These resources on the relationship of CHC factors to learner characteristics are taken from Mascolo, Alfonso, and Flanagan (2014) Essentials of Planning, Selecting, and Tailoring Interventions for Unique Learners.

When a student has trouble with **Crystallized Knowledge you may note …**

COGNITIVE SKILLS DIFFICULTIES
- ❑ Vocabulary acquisition
- ❑ Knowledge acquisition
- ❑ Comprehending language or understanding what others are saying
- ❑ Fact-based informational questions
- ❑ Using prior knowledge to support learning
- ❑ Finding the right words to say

READING DIFFICULTIES
- ❑ Decoding (word not in student vocabulary)
- ❑ Comprehending (poor background)

MATH DIFFICULTIES
- ❑ Understanding math concepts and the "vocabulary" of math

WRITING DIFFICULTIES
- ❑ Grammar (syntax)
- ❑ Limited descriptors
- ❑ Inappropriate word use

LANGUAGE DIFFICULTIES
- ❑ Understanding lessons
- ❑ Expressive language – Poverty of Thought

Facilitating Learning by Bypassing or Minimizing Effects of Crystallized Learning Deficit

Classroom Instructional Factors	Instructional Materials	Environmental Factors	Strategies
Provides an environment rich in language and experiences	Contains chapter Glossaries	Word of the Day Calendar	Use KWL strategy to build background knowledge
Incorporates frequent practice with and exposure to words	E- Glossaries	Word Walls	Use context when reading to ascertain meaning
Reads aloud to children	Provides vocabulary building activities		Capitalize on opportunities to practice new words and purposively using them in conversation
Varies reading purpose	Contains tools for priming background knowledge	Distraction-Free Seating	Engage in activities such as word search containing related terms or customized crossword
Works on vocabulary building	Includes story starters	Closed doors	Write a new word and its definition along with a drawing
Capitalizes on opportunities to define words during instruction	Availability of video clips, real world examples		Apply word definitions as part of direct instruction (e.g. the composition of a rock, that means what it is made of…"
Includes supportive modalities (e.g., visuals, gestures) to increase understanding of language	Audio glossaries Pictures		Graphic organizers
Embeds instruction within a meaningful context	Dictionaries	Posting of contextual images of experiences, e.g., picture of neighborhood	Relate words to learner experiences and increase listening ability with classroom games
Develops vocabulary through naturalistic extension of language	Thesaurus		Model words with synonyms in conversation e.g., "Start"/"Begin"

When a student has trouble with **Long Term Retrieval** you may note …

COGNITIVE SKILLS DIFFICULTIES

- ❑ Learning new concepts
- ❑ Performing consistently with recognition vs. recall tasks
- ❑ Rapid retrieval of information
- ❑ Learning information quickly
- ❑ Paired learning (visual-auditory)
- ❑ Recalling specific information (e.g., facts)

READING DIFFICULTIES

- ❑ Accessing background knowledge to support new learning while reading
- ❑ Slow to access phonological representations while decoding
- ❑ Retelling or paraphrasing what one has read

MATH DIFFICULTIES

- ❑ Memorizing math facts
- ❑ Recalling math facts and procedures

WRITING DIFFICULTIES

- ❑ Accessing words to use while writing
- ❑ Note-taking
- ❑ Idea generation/production

LANGUAGE DIFFICULTIES

- ❑ Expressive – Circumlocutions, speech filters, pauses
- ❑ Receptive – Making connections throughout oral presentations

Facilitating Learning by Bypassing or Minimizing Effects of Long Term Storage and Retrieval Deficit

Classroom Instructional Factors	Instructional Materials	Environmental Factors	Strategies
Uses close-ended questions, yes/no, true/false	Guided lists for implementing procedures, formulas	Procedural charts	Organizes material to be learned using visual aids (e.g., diagrams, flow charts), auditory aids (e.g., chunking) or other tangibles (e.g., flash cards)
Uses consistent instructional routines	Practice guides	Word walls	Makes connections by relating material to be learned to oneself
Offers repeated practice with and review of newly presented information	Online review	Desk organizers	Relates concepts to be learned to one another via tools such as concept map
Teaches memory strategies and encourages their use	Glossaries (electronic, audio, printed)	External memory aids (lists, audible timers)	Creates a schedule fro distributed practice of material to be learned
Uses multiple modalities when teaching new concepts (pair written or visual with verbal information to support dual encoding)	Study guides	Calendars with visual references to due dates	Plans for regular review of material
Limits the amount of new material to be learned; introduces new concepts gradually with a lot of context	Review sheets	Visual reminders (post-its, color-coded systems)	Rehearses material to be learned via recitation, repetition
Makes associations between newly learned and prior information explicit	Thesaurus (to build vocabulary and minimize impact of retrieval weakness)	Preferential seating to minimize distractions	Use active learning strategies (e.g., note taking, flash cards, concept maps, chunking) in review sessions
Builds wait time for student when fluency is issue			Uses verbal association strategies (e.g., elaboration)

When a student has trouble with **Fluid Reasoning** you may note …

COGNITIVE SKILLS DIFFICULTIES

- ❑ Higher level thinking and reasoning
- ❑ Transfer or generalization of learning
- ❑ Finding solutions for novel problems
- ❑ Extending knowledge through critical thinking
- ❑ Perceiving and applying rules to solve problems

READING DIFFICULTIES

- ❑ Drawing inferences from text
- ❑ Abstracting main ideas

MATH DIFFICULTIES

- ❑ Reasoning with word problems
- ❑ Internalizing procedures and processes to solve problems
- ❑ Apprehending relationships between numbers

WRITING

- ❑ Essay Writing
- ❑ Compare/Contrast

Facilitating Learning by Bypassing or Minimizing Effects of Fluid Reasoning Deficit

Classroom Instructional Factors	Instructional Materials	Environmental Factors	Strategies
Use demonstrations to externalize the reasoning process (Think-Alouds)	Expanded answer keys containing the reason for correct/incorrect choices	Problem-solving charts (hanging or taped to desk)	Use metacognitive strategies (mnemonics that are *memorable* and that accurately represent the learning task)
Gradually offer guided practice (e.g., guided questions list) to promote internalization of procedures or process(es)	Guided lists for implementing procedures, formulas	Procedural charts/lists (hanging or taped to desk)	Use tools that help them categorize objects and concepts to assist in drawing conclusions (e.g., graphic organizers, concept maps)
Offer targeted, explicit feedback	Models, examples	Preferred seating arrangements that provide easy access to a peer model with strong reasoning skills (e.g., during cooperative learning activities)	Listen to and separate the steps in completing a problem from the actual content used in a problem
Offer opportunities for learning formats that allow for reasoning to be modeled for the student	Text features (boldface, italics)	Seat with peer models	Cooperative learning Reciprocal teaching
Compare new concepts to previously learned concepts (same vs. different)	Graphic organizers that allow for a visual depiction of relationships between and among concepts		Fisher and Frey
Use analogies, similes, metaphors, paired with concrete explanations, to support understanding when presenting tasks (e.g., "We are going to learn our math facts with lightning speed, that means we are going to learn fast")	Manipulatives to demonstrate relationships (e.g., part to whole relationships)		Identify concepts, words that will need to be pre-taught and modeled during the lesson

When a student has trouble with **Short Term Memory** you may note …

COGNITIVE SKILLS DIFFICULTIES

- ❑ Following multistep oral and written instructions
- ❑ Remembering information long enough to apply it
- ❑ Remembering the sequence of information
- ❑ Rote memorization
- ❑ Maintaining one's place in a math problem or train of thought while writing

READING DIFFICULTIES

- ❑ Reading comprehension (i.e., understanding what is read)
- ❑ Decoding multisyllabic words
- ❑ Orally retelling or paraphrasing what one has read

MATH DIFFICULTIES

- ❑ Rote memorization of facts
- ❑ Remembering math procedures
- ❑ Multistep problems and regrouping

WRITING

- ❑ Spelling multisyllabic words
- ❑ Identifying main idea in story

Facilitating Learning by Bypassing or Minimizing Effects of Short Term Memory Deficit

Classroom Instructional Factors	Instructional Materials	Environmental Factors	Strategies
Offers repetition of information	Practice guides	Color coded information	Apply rote strategies (e.g., basic rehearsal, simple repetition) for information to be learned in the short term
Reviews information and newly presented concepts often	Guided study	Math facts tables	Encourage use of relational strategies (mnemonics)
Delivers information in manageable parts	Online review	Written schedules	Use elaborative rehearsal (associating new information with prior knowledge)
Evidences use of consistent instructional routines	Flash cards	Visual schedules (e.g., pictures)	Semantic rehearsal (creating a sentence using things to be remembered)
Uses meaningful stimuli to assist with encoding and allow for experiential learning (i.e., learning while doing)	Multisensory materials to facilitate encoding	Written reminders (homework)	Chunking
Provides opportunities for repeated practice and review			Paraphrasing
Provides supports	Lecture notes, guided notes, study guides		
Highlights important information in a math problem			Apply specific academic strategies (e.g., write out all math computations, use a calculator, use a spellchecker)
Teaches chunking strategies			
Outlines procedures for student	Procedural guides Flash Cards		

When a student has trouble with **Auditory Processing** you may note …

COGNITIVE SKILLS DIFFICULTIES

- ❑ Hearing information presented orally, initially processing oral information
- ❑ Paying attention especially in the presence of background noise
- ❑ Discerning the direction from which auditory information is coming
- ❑ Discriminating between simple sounds
- ❑ Foreign language acquisition

READING DIFFICULTIES

- ❑ Acquiring phonics skills
- ❑ Sounding out words
- ❑ Using phonetic strategies

MATH DIFFICULTIES

- ❑ Reading word problems

WRITING

- ❑ Spelling
- ❑ Note-taking
- ❑ Poor quality of writing

Facilitating Learning by Bypassing or Minimizing Effects of Auditory Processing Deficit

Classroom Instructional Factors	Instructional Materials	Environmental Factors	Strategies
Enunciates sounds in words in an emphatic manner when teaching new words for reading or spelling	Video clips	Rules for talking and listening	Use comprehension monitoring (e.g., Does the word I read make sense in context?)
Uses instructional techniques (e.g. work preview/ text preview) to clarify unknown words)	Read aloud texts/features	Spelling lists	Engage in self-advocacy (e.g., asking for information to be repeated and/or clarified in regard to the misheard part)
Provides instructional supports (e.g., guided notes) during note taking activities	Audio glossaries	Closed doors	Physically positioning oneself toward/close to speaker
Shortens instructions	Phonemic awareness activities	Distraction free seating	Recording notes via audio methods to allow a mechanism for being able to fill in notes for completeness
Builds in time for clarification questions related to "missed" or "misheard" items during lecture	Supplement oral instructions with written instructions	Closed windows	Attending to speaker's mouth and/or gestures, facial expressions, during the delivery of information
Emphasizes sight word reading		Localize sound source for student be standing closer when delivering instructions	Use visualization strategies to remember things
Pauses when delivering oral instruction to allow time for student to process auditory information			Use written mediums (e.g., email, text) to preserve content/integrity of information communicated

When a student has trouble with **Processing Speed** you may note …

COGNITIVE SKILLS DIFFICULTIES

- ❑ Efficient processing of information
- ❑ Quickly perceiving relationships (similarities and differences between stimuli or information)
- ❑ Working within time parameters
- ❑ Completing simple, rote tasks quickly

READING DIFFICULTIES

- ❑ Slow reading speed, which interferes with comprehension
- ❑ Need to reread for understanding

MATH DIFFICULTIES

- ❑ Automatic computations
- ❑ Computational speed is slow despite accuracy
- ❑ Slow speed can result in reduced accuracy due to memory delay

WRITING DIFFICULTIES

- ❑ Limited output due to time factors
- ❑ Labored process results in reduced motivation to produce

LANGUAGE DIFFICULTIES

- ❑ Cannot retrieve information quickly – slow disrupted speech, cannot get out thoughts quickly enough
- ❑ Is slow to process incoming information, puts demands on memory store that can result in information overload and loss of meaning

Facilitating Learning by Bypassing or Minimizing Effects of Processing Speed Deficit

Classroom Instructional Factors	Instructional Materials	Environmental Factors	Strategies
Focuses on features of work products that are unrelated to time parameters (e.g., quality or accuracy of a response)	Practice guides	Clocks	Plan for long-term projects by using a realistic schedule that allows for consistent movement toward completion
Repeated practice	Online review	Written schedules	Preview important parts of text (end-of-chapter questions, title, subtitles, glossary of terms) to facilitate reading speed
Offers speed drills		Desk organizers	Apply planning and time management strategies
Extended time	Books on tape		Use an outlining strategy for note taking
Reduces the quantity of work required (including homework)	Online activities/games		
Increases wait times both after questions are asked and after responses are given			
Choral repeated reading			

When a student has trouble with **Visual Processing** you may note …

COGNITIVE SKILLS DIFFICULTIES

- ❑ Recognizing patterns
- ❑ Reading maps, graphs, charts
- ❑ Attending to fine visual detail
- ❑ Recalling visual information
- ❑ Appreciation of spatial characteristics of objects (e.g., size, length)
- ❑ Recognition of special orientation of objects

READING DIFFICULTIES

- ❑ Orthographic coding (using visual features of letters to decode)
- ❑ Sight-word acquisition
- ❑ Using charts and graphs within a text in conjunction with reading
- ❑ Comprehension of text involving spatial concepts (e.g., social studies text describing physical boundaries)

MATH DIFFICULTIES

- ❑ Number alignment during computations
- ❑ Reading and interpreting graphs, tables, and charts

WRITING DIFFICULTIES

- ❑ Spelling sight words
- ❑ Spatial planning during writing tasks (e.g., no attention to margins, words that overhang a line)
- ❑ Inconsistent size, spacing, position, and slant of letters

Facilitating Learning by Bypassing or Minimizing Effects of Visual Processing Deficit

Classroom Instructional Factors	Instructional Materials	Environmental Factors	Strategies
Provide oral explanation for visual concept	Video clips	Color-coded information	Uses orthographic strategies for decoding (e.g., word length, shape of word). Uses "cover-copy-compare" technique.
Reviews spatial concept and supports comprehension through use of hands on activities and manipulatives (e.g., using models to demonstrate the moon's orbital pattern)	Enlarged text (via online zoom feature or alternative print copy of textbook, worksheet)	Preferential seating aimed at allowing the student to access visual material (e.g., board) manipulatives, visual aids, and other materials to support learning	Capitalizes on intact or strong auditory skills during learning/studying (e.g., uses phonemic skills for decoding tasks)
Provides verbal label for visual representations (e.g., The red bars represent women's votes, the green bars represent men's votes on the graph)	Highlights margins during writing tasks	Assigned note taking buddy	Pairs visual information with verbal (mnemonics)
Provides written copies of oral instructions, lectures	Provides direct handwriting practice	Readers or scribes, where needed	Labels visual charts/graphs with verbal labels
Auditory cueing to supplement visual information (e.g., "Look at the bar graph for weekly sales")	Provides visual supports (graphic organizers, graph paper)	Reduce visual distraction	Highlights or color codes important information
	Provides graph paper to assist with number alignment	Alternative lighting (natural light)	Uses aids to support visual tracking
	Books on tape		Spaces items on a page
	Text-to-speech technology (screen and text readers)		Uses applications or supports that allow for enlargement of fonts
	Reading/scanning pens		Uses note-taking strategies