

## Representation: The “What” of Learning (input)

Possible Variability	<ul style="list-style-type: none"> <li>• Low vision</li> <li>• Poor visual/spatial understanding</li> <li>• Color blindness</li> <li>• Hearing impairment</li> <li>• Limited English proficiency</li> <li>• Deafness</li> </ul>	<ul style="list-style-type: none"> <li>• Difficulty processing and deriving meaning from spoken language</li> <li>• Blindness</li> <li>• Difficulty with: Word recognition</li> <li>• Word decoding</li> </ul>	<ul style="list-style-type: none"> <li>• Text structures/story grammar</li> <li>• Author style</li> <li>• Fluency</li> <li>• Difficulty or confusion with hypertext</li> <li>• Limited content knowledge</li> </ul>	<ul style="list-style-type: none"> <li>• Limited vocabulary</li> <li>• Tendency to literal interpretation</li> <li>• Difficulty finding important information</li> </ul> <p style="text-align: right;"><i>Not all possible variability listed</i></p>
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### Options for perception (to see hear and perceive information)

- 1.1 Offer ways of customizing the display of information  
1.2 Offer alternatives for auditory information

- 1.3 Offer alternatives for visual information



Examples	<ul style="list-style-type: none"> <li>• Large print</li> <li>• Visual guide</li> <li>• Use of headphones</li> <li>• Teacher/peer read aloud</li> <li>• Lecture/Small group</li> </ul>	<ul style="list-style-type: none"> <li>• Present information at slower rate</li> <li>• Demonstration</li> <li>• Colored transparency overlays</li> </ul>	<ul style="list-style-type: none"> <li>• Power Point</li> <li>• Wireless microphones</li> <li>• Document Camera</li> <li>• Web cam</li> <li>• Smart Board</li> </ul>	<ul style="list-style-type: none"> <li>• Text-to-speech</li> <li>• Layout of visual information</li> <li>• Prezi/Glogster</li> <li>• Provide manipulatives</li> </ul>
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### Options for language, mathematical expressions, and symbols (decode language, math and symbols)

- 2.1 Clarify vocabulary and symbols  
2.2 Clarify syntax and structure  
2.3 Support decoding of text, mathematical notation and symbols

- 2.4 Promote understanding across languages  
2.5 Illustrate through multiple media



Examples	<ul style="list-style-type: none"> <li>• Repeat information</li> <li>• Pre-teach vocabulary</li> <li>• Dual language representation (when applicable)</li> </ul>	<ul style="list-style-type: none"> <li>• Analogies</li> <li>• Manipulatives</li> <li>• Use diagrams/graphs</li> <li>• Aided questions</li> </ul>	<ul style="list-style-type: none"> <li>• Art</li> <li>• Models</li> <li>• Emphasize key words</li> <li>• Mnemonics</li> </ul>	<ul style="list-style-type: none"> <li>• Video</li> <li>• Clues</li> <li>• Flash cards with pictures/definitions</li> </ul>
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### Options for comprehension (make sense and understand knowledge)

- 3.1 Activate or supply background knowledge  
3.2 Highlight patterns, critical features, big ideas, and relationships

- 3.3 Guide information processing, visualization, and manipulation  
3.4 Maximize transfer and generalization



Examples	<ul style="list-style-type: none"> <li>• Highlight key words</li> <li>• Visual imagery</li> <li>• Mnemonic strategies</li> <li>• Project Based Learning</li> </ul>	<ul style="list-style-type: none"> <li>• Graphic organizers</li> <li>• Offer relevant examples</li> <li>• Sticky notes, templates, checklists</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce irrelevant features</li> <li>• Explicit prompts to teach sequential information</li> </ul>	<ul style="list-style-type: none"> <li>• Field trips (real and virtual)</li> <li>• Chunking information into smaller elements</li> </ul>
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## Action/Expression: The “How” of Learning (output)

Possible Variability	<ul style="list-style-type: none"> <li>• Fine motor difficulties</li> <li>• Gross motor difficulties</li> <li>• Hand-eye coordination problems</li> <li>• Poor handwriting</li> <li>• Speech impairment</li> <li>• Difficulty with oral presentations</li> </ul>	<ul style="list-style-type: none"> <li>• Written expression problems: Selecting/narrowing topics</li> <li>• Planning</li> <li>• Organization</li> <li>• Proofreading</li> <li>• Addressing audience</li> </ul>	<ul style="list-style-type: none"> <li>• Poor self-monitoring</li> <li>• Restless/fidgety</li> <li>• Difficulty seeking relevant information</li> <li>• Poor memory for spoken information</li> <li>• Poor spelling</li> </ul>	<ul style="list-style-type: none"> <li>• Poor memory for written information</li> <li>• Difficulty taking good notes</li> <li>• Trouble finding key concepts</li> <li>• Trouble prioritizing</li> </ul> <p style="text-align: right;"><i>Not all possible variability listed</i></p>
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### Options for physical action (do, move and interact)

- 4.1 Vary the methods for response and navigation

- 4.2 Optimize access to tools and assistive technologies





Examples	<ul style="list-style-type: none"> <li>• Slanted surfaces to position books</li> <li>• Correct size of desk and chair</li> <li>• Options for classroom placement and positioning</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrations</li> <li>• Labs</li> <li>• Alternatives for physically interacting with material (by hand, voice, single switch or joystick, keyboard)</li> </ul>	<ul style="list-style-type: none"> <li>• Oral report</li> <li>• Partner read</li> <li>• Dance/role playing</li> <li>• Interviews</li> <li>• Dictated text</li> </ul>	<ul style="list-style-type: none"> <li>• Portfolio</li> <li>• Keyboard commands for mouse action</li> <li>• Pen pals (paper pencil/online)</li> </ul>
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<b>Options for expression and communication (differentiate expression of knowledge)</b>				
5.1 Use multiple media for communication				
5.2 Use multiple tools for construction and composition				
5.3 Build fluencies with graduated levels of support for practice and performance				
Examples	<ul style="list-style-type: none"> <li>Allow wait time</li> <li>Templates</li> <li>Use of physical manipulatives</li> <li>Sentence starters, sentence strips</li> </ul>	<ul style="list-style-type: none"> <li>Music, visual art, sculpture</li> <li>Procedural checklists</li> <li>Calculators, geometric sketch pads</li> <li>Story webs, outlining tools</li> </ul>	<ul style="list-style-type: none"> <li>Differentiated models, mentors, feedback</li> <li>Compose in multiple media: text, speech, drawing, illustration, design</li> <li>Use of storyboards/comic strips</li> </ul>	<ul style="list-style-type: none"> <li>Netbooks</li> <li>Exit Slips</li> <li>Create videos</li> <li>Create games</li> <li>Group projects</li> <li>Word banks</li> </ul>
<b>Options for executive function (plan, strategize and initiate action)</b>				
6.1 Guide appropriate goal-setting		6.3 Facilitate managing information and resources		
6.2 Support planning and strategy development		6.4 Enhance capacity for monitoring progress		
Examples	<ul style="list-style-type: none"> <li>Data collection templates</li> <li>Graphic organizers/checklists</li> <li>Mentoring</li> </ul>	<ul style="list-style-type: none"> <li>Embedded prompts to stop and think before acting</li> <li>Offer cognitive shift opportunities</li> </ul>	<ul style="list-style-type: none"> <li>Before and after photos, graphs and charts showing progress</li> <li>Timelines</li> </ul>	<ul style="list-style-type: none"> <li>Portfolios</li> <li>Explicit teaching of goal-setting process</li> <li>Frequent feedback</li> <li>Student strategy sheets</li> </ul>

**Engagement: The “Why” of Learning (connection)**

Possible Variability	<ul style="list-style-type: none"> <li>Discouraged</li> <li>Over-confident</li> <li>Low expectation of success</li> <li>Difficulty working in groups</li> </ul>	<ul style="list-style-type: none"> <li>Difficulty working in pairs</li> <li>Fearful</li> <li>Withdrawn</li> <li>Domineering</li> </ul>	<ul style="list-style-type: none"> <li>Problems outside of school</li> <li>Gives up easily</li> <li>Difficulty with independent work</li> </ul>	<ul style="list-style-type: none"> <li>Tendency to clown around/disrupt</li> <li>“Turned off” to studying</li> </ul>
<i>Not all possible variability listed</i>				

<b>Options for recruiting interest (care, value and find relevance)</b>				
7.1 Optimize individual choice and autonomy		7.3 Minimize threats and distractions		
7.2 Optimize relevance, value, and authenticity				
Examples	<ul style="list-style-type: none"> <li>Give students choices relative to all aspects of lesson</li> <li>Use activities/information that is socially relevant and current</li> <li>Realia</li> </ul>	<ul style="list-style-type: none"> <li>Use charts, schedules, cues, etc. that help predict activities and transitions</li> <li>Provide tasks that allow for active participation, exploration and experimentation</li> </ul>	<ul style="list-style-type: none"> <li>Vary options for public display of presentations, evaluations, etc.</li> <li>Offer options to introduce surprises/unpredictable activities</li> </ul>	<ul style="list-style-type: none"> <li>Interest inventory</li> <li>Vary level of sensory stimulation (use workstations, headphones)</li> <li>Vary work pace, breaks, etc.</li> <li>Discrepant events</li> </ul>

<b>Options to sustaining effort and persistence (vary challenge and/or support)</b>				
8.1 Heighten salience of goals and objectives		8.3 Foster collaboration and community		
8.2 Vary demands and resources to optimize challenge		8.4 Increase mastery-oriented feedback		
Examples	<ul style="list-style-type: none"> <li>Options for working in teams</li> <li>Peer tutoring and support</li> <li>Movement breaks</li> </ul>	<ul style="list-style-type: none"> <li>Display concrete or symbolic versions of goal</li> <li>Divide long term goal to show objectives</li> <li>Vary degree of difficulty</li> </ul>	<ul style="list-style-type: none"> <li>Vary degree of freedom for acceptable performance</li> <li>Student generated charts, rewards, reading, and rules.</li> </ul>	<ul style="list-style-type: none"> <li>Project Based Learning</li> <li>Use of rubrics</li> <li>Experiments</li> <li>Authentic problem solving</li> </ul>

<b>Options for self-regulation (set goals, reflection and self-regulation)</b>				
9.1 Promote expectations and beliefs that optimize motivation		9.3 Develop self-assessment and reflection		
9.2 Facilitate personal coping skills and strategies				
Examples	<ul style="list-style-type: none"> <li>Learner diaries</li> <li>Goal-setting worksheets</li> </ul>	<ul style="list-style-type: none"> <li>Timer/rewards, positive feedback for staying on task</li> </ul>	<ul style="list-style-type: none"> <li>Models, scaffolds, feedback for emotional support and coping skills</li> </ul>	<ul style="list-style-type: none"> <li>Self-regulatory goals</li> </ul>