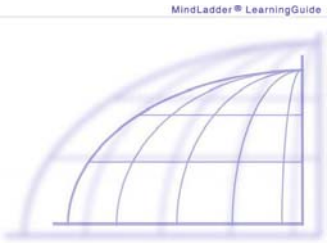

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T-8: Volitional Evoking from Memory

Memory is necessary to all learning. In the absence of memory we would have to keep learning the same content over and over again. Studies of diseases or trauma that affect the brain have provided a wealth of insights into situations where this in fact occurs. Information is normally recalled in one of two distinct ways: spontaneous and intentional. The spontaneous recollection of memories is based on associations between current and prior sensations in the mind. Conscious awareness of these associations is not necessary which gives this type of memory an involuntary quality: A scent, a gesture, a lilt can bring vivid memories back to mind.

We will use the term *associative* for the kind of memory that is experienced as involuntary. The other kind, the intentional one, we will call *analytical*. It is principally the analytical type of memory that is related to the development of the knowledge construction function. Prior to the mediation of this function the learner takes a more passive stance toward memory. The powerful experience of associative memory dominates: Memories just seem to appear on their own; they happen to you.

In the absence of this knowledge construction function students do not deliberately search memory as a way of securing access to previously stored knowledge, facts and impressions. The failure to retrieve and use their knowledge leads to poor performance. Yet their difficulty is often suspected of lying elsewhere as teachers tend to interpret poor tests results to mean that students didn't know and never learned. This conclusion is erroneous when instead the student doesn't remember because he is unschooled and unskilled in the ways information can be evoked from memory as the product of a volitional act.

Students need (1) to become aware that they have a way to access their fund of knowledge and (2) to become proficient in doing so: To mediate this knowledge construction function create situations in the classroom that call upon students to intentionally retrieve information from memory. “Children, think about the playground. Let’s use this brain tool (evoking form memory) to bring to mind what we know about the playground. I will list all the information here”. Or: “Think about a place you visited on your last vacation and recall as many details about this place as you can. Write them down. As you do so think about how you are using this knowledge construction function to help you bring your stored information back to mind.”

It is easy to come up with activities like the above that foster your students’ discovery that they have a degree of control over the process of retrieving information from memory. You and your students can list such activities on the board and go through them over a period of time. For example, the names of the country’s presidents, the names of the states, the names of the state capitols, the national anthem. The activities can be drawn from the curriculum. For example, vocabulary, definitions, concepts, sequences of events. Make sure the focus here is upon the development and exercise of your students’ ability to scan and recover information from memory. Have fun with these activities.

When mediating the development of this knowledge construction function focus also on the connection between retrieving and placing information in memory. It is easier to evoke information that is placed in memory with rich and meaningful associations. We can remember content we understand or associate with something else more easily than content which has no connections or meaning for us. Encourage active participation in learning events that require the students to assemble knowledge in meaningful contextualized ways. The active construction and meaning will aid the memory process. Therefore as you mediate the development of all the knowledge construction functions, you are helping your students to establish a strong base for memory development.

There is much you can do throughout your work in the classroom to help mediate students' abilities to both store information in memory and evoke it from memory. Language is a strong support for cognition. By using the words remember and memory, you can develop your students’ awareness of memory and its importance to learning. Use phrases such as, I'm so glad I remembered to bring the tickets for our trip to the zoo today." or "Do you remember where you put your book?" or "Today we are going to talk about some insects

that we learned about yesterday in our project groups. You will have to use your memory to answer these questions."

Other steps you can take to mediate the development of storing and evoking from memory are:

a. Discuss with your students ways that help one to remember things such as (1) association (connecting something to what you already know) like "The date I need to remember is the same as my birth date." or "The number I need to remember for next week is my sister's age." (2) categorizations (using groupings to aid recall) like fruits, animals and furniture. "I have three animals and two fruits to remember." (3) abbreviations or acronyms such as, for example, COP stands for Career Orientation Program. (4) rhyming and music or rhythm - "A shirt hat and tie are the things I need to buy." (5) rehearsal (practicing over and over). This is good for rote level tasks such as telephone numbers, lists of things and multiplication tables. (6) Visualization (imagining or seeing something in your mind) such as "I can see the way the word looks in my mind, p-r-i-n-t." (7) chunking (breaking down information into smaller units) such as 527139 become 52-71-39. (8) using different senses like writing down spelling words or using flash cards to aid visual memory as well as repeating the spelling of words out loud.

b. Encourage your students to recall information by giving them tasks that require evoking from memory. For example, have your students recall and give back to you directions after you have given them or tell a short story and have the students repeat the story. Emphasize that they must use their memories to do this. Also, using rhymes, songs, drama and poetry are good tools that encourage and enable students to use their memories. Children love singing, reciting rhymes and poems and acting in dramas and all of these activities can help to develop and support memory and recall.

c. Have your students come up with situations that highlight the need to evoke information from memory (e.g. solving problems on a test, performing in a play, losing your map on a trip, getting around the house in a blackout, recalling a telephone number in an emergency, getting back to your car in a parking lot, connecting clues in an investigation, finding misplaced objects).

Keep in mind that memory is a developmental process and as the brain develops and matures from infancy through adolescence, the ability to remember becomes more and more efficient. It is also important to know that when a student is anxious, worried or fearful about something, memory can be affected because the child's

attention is disrupted and very little information may get into the child's system. The factors that can interfere with the ability to store information can also interfere with the ability to evoke from memory for the same reasons.

A word about forgetting and not remembering: We often say we forget when, instead, we don't remember. We lump them together because they produce the same result: Either way we don't have the information we need. Yet forgetting and not remembering are not the same: In the first, forgetting, the trace of the event is gone. In the second, not remembering, we are unable to access the trace. Studies using direct stimulation of the brain, hypnosis and other techniques have found that memory traces often are present even if they are difficult or impossible to access. In this area there are also changes over time. As people grow older they commonly complain of decreasing ability to retrieve stored information they know is there. In other words, they know they are not forgetting. They know that they are not remembering. This experience, unsettling as is it, affirms the existence of the function of volitional evoking from memory. The 'tip-of-the-tongue' phenomenon provides another experience where the failure to retrieve desired information makes people aware of the knowledge construction function they are trying to use. Interestingly, when this occurs we can often draw aid from the associative type of memory. When we do so we stop trying so hard to remember. We instead let our minds wander and, when it works, the desired piece of information suddenly pops into mind. Quite something isn't it!