

Processing Deficits, Accommodations and Specialized Instruction Strategies

| <i>Psychological Processing Deficit</i> | <i>Observable Behaviors Associated with Deficit</i> | <i>Accommodations to consider</i> | <i>Specialized Instructional Strategies to consider</i> |
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| <p><u>Executive Functioning</u> -includes the brain-based functions that involve mental control and self-regulation. Executive functions are analogous to a maestro of an orchestra, while the rest of the cognitive processes comprise the band itself. Executive functioning guides the management of our internal resources to achieve a goal.</p> | | | |
| <p><u>Attention control</u> - the ability to maintain attention to a situation or task in spite of distractibility, fatigue, or boredom. Difficulty maintaining concentration</p> | <ul style="list-style-type: none"> • Developmentally inappropriate levels of attention • Fails to complete work or activities on time • Stops work before finished • Switches frequently between activities, including play activities • Difficulty listening to information presented aloud • Distracted by things happening in proximity while completing activities • Overly focuses on the small parts, often failing to complete the big project • Difficulty eliminating extraneous information (during note taking, story listening....) • Disorganized (including in written work) • Difficulty maintaining attention to steps to complete a task • May give the impression they are not listening or has not heard what has been said • Disruptive behaviors • Difficulty organizing materials | <ul style="list-style-type: none"> • Use an incentive system to encourage on-task behavior • Use “if-then” or “first-then” plan to encourage focus on non-preferred tasks • Provide self-monitoring checklists • Write start and stop times on assigned tasks • Break tasks into smaller subtasks • Provide short breaks • Use a timer • Make tasks interesting by using a variety of instructional modalities • Provide praise when on-task • Provide outlines for note taking • Provide concept maps, formula cards, checklists, lists of steps • Provide a quiet location for the student to go work • Add visual cues (color coding and emphasis marks) to bring attention to important information • Maintain a structured environment with defined procedures • Provide seating to allow for reduced distractions | <ul style="list-style-type: none"> • Teach self- monitoring strategies • Teach organizational strategies- especially reading organization strategies for comprehension • Teach the use of: <ul style="list-style-type: none"> -Procedural checklists -To do lists -Schedules -Calendars -Charts -Various graphic organizers to teach concepts -Rubrics -Visual study aids -Self-monitoring charts - Self-talk strategies • Teach students to break large tasks into steps-backward plan |

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| <u>Attention control (cont.)</u> | | <ul style="list-style-type: none"> • Provide sequential instructions • Provide visual or verbal redirections | |
| <p><u>Cognitive Flexibility</u>- the ability to think flexibility and be able to alternate to solve complex or novel tasks</p> <p>Common Academic Impact: Math, Writing</p> | <ul style="list-style-type: none"> • Difficulty transitioning between tasks or within tasks • Difficulty coping with unforeseen events • Perseveration on the same idea • Easily upset by changes in plans or disruptions • Struggles with open-ended tasks • Doesn't try multiple approaches to solving problems • Excessively "rule bound" • Difficulty changing approach to a problem • Difficulty brainstorming | <ul style="list-style-type: none"> • Provide cues for transitions • Decrease the speed, volume or complexity of information presentation • Break tasks into manageable components • Adapt open-ended tasks to make them more closed • Provide student with templates or rubrics • Provide a step by step break down for task completion • Provide a warning before transitions occur • Provide cues for taught coping strategies • Provide a location for self calming • Provide visual cues for routines and schedules • Highlight changes and help the individual build a bridge from what he/she knows to what is not known • Create consistent and predictable environments | <ul style="list-style-type: none"> • Pre-teach material; Review prior knowledge before teaching new material • Teach a framework for "walking through" new situations and changes- including self talk and when and how to gain assistance • Teach using a "think aloud" strategy • Teach coping techniques • Teach brainstorming techniques |

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| <p><u>Planning/ Prioritization-</u> the ability to evaluate a task and plan a strategy to solve a problem and reach an answer</p> <p>Common Academic Impact: Math, Reading Comprehension, Writing</p> | <ul style="list-style-type: none"> • Difficulty completing tasks in a timely manner • Often starts tasks without fully understanding requirements or needed materials • Difficulty deciding what needs to happen first, second, etc. • Difficulty following a timeline for completion • Can't organize an activity • Can't complete tasks in order of priority • Difficulty previewing material • Writing is often disorganized and non-sequential • Difficulty making a logical argument | <ul style="list-style-type: none"> • Provide a plan, schedule or checklist to follow • Provide scoring rubrics • Break tasks into manageable components • Provide an organizational framework in advance <p>AT software that could help: Inspiration, Kidspiration, MindJet, MindManager</p> | <ul style="list-style-type: none"> • Teach student to create a plan, use an agenda, develop to-do lists and break tasks down to the key parts • Teach a framework for problem solving (think alouds) • Teach using visual mapping for brainstorming • Review assignments and model the planning process by talking it through out loud. Gradually switch to having the student lay out the plan while you take a coaching role helping only as needed. |
| <p><u>Goal-directed persistence/ goal setting-</u> the ability to identify a goal and follow through to the completion of the goal.</p> | <ul style="list-style-type: none"> • Doesn't stick with challenging tasks- gives up easily • Difficulty sustaining attention to tasks that aren't intrinsically interesting • Individual seems "future-blind" • Can't set mini-goals | <ul style="list-style-type: none"> • Provide with realistic concrete goals and remind student of progress toward the goal • Write start and stop times on assigned tasks • Break tasks into smaller subtasks • Use a timer • Reduce novelty by providing advance previewing of places, schedules, and activities • Provide external structure and frequent feedback | <ul style="list-style-type: none"> • Teach student to backward plan and break tasks into smaller completion goals • Teach student to create a plan, use an agenda, develop to-do lists and break tasks down to the key parts • Teach a framework for problem solving (think alouds) |

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| <u>Goal-directed persistence/ goal setting (Cont.)</u> | | <ul style="list-style-type: none"> Allow the student to set a personal goal and self-monitor | <ul style="list-style-type: none"> Review assignments and model the planning process by talking it through out loud. Gradually switch to having the student lay out the plan while you take a coaching role helping only as needed. Teach the process of self-review and analysis of behavior |
| <u>Response Inhibition-</u> the ability to stop and think before acting and to resist the urge to respond to distractors. This ability allows one the tome to evaluate a situation and how a behavior might affect it. | <ul style="list-style-type: none"> Difficulty with distractibility and/or impulsiveness Difficulty with delayed reward Often speaks before thinking | <ul style="list-style-type: none"> Provide external reinforcement for appropriate behavior and choices Minimize distractions Provide visual and/or verbal reminders and cues for expected behavior Reduce access to setting or situations in which the student can get into trouble Seat instructionally in a location that allows for greater adult supervision Maintain frequent proximity | <ul style="list-style-type: none"> Teach “Stop and Think” strategies Teach social strategies Teach replacement behaviors Teach self-monitoring strategies |
| <u>Metacognition/ Self-Monitoring-</u> the ability to stand back and take a bird’s eye view of one-self in a situation, includes the ability to assess one’s performance and progress towards a goal. Includes knowing when, how, where, and why to apply a particular cognitive strategy. | <ul style="list-style-type: none"> Difficulty recognizing they are failing to understand what they are reading Difficulty comprehending the “big picture” or main idea Difficulty summarizing Asks for help rather than attempting to solve a problem | <ul style="list-style-type: none"> Prompt student to use analytical skills by embedding questions designed to elicit metacognition (how did you solve that problem?) Build error monitoring into tasks (have students show they have checked their work) | <ul style="list-style-type: none"> Use metacognitive modeling strategies Teach social/ behavioral perspective taking skills Teach the use of tools and techniques to improve monitoring such as checklists for repetitive tasks. |

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| <p><u>Metacognition/ Self-Monitoring- (Cont.)</u></p> <p>Common Academic Impact: Math, Reading Comprehension, Writing</p> | <ul style="list-style-type: none"> ● Difficulty using strategies to plan, write, and revise written expression ● Avoids problem-solving tasks | <ul style="list-style-type: none"> ● Provide checklists to help the student monitor his/her performance ● Provide concept maps ● Use a scoring rubric to define what a quality product or assignment will include (exemplar) ● Provide positive reinforcement | <ul style="list-style-type: none"> ● Teach goal setting by having the student set a goal and teach them to rate their performance ● Use think aloud to model ● Use conferencing ● Teach student to check answers in math by using concepts of opposite operation, estimation ● Teach problem-solving strategies (i.e. QDPAC) ● Teach self-monitoring strategies (SQ3R, clink or chunk, COPS) |
| <p><u>Emotional Control</u></p> | <ul style="list-style-type: none"> ● Has frequent tantrums ● Overreacts to small problems ● Has frequent mood changes ● Becomes overly anxious ● Temper flares quickly ● Is slow to recover from disappointments ● Shuts down | <ul style="list-style-type: none"> ● Anticipate problem situations and prepare the student for them ● Structure the environment to avoid the problem situations ● Break tasks into smaller steps | <ul style="list-style-type: none"> ● Teach coping strategies ● Teach positive self-statements and model appropriate use |
| <p><u>Task Initiation:</u> The ability to begin projects without undue procrastinations in an efficient or timely fashion. The ability to begin or start a task.</p> | <ul style="list-style-type: none"> ● Needs reminders to get started on classwork or homework ● When one task is completed, slow to start on another one ● Waits for someone else to begin in group activities ● Needs cues to begin over-learned routines | <ul style="list-style-type: none"> ● Provide verbal cues to get started ● Use a visual cue to prompt start ● Note start and stop times when tasks are completed ● Use a timer | <ul style="list-style-type: none"> ● Instruct and model through early portions of tasks |

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| <p>Organization: The ability to arrange or place things according to a system</p> | <ul style="list-style-type: none"> ● Has a messy work area ● Materials are disorganized or messy (notebooks, backpacks, etc.) ● Unable to locate belongings when asked ● Difficulty producing an organized written work (writing, math problems) ● Fails to turn in assignments that he/she indicates are complete ● Difficulty making a logical argument | <ul style="list-style-type: none"> ● Provide a visual model of an organized notebook, backpack, etc. ● Provide color coded cue for organizational structure ● Provide a shell for practice organizing written products ● Use of graph paper for math problems ● Provide a second set of books | <ul style="list-style-type: none"> ● Teach organizational strategies for belongings ● Teach strategies for organizing (using color codes, tabs in binder) ● Teach strategies for organizing written products (mapping, structured paragraph framework, essay shells) ● Model the use of graphic organizers and translating them into organized text |
| <p><u>Auditory Processing</u> -Ability to perceive, analyze, and synthesize patterns among auditory stimuli, and to discriminate subtle nuances in patterns of sounds and speech when presented under distorted conditions. It does not apply to what is received by the eardrum or to deafness, or being hard of hearing. Auditory processing includes phonological awareness, resistance to auditory stimulus distortion, and memory for sounds.</p> | | | |
| <p>Phonological Awareness/ Auditory Discrimination: Ability to break apart and blend sounds in words.</p> <p>Common Academic Impact: Basic Reading (Decoding), Reading Comprehension, Writing</p> | <ul style="list-style-type: none"> ● Difficulty understanding what is said ● Articulation errors ● Inability to hear different sounds in words, including the ability to identify words and sounds that are similar and those which are different (confusion between similar sounding words) ● Difficulty making out voices against background sounds ● Difficulty paying attention in class ● Difficulty recalling information present orally | <ul style="list-style-type: none"> ● Provide opportunities to explore and manipulate sounds, words, and language ● Assistive technology for electronic reader; spell check ● Provide opportunities for added practice ● Check for comprehension after group instruction provided ● Provide student guides for listening activities | <ul style="list-style-type: none"> ● Use direct phonic and phonological awareness instruction (explicit, systematic, synthetic phonics instruction) ● Provide visual strategies connected to text (Elkonin boxes that have the shape of letter for students to fill in) ● Teach multi meaning words by teaching grouping words and word sorts ● Incorporate Multi-sensory approaches ● Teach mnemonic strategies |

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| <p><u>Phonological Awareness/ Auditory Discrimination:</u> (Cont.)</p> | <ul style="list-style-type: none"> • Slow processing for orally presented information • Difficulty decoding while reading • Difficulty with rhyming, alliteration, oral imitation, songs • Difficulty assigning sounds to letters • Difficulty with dictation • Difficulty learning foreign languages | <ul style="list-style-type: none"> • Accompany oral information with visual materials (graphic organizers outlines cloze notes with lecture) • Read tests aloud • Allow use of place markers or a visual template • Provide copies of notes, concept maps and written copies of verbal information • Allow extra time for decoding • Minimize distractions and background noise • Simplify oral directions • Reduce penalty for spelling on in-class assignments • Gain student attention prior to delivery of information • Speak clearly without over exaggerating; adjust rate if needed • Reduce language or reading level of assignments as appropriate • Highlight or emphasize critical information | <ul style="list-style-type: none"> • Teach using manipulatives to represent phonemes and syllables • Teach sound blending using syllables • Provide previewing for new vocabulary |

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| <p><u>Auditory Sequencing/ Memory for Sounds:</u> Ability to remember tones, patterns, and voices for short periods of time. The ability to understand and recall the order of sounds and words.</p> <p>Common Academic Impact: Basic Reading), Reading Comprehension</p> | <ul style="list-style-type: none"> • Difficulty recalling words and sounds within words • Poor Spelling • Difficulty remembering or reconstructing the order of items in a list or the order of sounds in a word or syllables • Often appears to not pay attention to lecture • Difficulty following multi-step oral directions | <ul style="list-style-type: none"> • Deliver information in smaller units or portions • Provide additional repetition of instructions and information • Assistive technology for electronic reader; spell check • Check for comprehension after group instruction provided • Provide student guides for listening activities • Accompany oral information with visual materials (graphic organizers outlines cloze notes with lecture) • Read tests aloud • Allow use of place markers or a visual template • Provide copies of notes, concept maps and written copies of verbal information • Allow extra time for decoding • Minimize distractions and background noise • Simplify oral directions • Reduce penalty for spelling on in-class assignments • Gain student attention prior to delivery of information | <ul style="list-style-type: none"> • Teach chunking strategies • Model re-telling, paraphrasing, and summarizing • Teach incorporating multimodal presentation of information (visual, tactile, and auditory) • Use rehearsal strategies (rhymes, acronyms, anagrams, associations) • Incorporate Multi-sensory approaches • Model use of graphic organizers • Model highlighting of key concepts • Teach students to use self-monitoring checklists • Teach students to backward plan/ break tasks parts • Teach memory strategies • Use mnemonic aids and teach students to use them |

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| <u>Auditory Sequencing/ Memory for Sounds:</u> (Cont.) | | <ul style="list-style-type: none"> • Reduce language or reading level of assignments as appropriate • Highlight or emphasize critical information • Break tasks into sequential steps | |
| <u>Resistance to Auditory Stimulus Distortions:</u> The Ability to understand speech and language that has been distorted or masked in one or more ways. | <ul style="list-style-type: none"> • Difficulty filtering out background noise • Problems understanding directions in areas with a lot of background noise (hallways, cafeteria, playground) • Difficulty in group work when more than one person is taking | <ul style="list-style-type: none"> • Provide a quiet work area • Allow only one person to speak at a time • Have the student repeat directions back | |
| <p><u>Visual Processing</u> -Refers to the manipulation and memory of what we see- not actually vision, but problems in the processing of visual information by the brain. It is the ability to generate, perceive, analyze, synthesize, store, retrieve, manipulate, transform, and think with visual patterns.</p> | | | |
| <p><u>Visual Discrimination:</u> The ability to differentiate objects based on their individual characteristics</p> <p>Common Academic Impact: Math, Written Expression, Reading</p> | <ul style="list-style-type: none"> • Difficulty interpreting what is seen • Difficulty visually distinguishing one object from another • Difficulty in noting similarity between letters and words • Difficulty organizing the position and shape of what is seen • Difficulty distinguishing between look-alike words • Reversal of letters, numbers, or words | <ul style="list-style-type: none"> • Provide note taking assistance for accuracy • Reduce penalty for spelling on in-class assignments • Color code information presented visually • Provide index card or reading guide to follow print • Increase white space on handouts/worksheets/tests or reduce the amount of visual information on a page | <ul style="list-style-type: none"> • Teach strategies for self-questioning and self-monitoring, verbalizing each step • Use active verbalization for best memorization • Implement parts-to-whole verbal teaching approach • Teach the use of checklists for math processes • Teach students how to highlight key points • Partially cover a picture and ask the student to identify the whole |

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| <p><u>Visual Discrimination</u> (cont.)</p> | <ul style="list-style-type: none"> ● Problems with being easily distracted by competing visual information ● Problem distinguishing color, size, shape, and directions ● Inaccurate copying ● Inaccurate identification of symbols ● Trouble interpreting maps, charts, and graphs ● Difficulty finding specific information on a printed page ● Problems perceiving numbers as separate units ● Difficulty with concepts of size or orientation | <ul style="list-style-type: none"> ● Encourage the student to verbalize what he/she has seen (ex: remembering may be easier if he/she has a verbal description in his/her head) | |
| <p><u>Visual Sequencing</u>: difficulty telling the order of symbols, words or images.</p> <p>Common Academic Impact: Math, Written Expression, Reading</p> | <ul style="list-style-type: none"> ● Problems sequencing plots of stories ● Skips words, reads part of sentence out of order, or rereads parts of the same sentence ● Difficulty copying- reversals, omissions ● Spelling problems ● Difficulty following an equation | <ul style="list-style-type: none"> ● Provide note taking assistance for accuracy ● Reduce penalty for spelling on in-class assignments ● Color code information presented visually ● Provide index card or reading guide to follow print ● Increase white space on handouts/worksheets/tests ● Use graph paper to aide in aligning letters and numbers ● Allow the student to write on the same paper as the questions | <ul style="list-style-type: none"> ● Teach strategies for self-questioning and self-monitoring, verbalizing each step ● Use active verbalization for best memorization ● Implement parts-to-whole verbal teaching approach ● Teach the use of checklists for math processes ● Teach students how to highlight key Points ● Teach common visual pattern within words |

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| <p><u>Visual Sequencing (cont.)</u></p> | <ul style="list-style-type: none"> ● Loses place while reading, skips words, read words out of order, re-reads parts of the same sentence or selection ● Difficulty with fluidity of movement (ie getting out of the way of a moving item or knocking things over) ● Difficulty tracking | | <ul style="list-style-type: none"> ● Teach student to key in on headings within text ● Teach proof-reading strategies ● Teach to create an outline or an organizer prior to writing an essay |
| <p><u>Visual Motor Integration/ Spatial Ability:</u> Refers to the ability to accurately perceive objects in space with reference to other objects, including the ability to discriminate right from left, top to bottom and so on.</p> <p>Common Academic Impact: Math, Written Expression, Reading</p> | <ul style="list-style-type: none"> ● Problems coordinating and relaying information from visual input to involved sensory motor areas ● Impaired ability to orient body in space, especially in relation to other people and objects ● Problems with directionality, which can impair ability to track when reading and follow math equations ● Appears clumsy ● Illegible handwriting ● Inaccurate copying ● Difficulty organizing information on paper, including aligning problems and spacing correctly | <ul style="list-style-type: none"> ● Use highlighters, bumped lines to create stronger visual of line location ● Use of special paper to accentuate location of letters, letter parts on line (house paper, Theo Bear paper, etc.) ● Provide organizational assistance ● Allow/recommend use of word processor/ assistive technology ● Use of graph paper or paper with vertical lines for alignment of problems ● Provide note taking assistance ● Allow recorder for lectures ● Incorporate the use of graphic organizers, visual schedules, timelines | <ul style="list-style-type: none"> ● Model use of graphic organizers and methods of taking ideas from graphic organizers and translating them into organized text/sentences ● Teach, model, and practice color coding text for organization |

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| <p><u>Visual Motor Integration/ Spatial Ability:</u> (Cont.)</p> | <ul style="list-style-type: none"> ● Trouble transitioning between 2 sources of information (keyboard & worksheet) ● Eye-hand coordination problems ● Poor pencil grip ● Difficulties keeping up with materials ● Difficulties with geometry concepts | <ul style="list-style-type: none"> ● Provide extended time for writing assignments and tests ● Provide auditory prompts ● Incorporate the use of color overlays ● Allow desk copy for near point copying | |
| <p><u>Processing Speed</u></p> <p>-Refers to how quickly one can perform cognitive tasks, especially when under pressure to maintain focused attention and concentration. This is an aspect of cognitive efficiency, which has to do with both processing speed and working memory and determines how efficiently a student will process information and thus learn it.</p> <p>May include decision speed, rapid naming and psychomotor speed (movements of the body associated with mental activity).</p> | | | |
| <p>Common Academic Impact: Math, Written Expression, Reading</p> | <ul style="list-style-type: none"> ● Takes longer than average time to complete work ● Responds slowly to questions ● Struggles to make rapid comparisons between and among bits of information ● Has difficulty copying ● Has difficulty completing assignments within time limits ● Poor work completion ● Slow mental math skills ● Low fluency related to facts | <ul style="list-style-type: none"> ● Emphasize quality over quantity ● Allow additional time to complete in- class assignments, tests ● Allow additional time for verbal response ● Provide a cue before the student is called upon to answer ● Shorten repetitive tasks; eliminate repetitious practice when mastery is shown; chunk assignments ● Reduce volume of writing and copying in favor of quality | <ul style="list-style-type: none"> ● Teach time management strategies ● Teach self-monitoring strategies that focus students to set goals and rate their success related to timely completion ● Practice facts using flashcards and incremental rehearsal of facts ● Teach speed drills ● Model fluent reading by reading aloud and having the student match model ● Use choral reading ● Provide repeated readings ● Provide a preview of reading materials |

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| <p><u>Processing Speed</u> (cont.)</p> | | <ul style="list-style-type: none"> ● Provide a resource folder ● Consider using a cloze procedure on tests ● Adjust the length of take home work ● Consider assistive technology solutions <p>Use a timer to increase self monitoring and speed of completion</p> | |
| <p><u>Memory</u> Memory is the ability to store and recall information. Memory includes short-term and working memory.</p> | | | |
| <p><u>Short-term Memory</u>- The ability to recall information after a few seconds. Includes both visual and auditory</p> <p>Common Academic Impact: Math, Written Expression, Reading, Reading Comprehension</p> | <ul style="list-style-type: none"> ● Difficulty remembering multi-step verbal directions ● Problems remembering a series of information ● Difficulty with the initial mastery of material ● Difficulty with vocabulary development ● Problems copying information ● Weaknesses in transferring information from source to source ● Difficulty answering questions directly from text ● Problems writing dictated information ● Difficulty remembering information just heard or seen | <ul style="list-style-type: none"> ● Provide note taking assistance ● Reduce spelling penalty on in-class assignments ● Use of summarizing strategies ● Use of tape recorder for lectures ● Break down tasks into manageable parts ● Allow use of checklist for step processes ● Allow color coding ● Allow the use of a number line or calculator in math ● Provide copy of notes ● Write on tests or materials to eliminate transfer errors ● Use repetition of instructions and information | <ul style="list-style-type: none"> ● Deliver in formation in smaller units or portions ● Use multimodal presentation of information (visual, tactile, and auditory) ● Use stepwise approach to studying ● Use rehearsal strategies (e.g., rhymes, acronyms, anagrams, associations) ● Model re-telling, paraphrasing, and summarizing and think aloud strategies ● Use lists, notes, checklist, or memory plans ● Teach chunking strategies ● Teach summarization strategies ● Teach mnemonic aids ● Teach students how to use graphic organizers |

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| <p><u>Short-term Memory (cont.)</u></p> | <ul style="list-style-type: none"> ● Trouble taking accurate notes ● Poor spelling ● Poor test taking skills ● Appearing to "tune out" | | <ul style="list-style-type: none"> ● Teach linking strategies ● Teach color coding techniques ● Teach the use of drawings to aid memory |
| <p><u>Long-Term Memory</u> The ability to store and recall new or previously acquired information. It includes the ability to absorb newly presented information and to demonstrate subsequent acquisition of such information.</p> <p>Common Academic Impact: Math, Written Expression, Reading, Reading Comprehension</p> | <ul style="list-style-type: none"> ● Difficulties storing and retrieving previously experienced visual and auditory information ● Difficulty visualizing information ● Difficulty sustaining interest during visual or auditory presentations ● Difficulty memorizing poems, speeches, or facts ● Difficulties remembering details ● Problems with word retrieval ● Difficulty storing (encoding) and retrieving information ● Perform poorly when reviewing past material ● Perform poorly when asked to complete a variety of problems on several different concepts ● Forgets steps in algorithms such as long division, and have a hard time when solving multi-step problems ● Might do well on daily quizzes, but struggle on chapter exams containing the same material | <ul style="list-style-type: none"> ● For math, encourage use of a number line ● Reduce spelling penalty on in-class assignments ● Use of summarizing strategies ● Use of tape recorder for lectures ● Break down tasks into manageable parts ● Allow use of checklist for step processes ● Allow color coding ● Provide immediate feedback ● Provide lists of steps to facilitate recall ● Provide notes, reference sheets, formula cards or word banks ● Limit the number of new facts, words, and concepts in one session ● Emphasize concepts understood instead of memory for rote information in grading rubrics | <ul style="list-style-type: none"> ● Frequent review of information/ facts ● Teach by associating information with prior experiences and known information ● Summarize information in multiple modalities (Think-Pair-Share) ● Teach summarization strategies ● Teach mnemonic aids or chunking strategies ● Teach students how to use graphic organizers ● Teach linking strategies (Pair new concepts or information to be learned with meaningful stimuli or overlearned material). ● Teach color coding techniques ● Teach the use of drawings to aid memory ● Model/think-aloud procedural steps ● Provide over-learning |

Processing Deficits, Accommodations and Specialized Instruction Strategies

| <i>Psychological Processing Deficit</i> | <i>Observable Behaviors Associated with Deficit</i> | <i>Accommodations to consider</i> | <i>Specialized Instructional Strategies to consider</i> |
|---|---|--|---|
| <p><u>Long-Term Memory (cont.)</u></p> | <ul style="list-style-type: none"> ● Difficulty relating and linking information together ● Understand new information in class, but are uncertain how to proceed once they leave class | | |
| <p><u>Long-Term Storage</u> The ability to remember information and procedures that are used at some point after they are immediately taught. It includes the ability to store information and fluently retrieve new or previously acquired information from long-term memory. It also includes the ability to absorb newly presented information and to demonstrate subsequent acquisition of such information. This would be both with visual and auditory modalities.</p> <p>Common Academic Impact: Math, Written Expression, Reading, Reading Comprehension</p> | <ul style="list-style-type: none"> ● Difficulty storing (encoding) and retrieving information ● Difficulty retaining and retrieving information over time ● Weak performance on classroom examinations overlearned material ● Problems with idea production, ideational fluency, associative fluency, and generation of a response ● Difficulty relating and linking information together ● Slow acquisition of new skills ● Difficulty coming up with ideas for writing | <ul style="list-style-type: none"> ● Provide topic lists to aid pre-writing brainstorming activities ● Provide structured organizers to aid in connecting multiple ideas ● Provide extended time on tests and completion of classroom tasks ● Present questions prior to expecting a response ● Give student cheat sheet of frequently used equations ● Provide a word bank rather than require free recall of information ● Encourage the use of a number line | <ul style="list-style-type: none"> ● Frequent review of information/facts ● Pair new concepts or information to be learned with meaningful stimuli or overlearned material ● Teach mnemonic devices ● Teach Touch Math if math is impact. ● Teach for overlearning |

Processing Deficits, Accommodations and Specialized Instruction Strategies

| <i>Psychological Processing Deficit</i> | <i>Observable Behaviors Associated with Deficit</i> | <i>Accommodations to consider</i> | <i>Specialized Instructional Strategies to consider</i> |
|---|---|---|---|
| <p><u>Working Memory</u>- Ability to temporarily store and perform a set of cognitive operations on Information that requires divided attention and the management of limited capacity of short-term memory. It is a conscious process that involves the manipulation of information. Working memory is one of the most fundamental processes in learning. Through working memory, one connects input to output, as well as prior knowledge to new information. It thus affects one's ability to encode new information into long-term memory in all areas.</p> <p>Note: Cognitive Efficiency has to do with both Processing Speed and Working memory and will determine how much and how efficiently a student will process information and thus learn it.</p> <p>Common Academic Impact: Math, Written Expression, Reading, Reading Comprehension</p> | <ul style="list-style-type: none"> ● Difficulty following multi-step directions ● Failure to use strategies while studying ● Difficulty paraphrasing and summarizing information ● Difficulty with vocabulary development ● Difficulty with multi-step problems ● Weaknesses with keeping track of steps within math problems (e.g". long division, equation s) ● Poor retrieval of math facts ● Poor fluency due to poor retrieval of phonological information ● Difficulties with mental math ● Forgets assignments or parts of assignments ● Forgets to bring materials to or from school ● Forgets to hand in homework ● Loses or misplaces belongings ● Forgets to do chores ● Forgets part or all of verbal directions for tasks or chores ● Forgets classroom procedures | <ul style="list-style-type: none"> ● Provide a stepwise plan to follow during multiple-step problem solving or procedures (e.g. ,. during regrouping, division) ● Provide storage devices such as agenda, calendar, electronic organizer or recorders ● Use cueing devices such as verbal reminders, alarms on watches, visual cues, sticky notes in prominent locations, visual models of multi-step problem, word banks ● Provide visual organizers ● Check for comprehension at strategic points ● Use a tape recorder to record ideas prior to writing ● Provide AT such as word prediction or concept mapping tools (Draft builder, Co-writier...) ● Allow for use of a calculator, written formulas, or math fact lists to decrease the student's need to rely on mental computations | <ul style="list-style-type: none"> ● Teach to verbalize while solving problems and summarize at strategic points ● Teach use of a number line or calculator ● Direct instruction of strategies: Mnemonic devices, visual imagery, self-talk, and/or self-monitoring strategy ● Model use of self-talk strategies such as verbalizing while solving problems and summarize at strategic points. ● Teach reading comprehension active reading techniques such underlining , using a highlighter, re-reading, marking important parts, writing on margins of books, using sticky notes while reading, reading to a tape recorder and listening to what was read ● Review prior knowledge before teaching new information ● Teach self-monitoring strategies for <ul style="list-style-type: none"> ○ Organization ○ Comprehension ○ grammar |

Processing Deficits, Accommodations and Specialized Instruction Strategies

| <i>Psychological Processing Deficit</i> | <i>Observable Behaviors Associated with Deficit</i> | <i>Accommodations to consider</i> | <i>Specialized Instructional Strategies to consider</i> |
|---|---|--|---|
| <p><u>Working Memory (cont.)</u></p> | | <ul style="list-style-type: none"> ● Have fewer problems to complete, focusing on accuracy ● Allow the use of a word processor for easier editing ● Provide visual/written output of lectures so that the student can follow along and take additional notes ● Allow student to create a “cheat sheet” to be used during various assessments ● Provide attention cues ● Simplify directions and explanations ● Provide concept maps ● Use color coding to highlight critical ideas | |
| <p><u>Fluid Reasoning</u> Fluid reasoning is the ability to think flexibly and problem solve. This area of reasoning is most reflective of what we consider to be general intelligence. Specifically, fluid reasoning refers to the mental operations that an individual uses when faced with a relatively novel task that cannot be performed automatically. Fluid Reasoning includes <i>nonverbal reasoning, sequential and quantitative reasoning, categorical reasoning, successive processing, and simultaneous processing</i></p> | | | |

Processing Deficits, Accommodations and Specialized Instruction Strategies

| <i>Psychological Processing Deficit</i> | <i>Observable Behaviors Associated with Deficit</i> | <i>Accommodations to consider</i> | <i>Specialized Instructional Strategies to consider</i> |
|--|---|--|---|
| <p><u>Fluid Reasoning</u> (cont.)</p> <p>Common Academic Impact: Math, Written Expression, Reading Comprehension</p> | <ul style="list-style-type: none"> ● Difficulty generalizing or making connections between new material and acquired knowledge Limited problem solving skills in new and everyday situations ● Difficulties seeing the big picture and how things relate to each other ● Problems understanding and evaluating opinions/views of others ● Problems troubleshooting and figuring out how things works ● Difficulty representing concepts in multiple ways ● Struggles with the establishments of purpose and perspective ● Poor inferential and predictive skills | <ul style="list-style-type: none"> ● Make use of graphic organizers to assist in unifying information and breaking information apart ● Integrate visual and verbal information to enhance learning ● Provide a problem-solving planner that sequences the questions that need to ● be asked when approaching a problem ● Use graphic organizers ● Provide cues for identifying main concepts ● Provide an outline of content to be covered in the lesson. ● Adjust difficulty in level of materials to child's ability level – Concepts should be thoroughly explained with numerous examples. ● Allot sufficient time for review and practice, as well as time to share and discuss ideas. | <ul style="list-style-type: none"> ● Use teacher demonstrations with a think-aloud procedure followed by guided practice with feedback ● Teach problem-solving strategies ● Use cooperative groups and reciprocal teaching to help with perspective taking and exposure to different problem solving methods ● Teach mnemonic strategies ● Specifically teach the way a concept can be represented multiple ways |
| <p><u>Nonverbal reasoning</u> the ability to make sense of tasks without necessarily using words.</p> | <ul style="list-style-type: none"> ● Appears awkward and inadequate in fine and/or gross motor skills | <ul style="list-style-type: none"> ● Provide notetaking assistance ● Allow/suggest use word processor | <ul style="list-style-type: none"> ● Teach student to use procedural checklists for math solution processes ● Link to prior knowledge |

Processing Deficits, Accommodations and Specialized Instruction Strategies

| <i>Psychological Processing Deficit</i> | <i>Observable Behaviors Associated with Deficit</i> | <i>Accommodations to consider</i> | <i>Specialized Instructional Strategies to consider</i> |
|---|---|---|---|
| <p><u>Nonverbal reasoning (cont.)</u></p> <p>Common Academic Impact: Math, Written Expression, Reading Comprehension</p> | <ul style="list-style-type: none"> ● "Talks his way" through simple motor activities ● Has exceptional memory for rote material ● Has difficulty "reading" body language ● May not understand the operation of mechanical devices | <ul style="list-style-type: none"> ● Give step-by-step directions presented visually and/or auditorily ● Break tasks into manageable parts ● Provide checklists for math solution processes ● Allow extended time for writing assignments and tests ● Incorporate the use graphic organizers ● Preview vocabulary ● Provide cues for summarization | <ul style="list-style-type: none"> ● Use summarizing strategies; teach summarization strategies ● Pre-teach or preview vocabulary ● Teach students to break large tasks into steps-backward plan <p>Use metacognitive modeling</p> |
| <p><u>Abstract Reasoning:</u> the ability to process ideas that involve complex visual or language-based ideas that are not easily associated with concrete ideas. Abstract ideas are often invisible, complex and subjective.</p> <p>Common Academic Impact: Math, Written Expression, Reading Comprehension</p> | <ul style="list-style-type: none"> ● Has difficulty generalizing and drawing inferences ● Has difficulty solving unique problems ● Has difficulty categorizing, comparing, and contrasting ● Is verbally expressive and does well with concrete thinking ● Can repeat but not follow directions ● Has good decoding skills but poor comprehension | <ul style="list-style-type: none"> ● Provide lists of steps for problem solving ● Check for understanding of abstract concepts individually before pairing with another ● Preview vocabulary | <ul style="list-style-type: none"> ● Teach incorporating concrete examples ● Use manipulatives to develop concepts ● Teach activating prior knowledge ● Pre-teach or preview vocabulary ● Teach reading comprehension strategies ● Teach visualization strategies ● Use metacognitive modeling |

Processing Deficits, Accommodations and Specialized Instruction Strategies

| <i>Psychological Processing Deficit</i> | <i>Observable Behaviors Associated with Deficit</i> | <i>Accommodations to consider</i> | <i>Specialized Instructional Strategies to consider</i> |
|--|--|---|---|
| <p><u>Verbal Reasoning and Knowledge (Crystallized Intelligence)</u> Verbal reasoning and knowledge generally reflects one's vocabulary and overall knowledge of the world. A variety of experiences and exposure to education influences development in this area. Specifically, verbal reasoning and knowledge refers to the breadth and depth of a person's acquired knowledge of a culture and the effective application of this knowledge. It includes vocabulary development, verbal reasoning, language skills as well as the ability to listen, comprehend, and express oral communication.</p> | | | |
| <p>Common Academic Impact: Written Expression, Reading Comprehension, oral language, math reasoning</p> | <ul style="list-style-type: none"> ● Word finding problems ● Poor organization ● Limited vocabulary ● Developmentally inappropriate quality and quantity of language; Difficulty using precise language to effectively communicate ideas; Redundant word use ● Limited verbal responses ● Lack of background information to relate new material to across subject areas ● Difficulty remembering facts due to lack of ability to relate the new information to background knowledge | <ul style="list-style-type: none"> ● Use a quick vocabulary book or reference wall; provide a glossary of important terms ● Chunk information ● Create a language and experience rich environment (e.g., label items in the house, name sights on the road, talk through activities, etc.) ● Provide visual cues and visual representations; Use visual aids (e.g., story maps, formulas, etc.) ● Allow use of graphic organizers ● Provide cues for summarization ● Provide word banks ● Provide copies of notes (During lecture to follow along or after class to supplement student notes) | <ul style="list-style-type: none"> ● Use mnemonics to help retrieve knowledge ● Pre-teach vocabulary ● Teach activating prior knowledge; Link to prior knowledge ● Systematically teach new vocabulary ● Teach key verbs, such as those in the GPS, that appear in questions (e.g. demonstrate, analyze, synthesize) ● Use summarizing strategies; teach students to summarize ● Pre-teach or preview vocabulary ● Teach vocabulary strategies ● Use semantic mapping ● Model brainstorm activities |

Processing Deficits, Accommodations and Specialized Instruction Strategies

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|--|---|---|--|
| <p><u>Verbal Reasoning (Crystallized Intelligence) (cont.)</u></p> | <ul style="list-style-type: none"> ● Gaps in skills across areas due to knowledge and acquisition being dependent on exposure to information or specific curriculum ● Difficulty drawing inferences ● Problems finding main idea of passages ● May provide off topic or "random" responses to questions ● Difficulty generalizing ideas and vocabulary to new concepts <p>Difficulties with oral expression, including word retrieval and organization of thoughts</p> | <ul style="list-style-type: none"> ● Use organizers when writing or reading to help expressive skills and comprehension ● Provide study guides ● May need extended time for reading or writing tasks ● Rephrase instructions or questions ● Allow "think time" when responding to questions ● Highlight key words or facts ● Ensure test items do not include vocabulary which is unfamiliar | |
| <p><u>Social Skills</u> A social skill is any skill facilitating interaction and communication with others. Social rules and relations are created, communicated, and changed in verbal and nonverbal ways. The process of learning these skills is called socialization.</p> | | | |
| | <ul style="list-style-type: none"> ● Perceives and interprets social situations inaccurately ● Is ineffective at recognizing faces, interpreting gestures, deciphering postural cues and "reading" facial expressions ● Is unable to perceive proximity and distance | <ul style="list-style-type: none"> ● Allow the use of procedural checklists, self-monitoring checklists ● Provide verbal, visual cues | <ul style="list-style-type: none"> ● Directly teach social skills ● Use role play, social autopsies, social stories ● Teach the use of procedural checklists for social situations, self-monitoring strategies/checklists ● Fade from verbal to visual cues in social situations |

Processing Deficits, Accommodations and Specialized Instruction Strategies

| <i>Deficit Area</i> | <i>Observable Behaviors Associated with Deficit</i> | <i>Accommodations to consider</i> | <i>Specialized Instructional Strategies to consider</i> |
|---|---|--|---|
| <u>Social Skills (cont.)</u> | <ul style="list-style-type: none"> ● Is unable to notice or distinguish between changes in tones and/or pitch of voice and/or emphasis of delivery ● May withdraw in novel situations ● Naively trusts others | | |
| <p><u>Motor Skills</u></p> <p>Fine motor skills are small movements — such as picking up small objects and holding a spoon — that use the small muscles of the fingers, toes, wrists, lips, and tongue. Gross motor skills are the bigger movements — such as rolling over and sitting — that use the large muscles in the arms, legs, torso, and feet.</p> <p>Motor skill deficiencies interfere with the ability to use and coordinate large and small body muscles in order to move and manipulate objects. These may or may not require related services from an occupational therapist or physical therapist. The determination for related services is dependent upon the impact of the skill deficit and the need for the related service in addition to specialized instruction already in place.</p> | | | |
| Common Academic Impact: Written Expression | <ul style="list-style-type: none"> ● Work often looks sloppy as if completed quickly and without much effort ● Inability to write clearly interferes with accuracy so written work may not reflect understanding ● Difficulties writing in small spaces ● Easily fatigued when completing written assignments | <ul style="list-style-type: none"> ● Minimize number of written requirements ● Orally assess understanding ● Provide a copy of notes ● Provide graph paper ● Increase white space ● Allow extra time from completion of written products ● Allow use of AT such as word prediction, speech recognition applications | |

Processing Deficits, Accommodations and Specialized Instruction Strategies

| <i>Deficit Area</i> | <i>Observable Behaviors Associated with Deficit</i> | <i>Accommodations to consider</i> | <i>Specialized Instructional Strategies to consider</i> |
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| <p><u>Language Skills</u> Language and communication skills include the ability to understand others (i.e., receptive language) and express oneself (i.e., expressive language) using words, gestures, or facial expressions.</p> | | | |
| <p><u>Expressive Language</u> describes how a person communicates their wants and needs. It encompasses verbal and nonverbal communication skills and how an individual uses language. Expressive language skills include: facial expressions, gestures, intentionality, vocabulary, semantics (word/sentence meaning), morphology, and syntax (grammar rules). It can be impacted by articulation.</p> | <ul style="list-style-type: none"> ● Inability completing rapid oral drills ● Difficulty counting ● Difficulty expressing thoughts orally ● Incorrect use of grammar or syntax ● May lack specificity in communication or jump from topic to topic ● Limited vocabulary ● May have difficulty with word finding ● Uses social language poorly ● Often does not provide enough information to the listener | <ul style="list-style-type: none"> ● Use concrete or pictorial representations to facilitate expression ● Limit amount of written expression required ● Help the student to summarize and redirect when rambling to return to main topic ● Model correct grammatical forms and have repeat when appropriate ● Allow extra think time when answering questions | <ul style="list-style-type: none"> ● Teach the student to construct sentences with targeted grammar structures |
| <p><u>Receptive Language</u> describes the comprehension of language. Comprehension involves attention, listening, and processing the message to gain information. Areas of receptive language skills include: attention, receptive vocabulary, following directions, and understanding questions.</p> | <ul style="list-style-type: none"> ● Difficulty relating words to meaning ● Difficulty with words that have multiple meanings ● Difficulty following oral directions ● Easily confused when irrelevant information is included ● Limited vocabulary ● Does not respond to questions appropriately ● May confuse similar words, or letters that sound the same ● Difficulty understanding humor or figurative language | <ul style="list-style-type: none"> ● Use a slower rate of speech ● Use concrete or pictorial representations to aide understanding ● Provide mnemonics ● Simplify directions ● Provide concept maps | <ul style="list-style-type: none"> ● Pre-teach vocabulary ● Teach using active construction of meanings ● Teach scaffolding information and providing visual/auditory supports ● Model “think alouds” ● Explicitly teach learning strategies ● Teach using multiple modalities ● Teach highlighting for key words, operations, problem solving and directions |

Processing Deficits, Accommodations and Specialized Instruction Strategies

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|-----------------------------------|--|-----------------------------------|---|
| <u>Receptive Language (cont.)</u> | <ul style="list-style-type: none"> ● Difficulty comprehending concepts related to quantity, function, comparative size, and temporal and spatial relationships ● Difficulty comprehending compound and complex sentences | | |