Chronic stress and trauma can result in substantial difficulties with self-organization and persistence. These complex tasks are managed by one’s executive functioning capacities, which are dependent on the brain structures that are most affected by trauma: working memory (being able to keep and use information over a short period of time), inhibitory control (filtering thoughts and impulses), and cognitive flexibility (adjusting to changing demands, priorities, or perspectives). This brief focuses on three areas of functioning commonly affected by students coping with a high cognitive stress load: memory and retention, focus and attending, and planning and organizing.

**Memory and Retention**

The parts of the brain responsible for memory and retention are directly affected by toxic stress and trauma, thus making it difficult to learn new knowledge, store it and retrieve in order to build coherent understanding of concepts. The most effective strategies to support students’ memory and retention is to move the learning from short term memory to long term storage by applying new knowledge to student’s own or other’s life experiences. Educators can use purposeful questioning as a way to elicit responses from students that connect to their lives.

**Planning for Instruction**

Plan thoughtful questions that bring the life experiences of the students in your classroom into your instruction – questions that open the door to student participation by focusing the learner’s attention on applying their current understanding to the instruction. Each success responding to classroom questions demonstrates to the students that they know how to think and have something to contribute, not only recalling facts. Here are some example questions that lie in shared experience so all learners can be led back to available evidence to find adequate answers even if they do not answer acceptably at first.
Focus and Attending

Students coping with stress and trauma may be consumed by thoughts of basic survival or intrusive thoughts. Focusing on academic content can be extremely challenging and may even feel like a betrayal. In this state of mind, the energy required to focus is much greater, and it can be difficult to attend to details and track an argument. Fatigue can set in much sooner than normal.

Strategies for Application

Strategies to support students with focusing and attending include establishing clear topics with key points ahead of time. Break up lectures into shorter chunks that can be delivered in under 20 minutes. Provide partially completed outlines with a visual anchor to follow along and return to when students’ minds wander. Pay special attention to signs of fatigue from students to offer breaks or redirect their focus as needed. Using breaks strategically requires being attuned to the state of one’s students and the signs and symptoms of losing focus or waning attention. The following chart gives signs and symptoms with corresponding types of breaks.

<table>
<thead>
<tr>
<th>Signs and Symptoms</th>
<th>Type of Break</th>
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<tbody>
<tr>
<td>Fatigue = yawning, drooping eyelids, slouching</td>
<td><strong>Brain Break</strong> – Our brains are wired for novelty, so brain breaks refresh our thinking and helps us discover another solution to a problem or see a situation through a different lens. During these few minutes the brain break actually helps to incubate and process new information.</td>
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<tr>
<td>Agitation = fidgeting, wiggling in seat, tapping, rocking</td>
<td><strong>Physical</strong> – Physical activity breaks are especially supportive for students coping with trauma. The practice requires support with co-regulation by the teacher, limited movements, or length of time (e.g., an activity designed for 5 minutes could be reduced to 1 minute).</td>
</tr>
<tr>
<td>Losing Focus = looking around or outside, staring off, asking off-topic questions</td>
<td><strong>Focused Attention</strong> – A focused-attention practice is a brain exercise for quieting the mind and learning to pay attention to our thoughts, feelings, and choices.</td>
</tr>
</tbody>
</table>
Sustained Attention

Students struggling under the weight of a high cognitive load have difficulty sustaining prolonged attention. Strategies to support students with sustained attention include shorter intervals between topics, frequent review of smaller segments of information, and checking for understanding often. Increasing student interaction with lecture content is an effective method of extending attention that otherwise might become tedious or cause students to fatigue. Actively engaging with verbally-delivered information taps into the positive energy boost that comes from social interaction, stimulates the brain by the variance in sensory input, and provides an immediate reward for attending. The following are examples of ways to support sustained attention when delivering information.

Methods of Extending Attention

Lecture/Rhetorical Questioning: Talk in 7 to 10-minute segments, pause, ask pre-planned rhetorical questions; learners record their answers in their notes.

Surveys with Exemplifier: Pause, ask directly for a show of hands for agreement/disagreement, whether it connects to their own experience or someone they know, ask one or two students to explain more.

Turn and Talk: Ask each student to turn to the person next to them and share examples of the point just made or complete a given phrase or sentence.²

Planning and Organization

The prefrontal cortex is the area of the brain primarily responsible for planning and organizing information and tasks – especially concepts of time. Students carrying a high cognitive load often struggle to keep up with multiple assignments, varied tasks, tracking due dates and managing projects. Expecting students to be able to generate the organizing strategies on their own can be too much for them to be successful.

Freeing Students to Focus on Learning

Strategies that lift the burden of organizing the work can support students to apply their energy to the task of learning. Some opportunities to support such students are providing graphic organizers or thinking maps, making explicit connections, and setting up electronic binders with preset folders. Microsoft Word offers a template for an electronic binder that could be set up for students to support them in keeping assignments organized and easy to retrieve. Google Docs also provides a way to use folders to create an electronic binder that can easily be shared between students and teachers. Strategies to support concepts of time include providing visual schedules, project planning calendars, and using timers.³
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1 Additional examples: Common Purpose: What is the purpose of.....? What is the usual function of.....?
   Procedures: How does one normally do......? How was this done? What is the normal (non-creative) next step?
   Possibilities: What else could .....? How could we......? If we didn't have, or couldn't use, ......,what could........?
   Prediction: What will happen next? What will you see? What will be the effect?
   Justification: How can you tell? What evidence led you to..?
   Theorizing: Why is it that way? What is the reason for it?

2 Additional examples: Pause: Present complex material or directions and then stop so learners have time to think or carry out directions. Ask for visible signal such as raised hands to confirm comprehension before moving on.
   Guided Lecture: Students listen to 15-20 minutes of lecture without taking notes. At the end, they spend five minutes recording all they can recall. The next step involves learners in small discussion groups reconstructing the lecture conceptually with supporting data, preparing complete lecture notes, using the instructor to resolve questions that arise.; Griffin, R.M., Keels, M., Staff, J. (November, 2017). Maintaining Student Engagement in the K-12 Classroom. Practice Brief #3. TREP Project.