

## A Comparison Between Neurofeedback Focus training as in Mentalytics and Working Memory Training

### Neurofeedback Focus Training

- **Goal:** To improve sustained attention, focus, and self-regulation by teaching individuals to control their brainwave activity. While it can indirectly impact working memory by improving focus, its main goal is optimizing cognitive control and attentional processes.
- **Methods:** Neurofeedback relies on real-time brainwave monitoring. For focus training, the emphasis is usually on increasing beta wave activity (associated with alertness and concentration) and decreasing theta wave activity (linked to inattention or daydreaming). The participant uses visual or auditory feedback to adjust their brainwave patterns, improving focus and cognitive control.
- **Brain Engagement:** Neurofeedback targets different areas, including the prefrontal cortex and broader attentional networks, helping users regulate states of focus and attention. It influences neural circuits that govern concentration and task engagement.

**Example:** A person using neurofeedback might see a visual representation of their brainwaves. When they successfully concentrate, the image becomes clearer, signalling that they're achieving the desired brain state.

### Working Memory Training

- **Goal:** To improve the brain's ability to hold and manipulate information for short periods (a key function of working memory). Working memory is crucial for tasks like problem-solving, reasoning, and decision-making.
- **Methods:** Training programs often involve tasks like remembering sequences of numbers, shapes, or patterns, and performing mental operations on them. These tasks are designed to increase the capacity and efficiency of the working memory system.
- **Brain Engagement:** Working memory training focuses on strengthening the prefrontal cortex, which is the brain region responsible for managing information in real time. By repeatedly challenging working memory, these exercises are thought to enhance cognitive flexibility and information processing.

**Example:** A common working memory task might involve being shown a sequence of numbers and then asked to recall them in reverse order.



### Summary of Differences:

- **Working Memory Training** specifically targets the brain's ability to **hold and manipulate information** in real time, using structured cognitive exercises designed to challenge and expand working memory capacity.
- **Neurofeedback Focus Training** teaches individuals to regulate their **brainwave patterns** to achieve better focus and sustained attention, using real-time feedback about brain activity. Though it can support working memory indirectly through improved focus, it is not directly designed to increase working memory capacity.

The distinction is that **working memory training** is about expanding a cognitive capacity (manipulating information), while **neurofeedback focus training** is about controlling attentional states and improving concentration.