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



T-3: Pre-analysis

This knowledge construction function is used to scope out the probable nature of a problem, to surmise what the problem might be. A learner who is proficient at pre-analysis can often tell you a whole series of possibilities that might explain a problem. "What do you think might explain the fact that the pot boiled over?" "The temperature might have been too high, we left it on the burner too long, we added too little water to begin with, we put the lid on too tight". A student may be able to experience a problem (T-2), but if he cannot construe its probable nature, he will not know how to begin to approach it.

Pre-analysis identifies possibilities and directions of inquiry that perhaps might explain a problem. The process relies on clues that conceivably may lead to a fuller understanding of the nature of the problem: Perhaps one or more clues will bear fruit. Yet again, perhaps none of them will and some previously unknown or wholly unsuspected factor will emerge instead. Pre-analysis guides the investment in the Reception functions (see T-4) by creating the hypotheses that frame the context for their use.

Prior to developing this knowledge construction function students will have only a vague and ill formed sense of how to initiate the investigation of a problem: What to look for? What to pay attention to? What to ignore? Where to begin? Having difficulties bridging the gap between recognition and investigation of a problem many learners flounder at this very early stage.

To develop this knowledge construction function involve your students with specific problems and ask them to come up with as many possibilities to explain them as they can. "What do you think caused the natives to abandon their village?", "How do you think the toad got into the schoolhouse?" "Where do you think the water will

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go after the downpour?" Emphasize that it is fine to cast a wide net of possibilities ('brainstorming') as each suggestion can be subjected to closer analysis later. Enable students to get a sense of how in their own minds this brain tool is needed to form the preliminary hypotheses that are used to guide the more systematic search for an explanation to a problem.

Divide your students into groups and have them do a pre-analysis of a problem. You can use the same problem or give each group a different problem. You can also have the groups come up with their own problem. "Find something you are all curious about and then think of as many different ways as you can to approach this problem." (For example: Do penguins have knees? What happens when water boils?, How does a cavity develop in a tooth?) Have the groups share their problem and the results of their brainstorming with the whole group. Above and beyond the particular problems have students discuss the role of this brain tool in the process of learning and knowledge acquisition. Guide them to the discovery that they can control and apply this knowledge construction function at will to any situation: "OK, here is the problem, here is the mystery, let's look for the clues and see how we can uncover its secrets and get started!"