Printout of MindLadder[®] Advisor Section B-5[•]



R-1: Closure

Closure is the ability to appropriately deal with task parameters by remaining open to the process of acting upon them. If closure is impaired it affects the collection of information. Premature closure is when the student rejects tasks out of hand. This is usually the result of a student's past experience with similar tasks that resulted in a painful sense of failure or incompetence. The student expects to fail so he does not try. Premature closure reduces opportunities to learn and if it becomes prevalent the student will shun all tasks in the affected areas. For example, a student who has failed at reading and feels a sense of futility or hopelessness in that area will push away a book when he sees it and refuse to even look at it. Overdue closure occurs when students delay leaving a task. Its manifestations range from lingering to perseverating to blankly staring. Premature and overdue closure both impede the forward movement of the mental act. Although this knowledge construction function is largely determined by emotional factors, it represents the cognitive element in the formation of an avoidance response.

To mediate this knowledge construction function with your students first discuss our senses and how we use them to collect information: Sight, hearing, touch, smell and taste. Your students will likely be familiar with the senses from regular curricular activities. They may have explored the sense of sight by describing objects to others who cannot see them or by investigating items when blindfolded. With noses pinched and eyes closed they may have tried to identify fruits and vegetables (apple, tomato, orange, lemon, pineapple, carrot, celery, grapefruit) or liquids (water, vinegar, milk, and fruit juices) by taste alone.

Activities that highlight our senses are always fun and instructive and you may wish to integrate some with your mediation of this knowledge construction function. Even so, when we develop this

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function it is important that we focus upon the cognitive and distinguish it from the perceptual. In other words, the emphasis here is not upon developing knowledge of the senses but upon the development of the cognitive capability to switch them on and off and to do so in a manner that suits the need for collecting information in different situations. As with all the knowledge construction functions the emphasis is on the development of a capability along with a propensity to use it that derives from insight and understanding.

Have your students come up with examples of different situations where the knowledge construction function of closure is important. From the perspective of the opening of an aperture have the students discuss the length of time that would be adequate, neither too short nor too long. Have them think about the senses that are involved in each situation. Here are some examples:

Getting instructions to someone else's home. What would happen if we didn't use this knowledge construction function correctly and shut our reception systems down before getting all the instructions (we would lose our way)? Which of our senses might be involved: Sight (written instructions, maps), hearing (oral instructions)?

Preparing a meal while following a recipe: What would happen if we shut our reception systems down in the middle of following the recipe? Which of our senses might be involved: sight (reading the recipe, seeing pictures of what the dish is supposed to look like, seeing smoke), hearing (sounds of overcooking, food blowing up in the microwave), smell (burned food, smoke), taste (bad food)?

Here are some other situations: (1) You have a cough, (2) You hear a noise in the night, (3) You get a letter, (4) You do a math problem, (5) You read an essay. Which of the senses are involved? How long should the mind's lens, the brain's aperture, remain open? Imagine different situations where it will be important to keep the brain's aperture open long enough but not too long. For example, a doctor needs to monitor a patient long enough to make an accurate diagnosis but not so long that she misses what could be critical opportunities to provide treatment. Think of ways society adopts rules to prevent premature closure such as in the courts where juries have to hear the case both from the prosecutor's and from the defense's point of view and each side has the right to cross examine the witnesses from the other side. Think about the rules for appeal.

In the classroom learning environment you can imitate the effects of premature closure by artificially manipulating the amount of time students are exposed to information. For example, you can display information (pictures, text, math problems, maps) on an overhead for brief intervals of time and then cover it up. Use different intervals of time. Have your students discern and discuss the brain's need for time to remain open and how learners, within limits, can regulate this aspect of their own functioning. Take a look at the limits: Discuss with your students how affective and motivational factors can influence the way we use this knowledge construction function. What can happen if we are pressed for time? What can happen if we are anxious? Or tired and hungry? What can happen if we believe we can't do the task? What can happen if we feel the task is boring? (See also T-1: Stream of Consciousness).

In your mediation aim for your students to develop an understanding of the different factors that influence the opening and closing the mind's lens. Have them use this knowledge to regulate some how long they keep their mind's lens open in different situations (e.g. watching a speech on TV, reading a book). Have them take control of and practice the use of this knowledge construction function as you work with problems across the subject areas in the academic curriculum. Talk about their experiences after they take a test or a quiz and have them discuss how successful they felt in using this function when they were under pressure.

A special note: Many students display problems with closure after they have acquired an understanding of this knowledge construction function and its use. Recurrent closure problems provide a sensitive barometer that indicates the need for students to develop other knowledge construction functions. We observe premature closure when a poor reader pushes the book away but it is the student's difficulty with reading that causes this to happen. We observe overdue closure when the poor math student stares blankly at the problems on the page. But it is the problem with math that causes this to happen. The closure problem is a manifestation but not a cause of the root problem. Even so, the closure difficulty can compound the root problem by precluding access to it. How then to deal with it? This question is answered next.

When observing a recurrent closure problem collect all the clues and hints that it will offer about the difficulty the learner has encountered. You will often be able to determine quite easily the general content area that elicits the premature closure (e.g. reading 6^{th} grade essays, math – long division). Now take this content area and backward map it to identify the various knowledge construction functions that are needed to operate on it (for examples of backward mapping see section A-5). Reading (T-18) and math (T-19), for example, each

relies on other knowledge construction functions such as sequencing (T-10) or establishing relationships (T-14).

What you need to do is to begin to mediate the development of these knowledge construction functions and, initially, you need to do this using tasks and learning opportunities that *do not* resemble the type of task that elicits the closure problem. In other words, it is usually easiest, and best, to use tasks which on their surface have little if anything to do with the type of task that has become associated with a closure problem. The MindLadder dynamic assessment tools provide a large variety of such tasks that are specially designed to be used with mediation to develop the range of knowledge construction functions. Learning events in the classroom can be used just as well as long as you can develop the underlying knowledge construction functions.

The next step, once these functions have been developed, is to bring them into the area, such as reading or math that initially was accompanied by premature or overdue closure. Once the knowledge construction functions have been embedded in these areas the closure problem should subside and disappear. In fact you can use the change in the closure problem as an indicator of your and the learner's progress.

In sum, recurrent closure problems are usually indicative of underlying processing difficulties. These can best be addressed in a two-step process. The first step is to develop the functions that are needed. This is best done using tasks that are not associated with past failure or using the specially prepared MindLadder assessment tools. The purpose is to equip the learner with the requisite knowledge construction functions without encountering the negative aspects revealed by the recurrent closure problem. After the student has developed the needed functions, the student can then be reintroduced to the content area knowing that he has developed the functions he needs to perform successfully. You then can observe how the student uses the knowledge construction functions in the original area of difficulty - and how well the student handles the issue of closure.