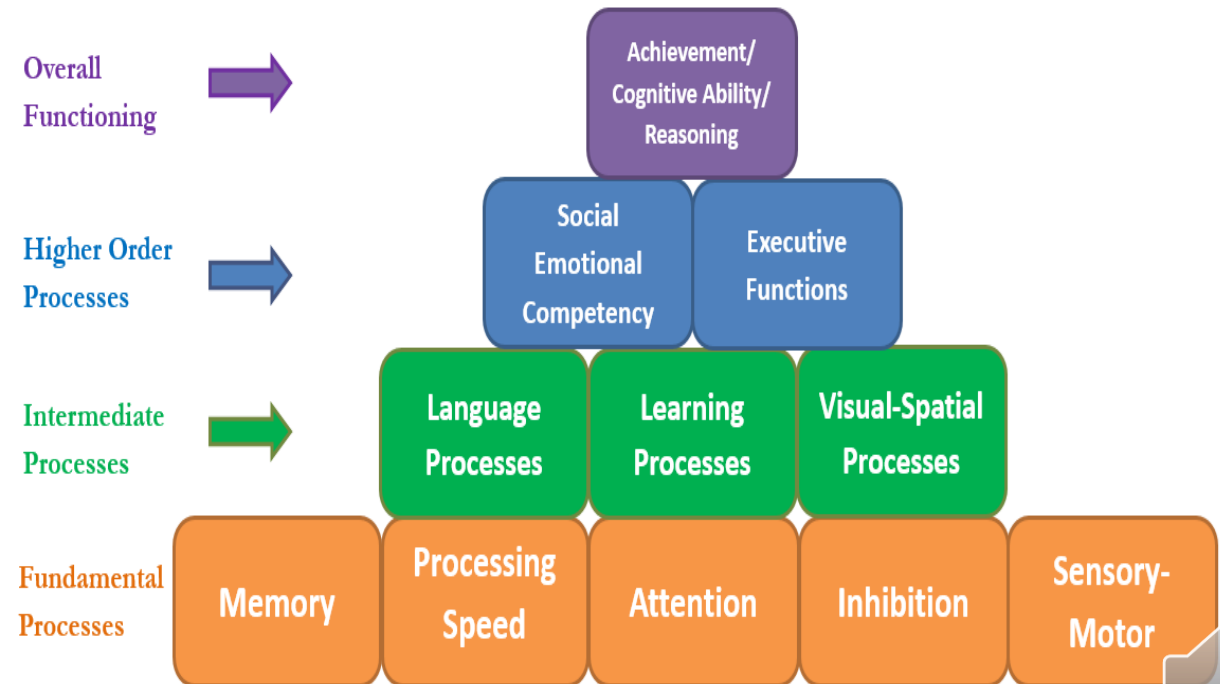
Review

3-Factor Model of Assessment
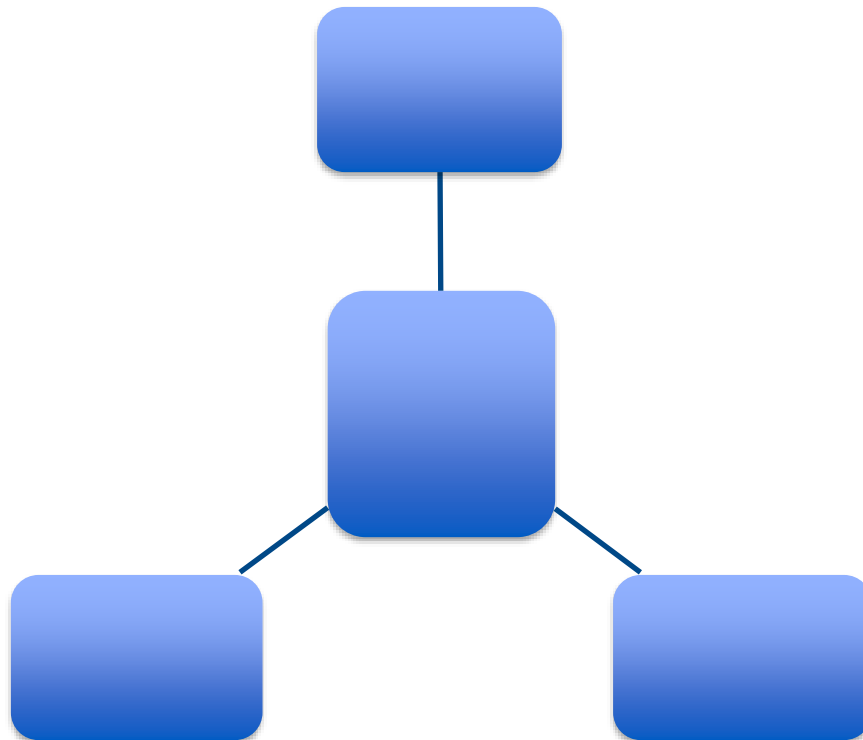
Building Blocks of Brain Development©

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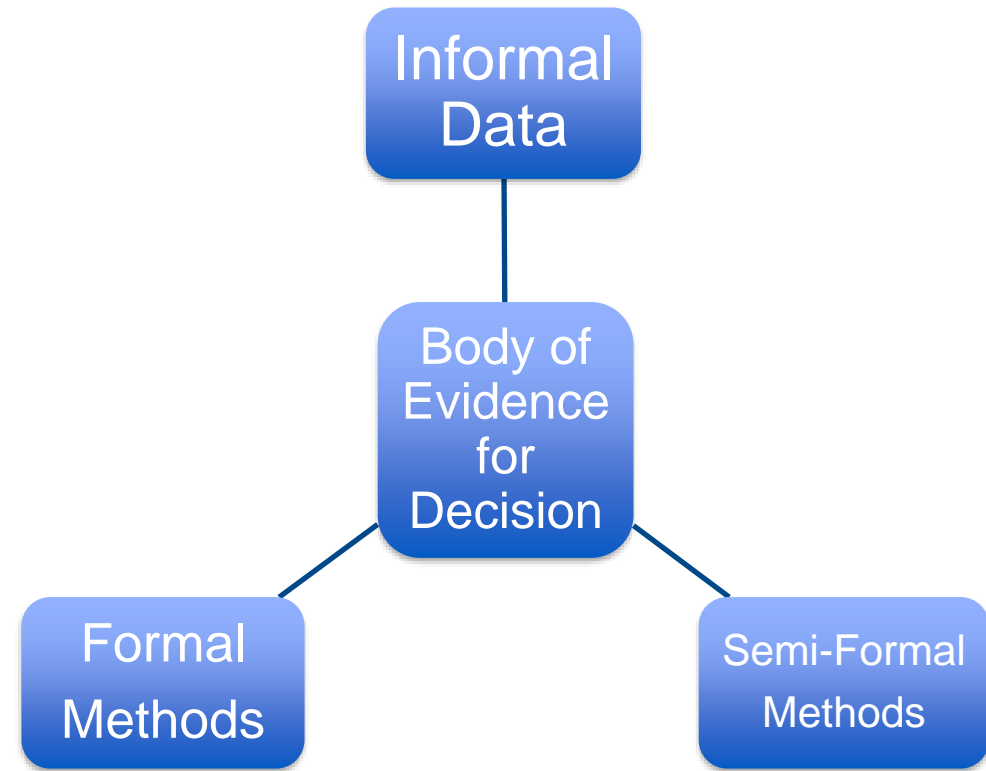
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Key Points

- **All legs of the triad will ensure a comprehensive and complete evaluation**

- **Emphasizes "convergence" of data**

- **Can collect all streams of information simultaneously**

Review: 3-Factor Model

Gathering Comprehensive Information to Use for Interventions

Thompson, P. and Sousa, K. (2013 / 2020)

Combine and Analyze all Data Streams

Note: RTI Data is a Vital Part

RTI DATA

Informal Information

Formal Data

Semi-Formal Data

Integrated Body of Evidence

Thompson-Sousa Model (2020)

Key Points

▪ Describes both *organization* and *function* of the brain

▪ One of <u>many</u> models, oversimplifies brain functioning, but <u>extremely practical to use in SLD evaluations</u>

▪ The lower the level, the more specialized the brain function, the higher the level, the more integrated the brain processes become

Building Blocks of Brain Development©

Overall Functioning	→	Achievement/ Cognitive Ability/ Reasoning
Higher Order Processes	→	Social Emotional Competency / Executive Functions
Intermediate Processes	→	Language Processes / Learning Processes / Visual-Spatial Processes
Fundamental Processes		Memory / Processing Speed / Attention / Inhibition / Sensory-Motor

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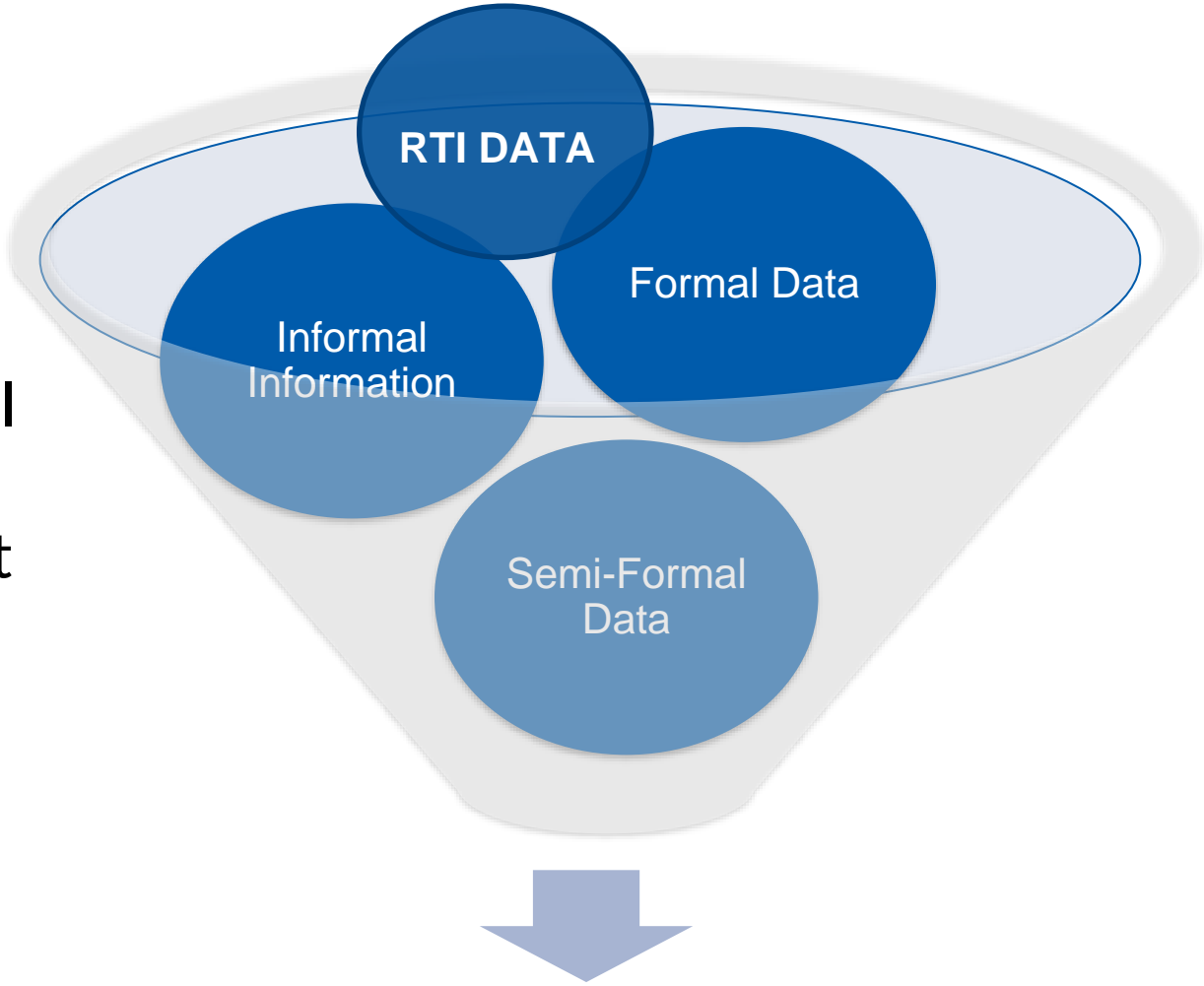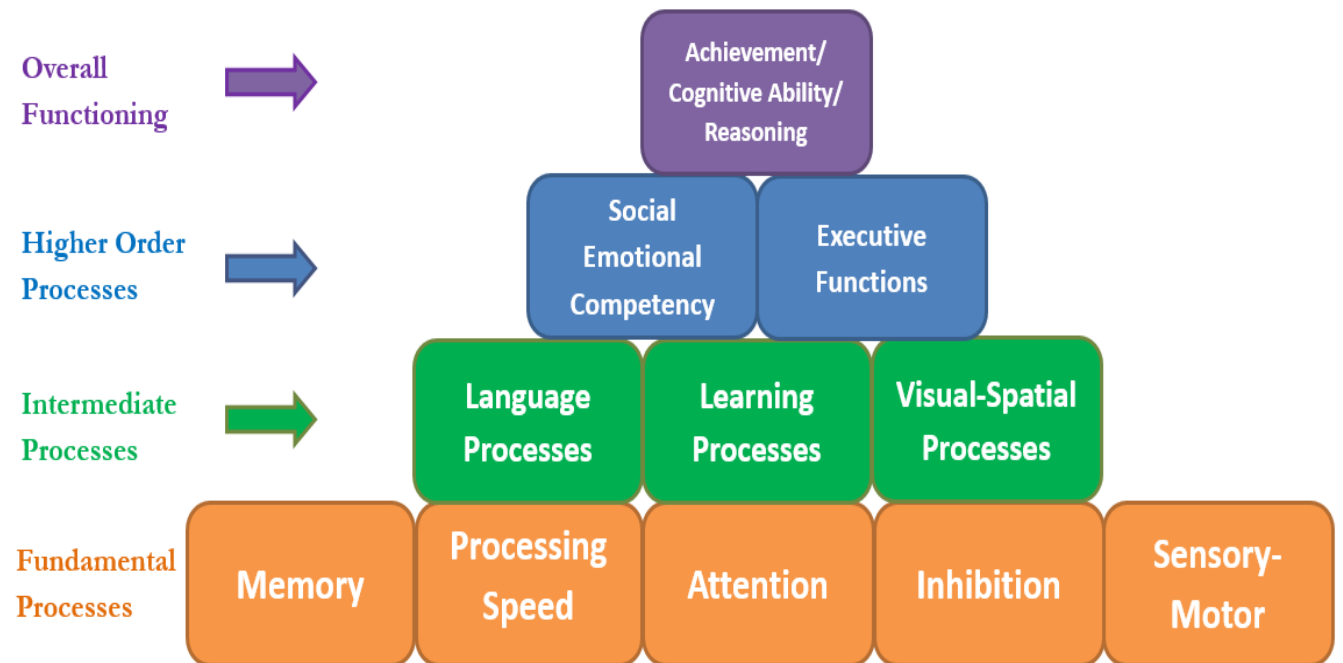
SLD: Key Points

- **All** learning disabilities are brain-based disorders and the BBBD captures this fact

- **Each level and block are largely dependent on each other**

- **Evaluations should account for key *Fundamental Processes* as these functions are common to most SLDs**

Building Blocks of Brain Development ©

Overall Functioning → Achievement/ Cognitive Ability/ Reasoning

Higher Order Processes → Social Emotional Competency | Executive Functions

Intermediate Processes → Language Processes | Learning Processes | Visual-Spatial Processes

Fundamental Processes → Memory | Processing Speed | Attention | Inhibition | Sensory-Motor

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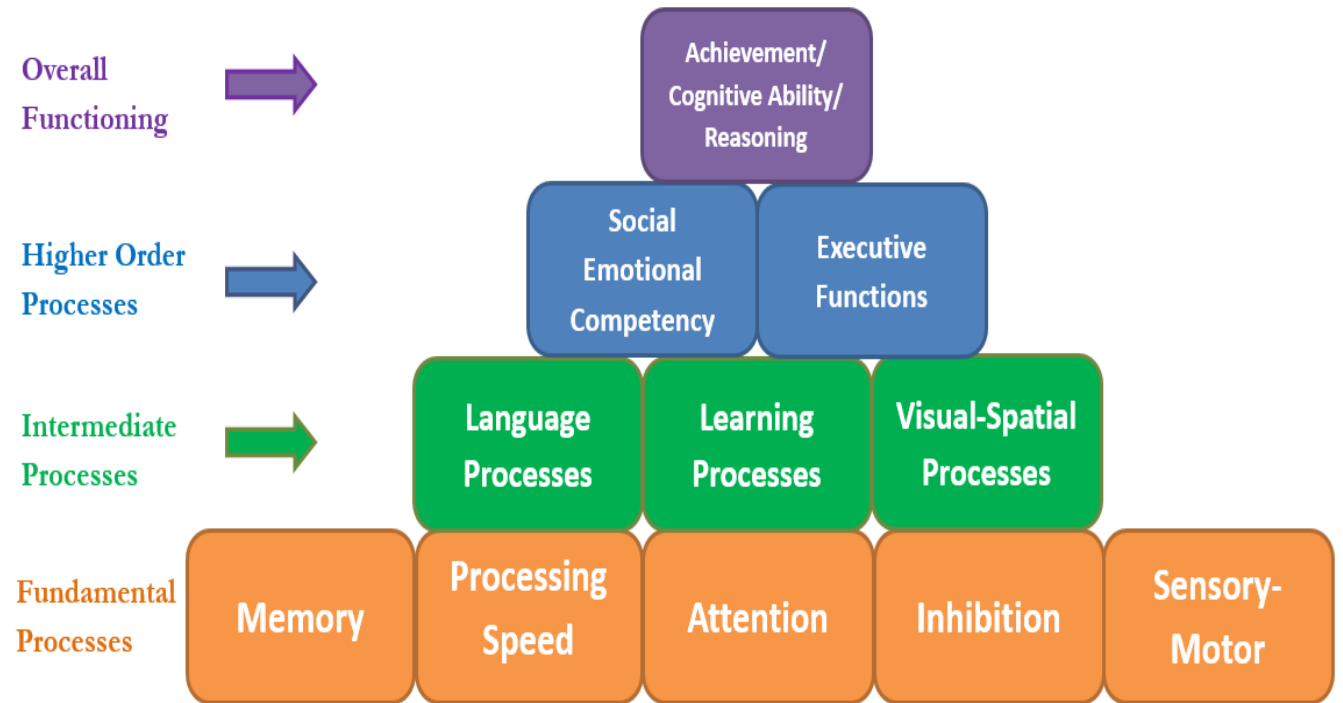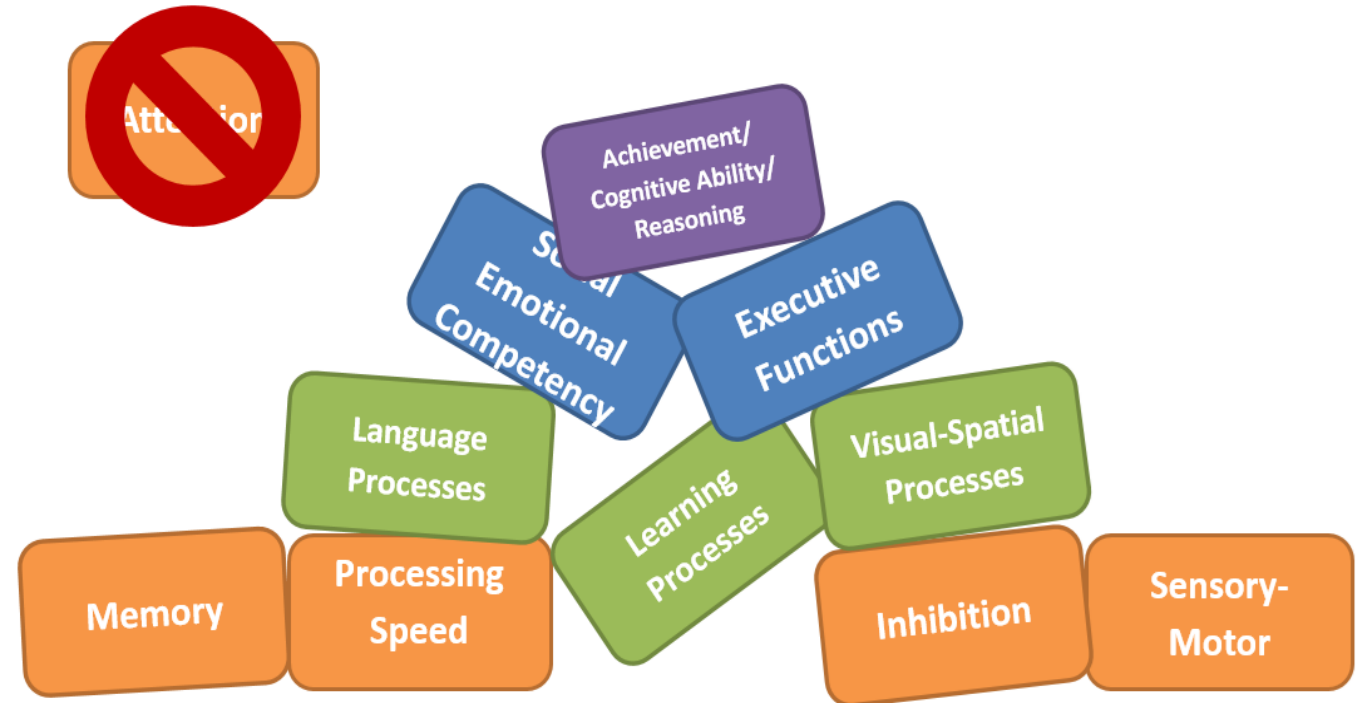
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SLD: Key Points

Most learning disabilities have critical links to the lower level. A break in any brain function (block) gives you the "why" a student struggles or has stunted progress.
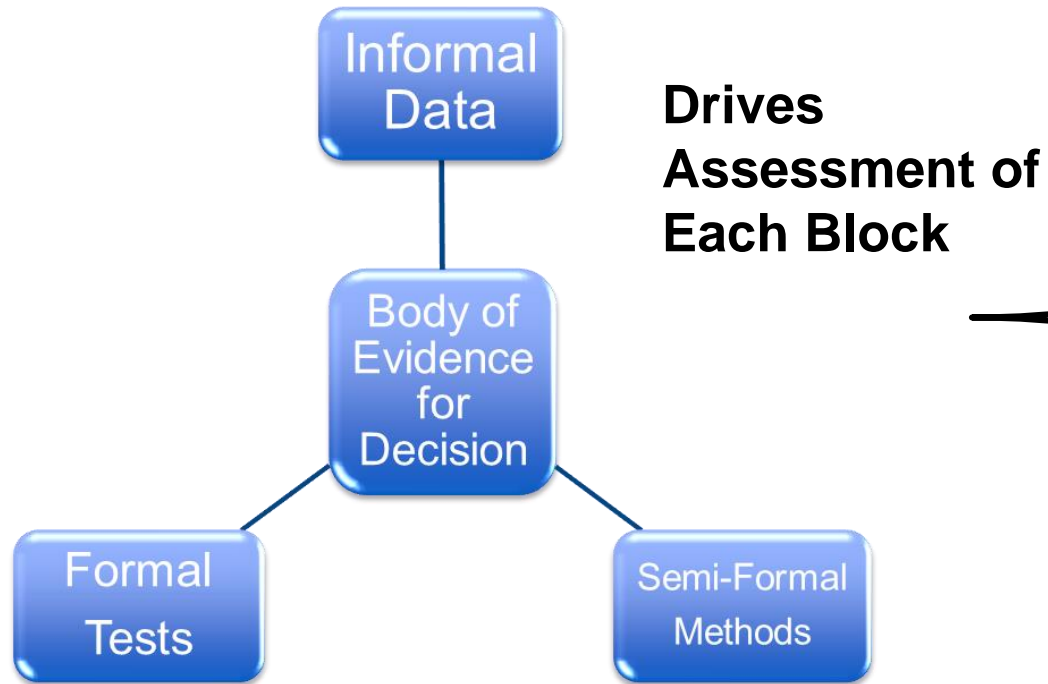

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All Blocks Examined with the 3-Factor Model

Informal Data

Body of Evidence for Decision

Formal Tests

Semi-Formal Methods

Drives Assessment of Each Block

Building Blocks of Brain Development ©

Overall Functioning	→	Achievement/ Cognitive Ability/ Reasoning

Higher Order Processes	→	Social Emotional Competency	Executive Functions

Intermediate Processes	→	Language Processes	Learning Processes	Visual-Spatial Processes

Fundamental Processes	Memory	Processing Speed	Attention	Inhibition	Sensory-Motor

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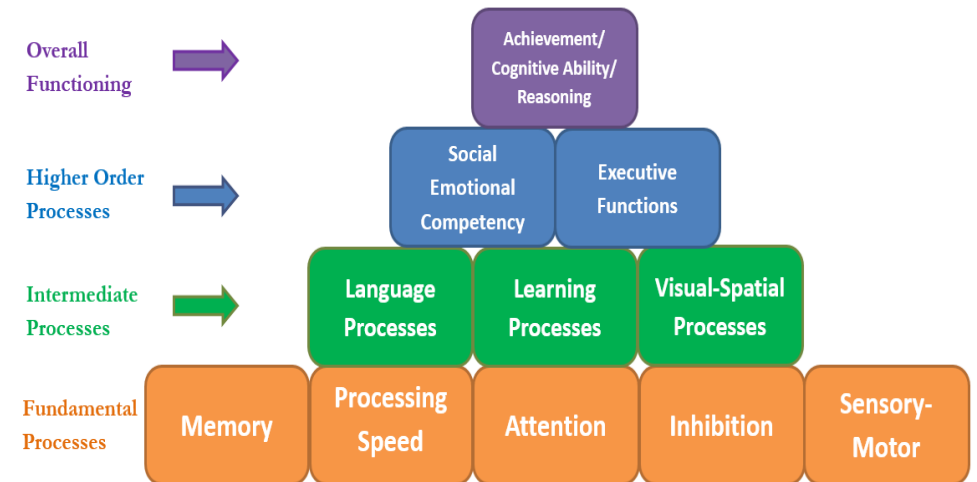
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Important Note: Suggested to use BOTH models in SLD evaluations

Controversy and Considerations

- Some counter opinions exists, mostly centering on RTI vs. cognitive assessments. However, both RTI and neurocognitive approaches can <u>be used together</u>—not in opposition to each other.

- Some controversy centers on cognitive assessments adding utility to identification and interventions (e.g. Aptitude x treatment; Dose-response). Despite the controversy, the definition of SLD includes a deficit in the basic psychological processes.

- Some opponents support their position with research that supports only their view and ignore other research.

Controversy and Considerations

- Opponents typically assert that their research is conclusive when it is in fact not. Research in neuroscience is dynamic and evolving. Neuroscience interventions have strong scientific foundations.

- BBBD based in neuroscience: Theoretical links to Luarian theory, CHC theory, CHT, XBA, and SNP, and Dehn's Model.

- Based on the works of prominent researchers. B. Pennington, D. Miller, A. Hale, Kaufman, S. Shaywitz, Flannigan, Ortiz, and J. Naglieri.

Summary

- Using the BBBD model for intervention is important because it helps to <u>target specific areas for support</u> based on deficits uncovered in the BBBD evaluation. The BBBD also helps to <u>set realistic goals</u>.

- The <u>BBBD is used in conjunction</u> with the <u>3-Factor model</u> of assessment. All data streams, <u>including RTI data</u>, converged to craft intervention strategies.

- There is some controversy surrounding the use of cognitive assessments in creating interventions, but significant research exists that interventions can be linked to neuroeducational evaluations.

Thank You For Listening
End of Module 1.1: Introduction

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