Intangible Accommodations & Obstacles

Booting Up: The Hidden First Step of Problem-Solving

Most people think task initiation begins when they start working. In reality, task initiation begins much earlier. Before meaningful problem-solving can occur, you must familiarize yourself with relevant information and load it into working memory. When they have familiarized themselves with relevant information, many describe the experience as being in the flow. Many struggle to get into the flow, but once they do, they feel focused.

Getting into the flow is the process. By understanding it as a process, it can be managed more efficiently. It gives way to the idea of planning for it, allocating time, and gaining self-awareness around the most effective way to reduce the time needed to get in the flow. It also gives way to eliminate or mitigate interruptions, distractions, or the need to switch tasks to avoid having to reboot the process to get back in the flow.

For new problems or problems where you are starting from scratch, it is often helpful to remove yourself from distracting environments or away from easier tasks that would be an easy cognitive escape. Plan sufficient time and be mentally prepared to invest significant time in the process. For those with executive function impairments, it can be helpful to spread out all the information or do a brain dump of ideas to get started. It can be helpful to categorize concepts or ideas into an outline, mind map, dashboard, or other visual framework to map things out to make it easier to come back to where you were. Collaborating with others can be helpful to bring context and clarify ambiguity and related concepts to familiar ideas.

Outlines, mind maps, visual diagrams, reviewing what you have already done, retracing steps, looking at dashboards, summaries, or auditory recordings (doing a brain dump by talking into a recording for your future self to listen to) can be invaluable later as they can be cognitive shortcuts when going back to revisit a problem or to pick up where you left off. The idea is to consciously manage the process to increase efficiency and reduce the cognitive burden. Metaphorically, you don't want to completely reboot; you want to bring your brain out of sleep or hibernation mode.

Another way to reboot is cueing. Having someone ask you what you are to do, what is relevant, what is the goal. The idea is to get the person talking, engaging them in the thinking/booting up to get into the process of problem-solving. Talking with another person about what you are trying to accomplish can stimulate thinking, surface forgotten information, and help organize ideas. Simply telling someone, "I need to gather my thoughts," or, "I need to think through this

situation," can create an opportunity for questions and prompts that help load relevant information into working memory. In many cases, telling a story about the situation can help reconstruct context and spark recall.

Finally, it is important to support both booting and rebooting. Discussing a task with someone before beginning, reviewing notes from where you previously left off, rereading related materials, or listening to prior dictation can dramatically reduce the effort required to regain momentum. Scheduling longer periods of uninterrupted time and creating barriers to interruptions can also help preserve the mental context that has already been established.

Task initiation in the context of addressing a problem begins with familiarizing yourself with relevant information. This is cognitively effortful. Understanding it as a process and witnessing what helps and what cognitive shortcuts work best for you can reduce the cognitive load. With all this in mind, rather than judging yourself for not starting immediately, recognize that every complex task requires a startup sequence. Understanding and accommodating that process can make task initiation easier, more predictable, and ultimately more productive.

Cueing

"Cueing" is a term we use in Cog-Erg to describe the cognitive mechanism that helps individuals retrieve existing knowledge.

When working toward a goal, the individual must retrieve relevant knowledge from long-term memory and bring it into working memory so it can be used. Information retrieval processes can be inefficient, or impaired, especially under working memory constraints where relevant knowledge may exist but fail to surface.

A cue, typically in the form of a visual prompt, targeted question, or reminder, narrows the search space and provides a cognitive entry point that helps activate the appropriate memory networks. In this way, cueing supports the retrieval process by helping individuals access and organize knowledge they already possess rather than supplying new information.

For example, imagine you hear a familiar song and are asked to name it. You know the title, but it does not immediately come to mind. If you can hear the first few words of the song, however, the title often surfaces instantly. The cue did not provide the answer; it helped you retrieve information that was already stored in memory.

Working Memory Displacement

Working memory displacement is the loss of task-relevant information from working memory that occurs while navigating to find other information. In other words, when the demands of navigation exceed available working memory capacity, the original information is displaced.

The navigation process begins by loading information or knowledge into working memory from one source, holding it, and transporting it across digital space to locate resources, complete

tasks, or move between contexts. Examples include toggling between windows, scrolling, switching tabs, navigating menus, and task-switching.

These navigational demands consume the same limited working memory resources needed to maintain the original information. In other words, the cognitive demands of navigation compete for the same finite capacity required to keep active in mind task-relevant information.

Direct Oral Conversation

Direct oral conversation reduces the demands placed on executive functions during goal-directed thinking (two heads are better than one).

When working toward a goal, an individual must hold information in mind, retrieve relevant knowledge, organize thoughts, evaluate options, challenge assumptions, and maintain attention long enough to reach a conclusion. These processes rely heavily on executive functions and working memory.

For individuals with executive function impairment, these mental operations are often inefficient and cognitively demanding. Relevant information may fail to surface, ideas may be lost before they can be developed, and thinking may become fragmented under the burden of managing multiple pieces of information simultaneously.

Direct oral conversation provides adaptive relief by externalizing portions of the executive process into the environment. Rather than relying exclusively on internal executive functions, the individual uses the structure of the conversation itself to support thinking.

Direct oral conversation can:

- **Preserve Information:** Information that is spoken aloud is no longer dependent on the individual alone to maintain it. If relevant information is forgotten, displaced, or lost from working memory, the other person can recall it, repeat it, or bring it back into the discussion.
- **Provide Retrieval Cues:** The other person asks questions, makes observations, and references related information that serves as retrieval cues. These cues help activate relevant knowledge and memories that may exist but fail to surface independently.
- **Monitor the Thinking Process:** The other person listens for inconsistencies, omissions, contradictions, and faulty assumptions. They can identify issues that the individual may overlook while immersed in their own thinking.
- **Hold the Structure of the Discussion:** The other person helps maintain the sequence of the conversation, remembers what has already been discussed, identifies unresolved issues, and redirects attention back to the original objective when thinking drifts off course.
- **Reduce Information Management Demands:** Instead of requiring one person to simultaneously hold in mind all relevant information, relationships, assumptions, and

possibilities, portions of that information are maintained by the other participant and reintroduced when needed.

- **Provide Alternate Access Paths to Knowledge:** When information cannot be retrieved directly, the other person can ask questions, offer examples, reframe the issue, or approach it from a different angle, creating additional pathways that may lead to retrieval.
- **Maintain Goal Focus:** The other person remembers the objective and can redirect attention when the discussion becomes distracted, sidetracked, or consumed by less relevant issues.
- **Expand the Search Space:** The other person may notice possibilities, connections, or considerations that have not yet entered the individual's awareness and bring them into the discussion for evaluation.

As an accommodation for someone with an executive function impairment, the other person is not solving the problem. Rather, the conversation serves as an external cognitive support that reduces the executive burden associated with problem-solving. In the context of an impairment, this is not laziness, a crutch, or a shortcut but a legitimate accommodation, because it reduces the functional demands placed on impaired executive processes, allowing the individual to think more effectively and perform closer to their true capability