

Metacognition: Are Your Learners Really Thinking About The Content?

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Metacognition is a term that is not often discussed in academic circles, particularly when discussing achievement considerations, but it should be. For learning to occur, learners must be able to reflect upon what they currently know and consider how the new information is applicable to them or the task they are completing. Most importantly, learners begin to think about their own thinking processes involved in the task and what it means to them. To move the information from short-term memory, the brain must make several strong connections with existing information. Processing information can be matched with metacognition strategies in outcomes-based curriculum design and facilitation. The metacognition process requires the learner to sort, reflect, evaluate, and apply the information in meaningful

ways.

The challenges of incorporating metacognition strategies into the curriculum and an institution-wide initiative include:

1. Teacher and professor focus on rote learning concepts, including memorization and superficial learning techniques.
2. Teachers and professors not knowing how to include, or are reticent for including opportunities for metacognition in their instruction.
3. Students not understanding the value of certain metacognitive exercises, or not knowing how to properly complete a learning task that includes such strategies.
4. Distractions in the digital information-age, the need for instant gratification, and busy schedules that may direct adult learners away from engaging in rich, metacognitive tasks.



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For true learning to occur, learners must reflect on their knowledge and the skills they need to acquire to advance and succeed.

Teachers and student alike must be shown how to use certain strategies to enhance the metacognition process. Thinking Maps® developed in the 1980's by David Hyerle; mind maps, graphic organizers, advance organizers, and marginal notes can be effective tools for completing the metacognition process. These tools have been used successfully in the classroom to assist learners with not only processing information for

deeper understanding, but also to succeed on high-stakes testing. In both affluent and socioeconomically disadvantaged high schools, I taught learners to use Thinking Maps® at the very start of the semester. After months of practice, the learners found these tools to be very useful for developing understanding in multiple subjects. By the time they were preparing for the New York State Regents examination, they were masterful with

using the maps to prepare for the essay portion of the exam.

The metacognition process described above can be visualized by the learners as they used the Circle Map to quickly brainstorm everything they knew about the topic they were to write about. Using other Thinking Maps®, including the Tree Map, the information was organized into main ideas in the form

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of tree limbs, including supporting ideas. The learners even used a Venn diagram or a Double-bubble Thinking Map® to compare and contrast for the critical thinking process, or other maps to sequence the information prior to beginning the writing process. These same strategies can be taught at the college level, along with teaching learners to stop and pause when reading to evaluate their own understanding. The use of marginal notes is a metacognitive process that must be stressed to learners, but rarely is. Reflecting on one's thoughts while reading the material and then later comparing these thoughts with other information on a global scale sets the learner up for success for problem solving, researching, or writing.

Many institutions of higher learning, most recently Harvard University (Harvard Magazine Inc., 2012), are recognizing that

their professors may not be aware of how to employ student-centered or outcome-based learning strategies effectively, and are taking action to hire academics with advanced curriculum and instruction experience to assist them with improving the quality of instruction. These institutions are also very much aware that students are enrolling without knowledge of how to properly research, process, and apply information that they will be exposed to. Right from the beginning, college success and introductory courses must prepare the digitally-oriented and busy adult learner to accomplish these tasks, while emphasizing the metacognitive reflection process that is so critical today for learning and problem-solving.

Evidence for incorporating metacognition may be found from the work of Mason, Boldrin and Ariasi (2010). They found that students who used metacognition strategies

to evaluate information, including Internet sources, outperformed learners who did not. The power of teaching and using metacognition was also demonstrated by experiments performed by Halamish, Goldsmith, and Jacoby (2012). The researchers showed that learners constrained recall to the way the information was originally processed and used some of the same processes as retrieval cues. Both sets of research are important for showing that memory and performance can be improved with adequate information-processing and metacognition strategies, which also matches our need to include outcome-based instructional strategies across the curriculum.

Teachers and students must be shown how to use metacognition to advance the learning process. Modeling and application of the metacognition strategies can generate the necessary buy-in, but

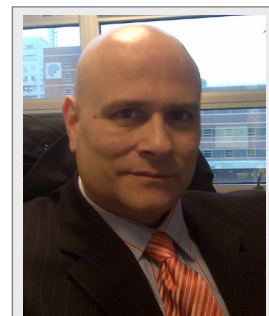
perhaps most importantly, ongoing scaffolding and support is needed to ensure the success of any initiative.

References

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AUTHOR PROFILE

Current Position and Past Experience

Clapper has been an Educational Consultant and Independent Researcher with TC Curriculum & Instructional Design, LLC since 2008.

He is also an Adjunct Faculty member at the American Public University System and the University of Colorado at Colorado Springs since 2011. From 2009-2011, Clapper was also the Director of Education at the Institute for Medical Simulation and Advanced Learning in New York.

Education, Honors and Achievements

In 2008, Clapper earned his Certificate of Advanced Graduate studies in Educational Technology at the University of Colorado at Colorado Springs. He simultaneously earned his MA in Curriculum and Instruction from the same institution. In 2011, Clapper earned his PhD in Education from Capella University.