

Writing

Complex activity that involves the blending of:

- Fine motor coordination (Graphomotor)
- Attention
- Language
- Memory
- Higher-order thinking

Neurodevelopmental differences can occur in one or more of those areas.

“There is not another academic skill that demands that a child bring together as many different neurodevelopmental functions as are required for writing.”

~Dr. Mel Levine

<http://www.allkindsofminds.org/>

Graphomotor

Graphomotor function refers to the ability to use muscles in the fingers and hands to form letters easily and legibly and to maintain a comfortable grip on a writing instrument. This function plays an important role in maneuvering a pen or pencil and allowing the fingers to keep pace with the flow of ideas.

- Coordinating small muscles of the fingers needed to form letters
- Signs of writing problems:
 - Finds it hard to form letters
 - Has difficulty manipulating a pencil
 - Grips a pencil uncomfortably tightly
 - Holds a pencil in an awkward manner
 - Struggles to coordinate small muscles to keep up with the flow of ideas

Attention

Attention plays an important role in all stages of writing. This task often demands considerable mental energy and focus over long periods of time. Writers must not only preview what they want to convey as they put their ideas on paper, but also continually self-monitor to stay on track.

- Maintaining concentration and self-monitoring work
- Signs of writing problems:
 - Is distracted or fidgety during writing tasks
 - Loses one's place while writing
 - Appears mentally fatigued or overly tired while writing
 - Doesn't exert effort if topic is not personally interesting
 - Is unable to get started on writing assignments

Language Production

Language is an essential ingredient of writing. The ability to recognize letter sounds, comprehend words and their meanings, understand word order and grammar to construct sentences, and describe or explain ideas all contribute to a child's ability to write clearly.

- Using words and forming sentences correctly
- Signs of writing problems:
 - Has difficulty with word sounds or meaning
 - Cannot easily spell words so they reflect the way they are pronounced
 - Finds oral expression difficult
 - Struggles with sentence structure and proper word order
 - Has trouble reading back what is written

Memory

Memory ability has a significant impact on writing. The rate at which children generate ideas must coincide with their retrieval of necessary vocabulary, spelling, and prior knowledge. When organizing essays, writers must be able to think about a topic, draw upon facts and concepts, and sequence ideas and facts in the right order.

- Recalling letters, rules and ideas
- Signs of writing problems:
 - Cannot easily recall letter formation.
 - Cannot easily recall rules of spelling, grammar, punctuation
 - Presents ideas out of sequence
 - Has trouble accessing prior knowledge while writing
 - Struggles to organize ideas while writing

Higher Order Cognition

In the upper grades, writing relies on higher-order cognitive functions. Assignments often require students to generate original and creative ideas while integrating spelling, grammar, and punctuation rules. By early adolescence, many written assignments demand critical thinking skills and conceptual ability such as evaluating opposing arguments and drawing conclusions.

- Generating ideas and taking a stepwise approach to plan/revise
- Signs of writing problems:
 - Cannot easily generate ideas or elaborate on them in writing
 - Has difficulty with writing tasks requiring creativity and/or critical thinking
 - Finds organizing writing tasks difficult