

Module 2.2 Supporting Students with Memory Problems

Key Points: Memory's Impact in Learning Disabilities

- Memory is the storage room for experience and knowledge
- Important: There are many types of memory
- Without memory, the application of what is learned will not take place
- Understanding and comprehension will be greatly hampered by memory deficits

Memory: Important View

- “The purpose of memory is not to let us recall the past, but to let us anticipate the future. Memory is a tool for prediction.” Alain Berthoz
- While memory is our storehouse of past experiences and previous knowledge, it is a cognitive function that makes navigating life possible

Memory and Impact on Learning

- Neurocognitive Perspective: “Learning” takes place in the brain when we merge what we “know” with new information
- Learning involves linking our existing paradigms into new information-which is why we activate “prior knowledge” as an effective teaching technique
- Memory is “what we know”- letters, sounds, facts, sequences
- Memory is necessary for all learning

The Doorway to memory: Attention

- Attention and memory have a dependent relationship
- Without attention, information cannot be placed or encoded into memory in the first place
- Many memory problems may actually be attention problems

Is It Really a Memory Problem?

- Validate true memory deficits; may take several subtests or memory battery
- Standard Scores 85 and below- use 3 factor model
- Remember types of memory- LTM, WM, Verbal, Visual
- Rule out attention or determine co-morbidity

Research: Be Critical of Claims

- Research and scientific community are not conclusive on the effect of “interventions” to improve memory; many biased claims, but not replicated in scientific literature

- “Near-transfer” effects, not “far-transfer” effects (not always generalizable, domain specific)
- Accommodations are useful and practice, but use caution not to make very young students overly dependent (memory aids)
 - Use research-backed supports to the extent possible

Memory Supports: Expert Guidance

- Not necessarily scientific in a strict sense of RCT or correlational studies, but widely employed and accepted by experts as effective
- Attention orientation is key- memory + attention
- Student Motivation- use metamemory strategies; provide the “why” memory strategies are important for the student- make it personal to the student’s needs
- Reduce memory demands-reduce memorization
- Make learning emotional and personal (associations)
- Organize information so it makes sense (timelines, categories)

Intervention: Memory Evidence Based

- Retrieval based Learning
- Direct Instruction

Three Processes for memory Creation

- Encoding, Storage, Retrieval

New Research: Focus on Retrieval

- Retrieval is critical for robust, durable, long-term learning. Every time a memory is retrieved, that memory becomes more accessible in the future
- Practicing retrieval has been shown to produce more learning than engaging in other effective encoding techniques

Intervention: Retrieval-Based Learning

- Recent research has established that repeated retrieval enhances learning with a wide range of materials, in a variety of settings and contexts, and with learners ranging from preschool ages into later adulthood

Retrieval Learning in Practice

- Study information and practice recalling it
- Practice recalling information 3 more times
- Key: It’s important to space recall throughout practice sessions. Do not recall all at once

Intervention: Direct Instruction

- Daily review and checking of homework, along with review of relevant past learning and reteaching when necessary
- Presentations that are clear and structured with several demonstration, examples, and questions
- Main points are highlighted, and detailed, redundant instruction is provided as necessary
- Guided practice until a success rate of 80% is reached. The teacher asks questions to check for understanding, and additional explanations are provided. Corrective feedback continues until the student is independent
- Teacher supervises independent practice/rehearsal
- Weekly and monthly reviews are conducted that include systematic review of previously learned material

Intervention: Moderately Researched

- Mnemonics
- Keyword
- Visualization- especially for reading
- You teach me strategy
- Experiential learning
- Chunking

Accommodations

- Reduce memory demands
- Use of visuals/pictures to help cue memory
- Memory aids (with caution)
- Recognition test, not recall tests
- Provide copies of notes with keywords highlighted