

Processing Disorders with Interventions

Further summary of cognitive abilities follows this table.

Cognitive Ability	Common Academic Weaknesses	Recommendations for Weakness in This Area
<p>Long Term Retrieval</p> <ul style="list-style-type: none"> • Storage and retention of information; • Ability to retrieve and use previously stored information 	<ul style="list-style-type: none"> • Basic Reading Skills • Reading Comprehension • Written Expression 	<ul style="list-style-type: none"> • Review, repeat • Multisensory teaching/learning strategies • Provide meaning • Limit amount of new information
<p>Auditory Processing</p> <ul style="list-style-type: none"> • Discrimination, analysis, and synthesis of auditory stimuli • Auditory attention, perception and discrimination despite background noise 	<ul style="list-style-type: none"> • Basic Reading Skills • Written Expression 	<ul style="list-style-type: none"> • Provide multisensory learning • Provide class notes and study guides • Use visual aids and graphic organizers • Use semantic or mental mapping techniques
<p>Phonemic Awareness</p> <ul style="list-style-type: none"> • Manipulation, analysis and synthesis of discrete sounds 	<ul style="list-style-type: none"> • Basic Reading Skills • Spelling • Written Expression • Basic Writing Skills 	<ul style="list-style-type: none"> • Teach phonemic awareness • Teach basic phonics rules • Teach spelling with reading • Emphasize patterns in words to be learned
<p>Visual Processing</p> <ul style="list-style-type: none"> • Perception, analysis and synthesis of visual stimuli • Storage and memory of visual stimuli 	<ul style="list-style-type: none"> • Not strongly related to achievement 	<ul style="list-style-type: none"> • Use manipulatives • Teach verbal mediation of visual/spatial skills

<p>Short Term Memory (Auditory)</p> <ul style="list-style-type: none"> • Processing and holding auditory stimuli in awareness • Manipulating/using it within a few seconds 	<ul style="list-style-type: none"> • Basic Reading Skills • Reading Comprehension • Math Reasoning 	<ul style="list-style-type: none"> • Review and repeat • Teach memory strategies • Keep directions short • Provide class notes • Use audiotape recorder to record class notes
<p>Processing Speed</p> <ul style="list-style-type: none"> • Rapid cognitive processing without higher order thinking • Attentiveness and fluency in processing 	<ul style="list-style-type: none"> • Basic Reading Skills • Written Expression • Math Calculation 	<ul style="list-style-type: none"> • Provide extended time • Emphasize quality over quantity in assignments • Use flash cards and timed drills • Teach skills to automaticity
<p>Verbal Reasoning</p> <ul style="list-style-type: none"> • Reasoning and comprehension using language • Verbal Expression • Vocabulary 	<ul style="list-style-type: none"> • Basic Reading Skills • Reading Comprehension • Written Expression • Math Reasoning 	<ul style="list-style-type: none"> • Teach vocabulary • Relate new information to already learned information • Provide context and background
<p>General Information and Knowledge</p> <ul style="list-style-type: none"> • Acquired knowledge • Long term memory 	<ul style="list-style-type: none"> • Basic Reading Skills • Reading Comprehension • Written Expression • Math Calculation • Math Reasoning 	<ul style="list-style-type: none"> • Teach vocabulary • Relate new information to already learned information • Provide context and background • Relate material to be learned to student interests and experiences

<p>Fluid Reasoning</p> <ul style="list-style-type: none"> • Inductive and deductive reasoning • Problem Solving on novel tasks 	<ul style="list-style-type: none"> • Reading Comprehension • Written Expression • Math Calculation • Math Reasoning 	<ul style="list-style-type: none"> • Review and repeat material to be learned • Use manipulatives • Teach problem solving skills • Guide learning step by step
<p>Quantitative Reasoning</p> <ul style="list-style-type: none"> • Understanding math concepts and relations 	<ul style="list-style-type: none"> • Math Calculation • Math Reasoning 	<ul style="list-style-type: none"> • Use manipulatives • Teach problem solving • Drill for automaticity on math facts • Use practical, every day math • Use calculators to teach, check work and when math concepts are the emphasis

Compiled by Sherry Mee Bell, Ph.D. Based on Mather, N. "Interpretation of the WJ-R Cognitive and Achievement Batteries, Workshop presented to Knox County Schools, October 1999 Retrieved 9/19/10 from http://ldlink.coe.utk.edu/understanding_report.htm

Summary of Cognitive Abilities

- **Auditory Processing** - discrimination, analysis and synthesis of auditory stimuli; perception and discrimination of speech sounds despite interfering background noise
- **Phonemic Awareness** - manipulation, analysis and synthesis of discrete sounds
- **Visual Processing** - (includes visual memory) perception, analysis and synthesis of visual stimuli; storage and memory of visually presented stimuli; mental manipulation of visual patterns
- **Long Term Retrieval/Memory** - storage and retention of information with ability to retrieve it at a later time
- **Short Term Memory** - processing and holding auditory information in awareness, then manipulating it within a few seconds
- **Processing Speed** - rapid cognitive processing without higher order thinking; attentiveness and fluency of simple information processing
- **Verbal Reasoning** - reasoning and comprehension using language, verbal expression, vocabulary
- **General Information/Knowledge** - acquired knowledge, long-term memory
- **Fluid Reasoning** - inductive and deductive reasoning, problem solving and concept formation on novel tasks that are nonverbal or limited in language demands
- **Quantitative Ability** - understanding mathematical concepts and relations

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