**Definitions**

**Executive function (EF)** refers to mental flexibility and the regulation of behavior. It enables memory updating and integration, overriding habitual behaviors, and paying attention to task-relevant information despite interference.

**Working memory (WM)** is one’s mental workspace—the small amount of memory that stores and manipulates information for ongoing use. Training WM hones EF abilities.

**CASL’s WM training** consists of 10–20 hours per week of performance-adaptive tasks for 3–6 weeks.

**Findings**

CASL’s studies on the effects of WM training showed that:

- Trainees performed significantly better on novel tasks of inhibition, WM, and understanding ambiguous material.
- Trainees’ comprehension, attention, and—to some extent—reasoning skills improved significantly. Untrained participants demonstrated no consistent change. Moreover, many of these benefits persisted for three months posttraining.
- Although some trainees improved more than others, those whose skills improved performed better on ambiguity resolution tasks.

**Relevance**

FLPs frequently encounter language that is ambiguous or otherwise difficult to process. WM training may improve their ability to process and comprehend such material, leading to fewer errors. Maintaining concentration and reducing distraction in the workplace are crucial and can prevent interpretation errors and facilitate problem solving. WM training promises to focus FLPs’ attention despite distractions.

**Products and Reports**

- A web-based executive function training regimen, under development in collaboration with Brain Plasticity Incorporated (to be released in 2011)
- *Assessing the effects of cognitive training: Improving individuals’ ability to reason, remember, and resolve sentence ambiguity* (September 2010)
- *N-back training task performance: Analysis and model* (Cognitive Science Conference report)
- *A temporally asymmetric Hebbian network for sequential working memory* (in press)
- *Clearing the garden-path: How executive function training improves sentence processing* (in preparation)

**Future research questions**

- True balanced bilinguals, people who are nearly equally proficient in two languages, naturally enjoy cognitive advantages. Do high-level FLPs also already have the cognitive advantages that intensive brain training promises?
- What subprocesses of WM improve with training? Does WM training targeting those processes make learning more efficient?

**For More Information**

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