All Kinds of Minds

ONLINE ATTENTION MODULE

Workbook and Reference

Online Attention Module:

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About this Module

Welcome:

Welcome to the online Attention module. This module will help you to describe attention, including its components and how they are organized, identify a student's strengths and weaknesses, and to select appropriate strategies based on those strengths and weaknesses. Below you will find information to use as a reference for navigating through this online learning experience.

Before you begin:

- Print a copy of this Workbook and Reference to have available along with something to write with.

- Verify that you have the minimum system requirements:
  - A broadband (Cable or DSL) connection is highly recommended.
  - Our online courses are designed to work with Internet Explorer V6.1 or higher. If you have another browser or a lower version of IE, some of the features may not function as designed. (NOTE: To find out your current version of IE, select the "About Internet Explorer" link from the "Help" menu.)
  - Speakers or headphones and a sound card are required as audio is used throughout the course.
  - Flash animation is used to execute the course. If you do not already have the Flash player installed, you can download the latest free version at: http://get.adobe.com/flashplayer/.

- Review the following module navigation tips:

  - While this module was designed with flexible navigation, we recommend that you proceed through the module components consecutively. To navigate through the module components consecutively, use the green **>** button on the bottom right corner of the screen. You may also navigate through the module by clicking on headings on the Menu screen.

  - Practice activities are designed to reinforce key concepts and are not scored. We recommend that you attempt a practice activity for each aspect of attention.

  - You may exit and return to the module as many times as you like. To exit the module, close the browser window by clicking on the **X** in the top right corner of the screen.

    Tips for completing the module in several sessions:

    1. Use page 3 in this workbook, "Tracking Your Progress," to track your overall progress through the module.
    2. Use the "Table of Contents" (TOC) feature or the "Menu" feature when you return to the module to help navigate to where you left off in the previous session. Both of these buttons are in the bottom right corner of the screen.

- Module completion time will vary among users, but generally, we anticipate that it will take approximately 2-3 hours to review all of the content in this module.

Module Completion:

Once you have visited all of the sections you wish to explore, return to the **Menu** page and click on the **Submit** button in the top right corner of the screen to notify All Kinds of Minds of your module completion.

Help and Assistance:

If at any time during the course you need assistance, you may reach us via:

- E-mail : info@allkindsofminds.org.
- Phone: Call Customer Service at 888.829.5995 during normal business hours (9 a.m. to 5 p.m. EST, Monday through Thursday).

Tracking your Progress

Use this page to track your progress through the module.

- ❑ **Introduction** – Introduces the three students
- ❑ **Neurodevelopmental Framework** – Attention as part of the framework and objectives of the module
- ❑ **What is Attention?** – Defining Attention and its three components
- ❑ **Warm-up Activity** – Short matching activity
- ❑ **Aspects of Attention** – Use the chart below to track your progress through each of the three aspects of Attention.

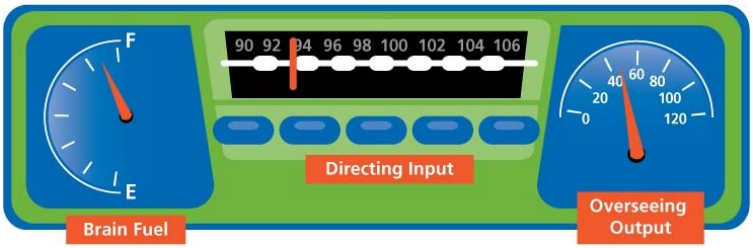
	Mental Energy Controls (Brain Fuel)	Processing Controls (Directing Input)	Production Controls (Overseeing Output)
Explore			
❑ Key Ideas			
❑ Strategies			
❑ Signs of Strength			
❑ Signs of Weakness			
Develop			
❑ Deeper Content			
❑ Case Story – 1			
❑ Case Story – 2			
❑ Secondary Attention Weaknesses			
❑ Important Terms			
❑ Assessment Tactics – 1			
❑ Assessment Tactics – 2			
❑ Assessment Tactics – 3			
Practice			
❑ Practice Exercise			

Putting the Pieces Together

- ❑ Maggie – a 13 year old
- ❑ Ian – a 16 year old
- ❑ Ben – an 8 year old

Warm-Up Activity

Draw a line from each statement to the corresponding aspect of attention on the diagram.



1. Consistent ability to maintain work effort and follow through on tasks could indicate a strength in these controls
2. These controls direct incoming information
3. These controls oversee academic and behavior outputs
4. Impulsivity and inconsistency in work product may be a result of a weakness in these controls
5. These controls maintain mental energy for work and learning
6. Difficulty identifying important details may be a result of a weakness in these controls

Mental Energy Controls:

Signs of Strength, Weakness, Strategies

Signs a student's mental energy controls are operating well:

- readily starts working and maintains effort level
- actively engaged when reading or listening
- appears to have sufficient and reliable energy when working
- gets adequate sleep in terms of quantity and quality

Signs a student's mental energy controls are <u>not</u> operating well:

- has trouble initiating and sticking with tasks
- does not seem alert when reading or listening
- appears excessively fatigued when working
- alertness and energy level fluctuate
- fidgets and seeks physical stimulation to stay vigilant
- has trouble falling asleep (despite having a calming bedtime routine), staying asleep, and waking; may not be fully awake until well into the school day

Some strategies for students whose mental energy controls are not operating well:

- Routinely change up modalities, such as switching back and forth from a highly verbal presentation to a nonverbal activity; preview such shifts so that students know how long they have to maintain their alertness before a transition
- Allow as much movement as possible while students are working, such as standing at desks or using fidget objects (like a bean bag that can be manipulated, but that won't roll or bounce)
- Create purposeful breaks such as collecting papers, passing out materials, erasing the board, or posting lesson objectives
- Emphasize a staged writing process that segments tasks even more than for most other students: topic selection, brainstorming, data collection, planning, organizing and outlining, initial drafting, elaborating, revising, editing, rewriting, and proofing
- Separate task stages so that relatively little work is done during a given work session
- Allow some writing assignments to be abbreviated, such as exchanging a bulleted list for a full text essay
- Pair students with partners who can help maintain alertness and vigilance through frequent interaction, task sharing, dialogue, and checking each other's work

Mental Energy Controls:

Practice Activity and Reflection Questions

Mr. Bailey is preparing to have a conversation with Janet's mother about Janet's weak mental energy controls. What would be some observations he could share with her during their conversation? Check all that apply.

- ❑ Frequently gets asked to play sports with friends
- ❑ Continually kicks or taps leg of desk
- ❑ Has paper and pencil ready for morning journal time
- ❑ Often turns in partially finished math worksheets
- ❑ Stays engaged throughout the entire afternoon
- ❑ Keeps desk and classroom materials organized
- ❑ Regularly lays head on desk when listening to instructions
- ❑ Sometimes falls asleep during silent reading time

Reflection questions:

When have you experienced difficulty with your mental energy controls? How did that feel?

_____

_____

What did you find most intriguing about mental energy controls?

_____

_____

In your work with students, what tasks place the most demands on their:
- alertness (vigilance for intentional intake of information)
- mental effort (energy allocation for cognitive work)

_____

_____

_____

What additional strategies will you incorporate into your instruction to help your students who struggle with mental energy controls?

_____

_____

Processing Controls:

Signs of Strength, Weakness, Strategies

Signs a student's processing controls are operating well:

- resists the pull of distractions (such as sights and sounds)
- maintains focus for adequate stretches of time
- readily shifts focus during transitions
- notices key details
- follows instructions with no need for repetition
- makes appropriate connections between new information and prior knowledge
- concentrates during relatively unexciting activities

Signs a student's processing controls are <u>not</u> operating well:

- loses focus relatively quickly; susceptible to distractions
- easily overwhelmed by detailed information
- has trouble shifting focus during transitions
- misses key details
- glosses over material too quickly to absorb it
- makes tangential connections between new information and prior knowledge
- has trouble concentrating during relatively unexciting activities
- seeks a great deal of stimulation, perhaps to the point of risk-taking

Some strategies for students whose processing controls are not operating well:

- Give verbal advanced warnings about important upcoming information, such as presenting information in numbered lists (like, "I'm going to tell you about 3 important ideas today. First, …")
- Provide partially completed graphic organizers or lecture outlines for note-taking; embed cues in graphic organizers or outlines, such as numbering slots for key details
- Coach students to use a color-coding system when reading; for example, main ideas could be underlined in red, details highlighted in blue, and new vocabulary terms highlighted in yellow; provide a passage that models the color-coding system
- Employ directed reading activities to promote deeper engagement with the text; for example, set up a scavenger hunt in which the students need to find certain pieces of information or a specific number of facts in a reading assignment; end-of-chapter questions can be used for this purpose

- Cloze activities can help students read more closely for detail; for example, conceal parts of words or whole words in a passage so that the student has to carefully use context clues
- Highlight specific words in reading materials, such as five to six challenge words (depending on the length of the text) on which the student should focus; these words might include unusual letter patterns (like "answer"), multiple syllables, or vocabulary terms from previous material
- Have students highlight or circle all math operation signs as an initial step, before starting to solve any problems
- Provide practice identifying key details in math word problems by giving problems that have a large number of extra details that students have to eliminate
- Encourage students to set up a consistent work space at home, as free from distractions as possible, where they keep necessary supplies and materials
- Use a consistent format for organizing information on the board, such as writing homework assignments in the same order and in the same place each day

Processing Controls:

Practice Activity and Reflection Questions

Match the term in the left column with the phrase that best describes a related example of strength.

1. Saliency Determination	a) shares personal associations and connections during a lecture
2. Processing Depth-Detail	b) studies for tests, regardless of interest in content
3. Cognitive Activation	c) listens to a story or explanation in its entirety
4. Focal Maintenance	d) determines what information is needed to solve a problem
5. Satisfaction Level	e) sees the big picture when reading without losing the details

Reflection questions:

When have you experienced difficulty with your processing controls? How did you manage the difficulty?

_____

_____

How does what you're learning about attention in this module match with your prior knowledge of ADHD?

_____

_____

What instructional techniques do you already use to help students process incoming information?

_____

_____

What additional strategies will you incorporate into your instruction with your students?

_____

_____

Production Controls:

Signs of Strength, Weakness, Strategies

Signs a student's production controls are operating well:

- resists impulses
- plans before starting tasks
- works at an appropriate pace
- notices and corrects mistakes
- uses feedback from previous experiences to inform decisions

Signs a student's production controls are <u>not</u> operating well:

- susceptible to impulses
- jumps into tasks without sufficient planning
- rushes through work
- misses mistakes and opportunities to improve work quality
- has trouble using feedback from previous experiences to inform decisions

Some strategies for students whose production controls are not operating well:

- Provide self-monitoring practice through error detection games, such as giving completed math problems and having students identify and correct errors
- Collaborate with students to create the scoring/grading guidelines that will be used to evaluate their work
- Have students set a letter grade goal or other measure of work quality and have them self-grade or self-appraise before turning it in; if the self-grade is consistent with the teacher appraisal, bonus points might be awarded
- Provide explicit structure for planning (like stating, "Plan for 20 minutes before starting to work." or "Every 5-10 minutes you will need to stop and check to see if your plan is still working.")
- Have students share their plans with each other, and provide feedback, before starting to work
- Provide practice with thinking ahead and making predictions about social situations, such as by posing questions like, "What would happen if you told some kids that you didn't want to play with them during recess?" or "What if you told your reading partner that he was doing a good job?"
- Give students plenty of positive reinforcement whenever they inhibit impulses and make good choices in social situations; accompany praise with explanation for why a choice was good
- Coach and reinforce the use of stepwise plans for solving math problems, including: picking a strategy, estimating the answer, performing calculations, and comparing the answer to the estimated answer

- Have students color code math problems before attempting any; for example, blue might mean, "appropriate for mental math" and yellow could indicate, "all steps need to be written"; check to see that problems have been accurately coded
- Rather than grading/evaluating just finished written products, provide feedback at several time points or stages (such as the outline, rough draft, and final draft)

Production Controls:

Practice Activity and Reflection Questions

In your workbook, circle true (**T**) or false (**F**) for each statement.

1. Matt demonstrates a strength in pacing by rushing through things. **T** or **F**
2. Barbara has strong academic skills but may have a strength in facilitation and inhibition because she rarely checks over her work to find and correct mistakes. **T** or **F**
3. Rosemary has trouble learning from past experiences and keeps making the same mistakes over and over again, which indicates she may have a weakness in reinforceability. **T** or **F**
4. Emily demonstrates strength in self-monitoring when she thinks through possible options and chooses the best one. **T** or **F**
5. Ian consistently has difficulty predicting outcomes in stories, estimating the answers to math problems, and anticipating results, which may mean he has a weakness in previewing. **T** or **F**

Reflection questions:

Which would you say works best for you: mental energy controls, processing controls, or production controls? Why?

_____

_____

What are the best opportunities you have to observe a student's production controls?

_____

_____

Which of the various aspects of production controls do your students struggle with the most? The least?

_____

_____

What strategies will you incorporate into your instruction to help those students who struggle with production controls?

_____

_____

_____

Putting the Pieces Together

Maggie, 13 years old

Maggie …
- fidgets a lot
- swings from being vigilant to fatigued
- has little stamina for homework

Review the work samples and audio clips to the left of the screen to help you determine which aspects of Attention are causing Maggie problems and which are functioning okay or even well.

Rate Maggie on a continuum of weakness to strength for each aspect of Attention by placing a mark on each bar. Click on the hints on the screen for assistance.

Mental Energy Controls

Processing Controls

Production Controls

Putting the Pieces Together

Maggie, 13 years old *(continued)*

Choose the strategies you think would be appropriate for Maggie based on her Attention profile. Check all that apply.

- ❑ Allow for movement during work time, such as standing at desks or using fidget objects (like a bean bag that won't roll or bounce)
- ❑ Display "speed limit" signs to guide pacing for particular tasks, such as 50 mph for playing and downtime, 40 mph for reading for fun, 30 mph for reading directions, 20 mph for making a plan and working, and 10 mph for checking work; remind the whole class what the speed limit is for the task at hand
- ❑ Create purposeful breaks such as collecting papers, passing out materials, erasing the board, or posting lesson objectives
- ❑ Provide self-monitoring practice through error detection games, such as giving completed math problems and having students identify and correct errors
- ❑ Separate task stages so that relatively little work is done during a given work session
- ❑ Pair students with partners who can help maintain alertness and vigilance through frequent interaction, task sharing, dialogue, and checking each other's work
- ❑ Coach and reinforce the use of stepwise plans for solving math problems, including: picking a strategy, estimating the answer, performing calculations, and comparing the answer to the estimated answer
- ❑ Give advanced warnings about important upcoming information, such as presenting information in numbered lists (like, "I'm going to tell you about 3 important ideas today. First, …")
- ❑ Provide practice with thinking ahead and making predictions about social situations, such as by posing questions like, "What would happen if …?"
- ❑ Emphasize a staged writing process that segments tasks: topic selection, brainstorming, data collection, planning, organizing and outlining, initial drafting, elaborating, revising, editing, rewriting, and proofing

Additional strategies (optional):

Putting the Pieces Together

Ian, 16 years old

Ian …

- is highly distracted by sights and sounds
- is also distracted by his own thoughts

Review the work samples and audio clips to the left of the screen to help you determine which aspects of Attention are causing Ian problems and which are functioning okay or even well.

Rate Ian on a continuum of weakness to strength for each aspect of Attention by placing a mark on each bar. Click on the hints on the screen for assistance.

Mental Energy Controls

Processing Controls

Production Controls

Putting the Pieces Together

Ian, 16 years old *(continued)*

Choose the strategies you think would be appropriate for Ian based on his Attention profile. Check all that apply.

- ❑ Allow for movement during work time, such as standing at desks or using fidget objects (like a bean bag that won't roll or bounce)
- ❑ Provide partially completed graphic organizers or lecture outlines for note-taking; embed cues in graphic organizers or outlines, such as numbering slots for key details
- ❑ Create purposeful breaks such as collecting papers, passing out materials, erasing the board, or posting lesson objectives
- ❑ Provide self-monitoring practice through error detection games, such as giving completed math problems and having students identify and correct errors
- ❑ Coach and reinforce the use of stepwise plans for solving math problems, including: picking a strategy, estimating the answer, performing calculations, and comparing the answer to the estimated answer
- ❑ Give advanced warnings about important upcoming information, such as presenting information in numbered lists (like, "I'm going to tell you about 3 important ideas today. First, …")
- ❑ Employ directed reading activities to promote deeper engagement with the text in which students need to find certain pieces of information
- ❑ Provide practice identifying key details in math word problems by giving problems that have a large number of extra details that students have to eliminate
- ❑ Have the student keep track of "mind trips" on a score sheet of some kind and provide rewards for increasing amount of time on-task
- ❑ Provide practice with thinking ahead and making predictions about social situations, such as by posing questions like, "What would happen if …?"

Additional strategies (optional):

Putting the Pieces Together

Ben, 8 years old

Ben …

- rushes through work
- rarely checks his work
- is quite impulsive

Review the work samples and audio clips to the left of the screen to help you determine which aspects of Attention are causing Ben problems and which are functioning okay or even well.

Rate Ben on a continuum of weakness to strength for each aspect of Attention by placing a mark on each bar. Click on the hints on the screen for assistance.

Mental Energy Controls

Processing Controls

Production Controls

Putting the Pieces Together

Ben, 8 years old *(continued)*

Choose the strategies you think would be appropriate for Ben based on his Attention profile. Check all that apply.

- ❑ Allow for movement during work time, such as standing at desks or using fidget objects (like a bean bag that won't roll or bounce)
- ❑ Display "speed limit" signs to guide pacing for particular tasks, such as 50 mph for playing and downtime, 40 mph for reading for fun, 30 mph for reading directions, 20 mph for making a plan and working, and 10 mph for checking work; remind the whole class what the speed limit is for the task at hand
- ❑ Provide self-monitoring practice through error detection games, such as giving completed math problems and having students identify and correct errors
- ❑ Separate task stages so that relatively little work is done during a given work session
- ❑ Pair students with partners who can help maintain alertness and vigilance through frequent interaction, task sharing, dialogue, and checking each other's work
- ❑ Coach and reinforce the use of stepwise plans for solving math problems, including: picking a strategy, estimating the answer, performing calculations, and comparing the answer to the estimated answer
- ❑ Have the student keep track of "mind trips" on a score sheet of some kind and provide rewards for increasing amount of time on-task
- ❑ Provide practice with thinking ahead and making predictions about social situations, such as by posing questions like, "What would happen if …?"
- ❑ Emphasize a staged writing process that segments tasks: topic selection, brainstorming, data collection, planning, organizing and outlining, initial drafting, elaborating, revising, editing, rewriting, and proofing
- ❑ Give plenty of positive reinforcement whenever the student inhibits impulses and make good choices in social situations; explain why choice were good

Additional strategies (optional):

Glossary

Attention	Network of controls over brain performance, including mental energy, processing of incoming information, & regulation of output
Alertness	Vigilance for intentional intake of information
Cognitive Activation	Using incoming information to trigger new ideas & connect with prior knowledge & experience
Energy Flow	Reliability of cognitive energy supply
Facilitation-Inhibition	Appropriate response inhibition; consideration of options for action, suppression of ill-advised output prior to acting or starting a task
Focal Maintenance	Appropriately sustaining, transitioning, & dividing focus on incoming information (sometimes called attention span or sustained attention)
Mental Energy Controls	Functions regulating the initiation & maintenance of cognitive energy flow for learning, work, & behavioral control
Mental Exertion	Energy allocation for cognitive work
Pacing	Working or acting at a rate that is appropriate to the task, without rushing
Previewing	Anticipation of likely outcomes (e.g., of plans, actions, events, & statements)
Processing Controls	Functions regulating the processing of incoming information
Processing Depth-Detail	Intensity of focus for interpreting & storing incoming stimuli/information
Production Controls	Functions regulating the quality of academic output & behavioral control
Reinforceability	Use of previous experience & prior knowledge to guide current action
Saliency Determination	Discrimination between more & less important inputs (sometimes called selective attention)
Satisfaction Level	Capacity to focus on activities or topics yielding only moderate or low levels of excitation; relative need for intense stimulation & gratification
Secondary Attention Weakness	Behaviors or challenges that may appear to be due to weak attention, but is actually caused by something else, like weak language or memory
Self-Monitoring	Observing one's own output & work (in process or after the fact) in order to detect mistakes or deviations from goals so as to make necessary modifications
Sleep-Arousal Balance	Regulation of sleep/wake cycles

Additional Resources

To learn more about attention and the neurodevelopmental framework:

- Use the *Neurodevelopmental Framework* on the All Kinds of Minds website *www.allkindsofminds.org/researchreviews.aspx*
- Use the "Glossary" on the All Kinds of Minds website *www.allkindsofminds.org/glossary.aspx*
- View the *Developing Minds* video series *www.shop.wgbh.org/category/show/1062*
- Read *A Mind at a Time* by Dr. Mel Levine

To learn more about assessing learning problems:

- Read *Revealing Minds* by Dr. Craig Pohlman
- Read *How Can My Kid Succeed in School?* by Dr. Craig Pohlman

To find more strategies to help struggling learners:

- Use the "LearningBase on the All Kinds of Minds website *www.allkindsofminds.org/learningBase.aspx*
- Read *Educational Care* by Dr. Mel Levine