

Developing Your Metacognitive Skills – Exam Preparation

Metacognition is thinking about one's own thinking, and refers to the ability to reflect upon, understand, manipulate, and regulate one's cognitive activities during learning. Expert learners assess test demands, evaluate own knowledge/skills, plan approach, monitor one's progress, and adjust strategies as needed. Your brain is like a muscle that when exercised your learning abilities can be enhanced. The following activity will assist you with exercising your brain and developing your metacognitive skills.

Effective Studying

Exam Study Strategies for Deep Learning:

1. **Test yourself.** Generate some test questions that make you compare and contrast, analyze, make connections to what you may already know or personal experience. Next take the "test". Testing yourself helps you calibrate what you know and don't know.
2. **Practice retrieving information in the way your professor expects.** Learning is effortful. Practicing retrieval reinforces and consolidates the memory, which strengthens the connections to what you already know. The neural pathways get stronger when the memory is retrieved and the learning is practiced. Try: a) Practice recalling without referring to notes b) Practice writing elaborations. Elaboration is expressing something in your own words and connecting the new knowledge to things you already know.. C) Use flash cards to practice recalling information d) after reading a page, look away and recall the main ideas. Try recalling main ideas when you are walking to class.
3. **Space your repetition.** Spread out your learning in any subject a little every day. Daily and Weekly Reviews – daily reviews include the short pre- and post-class reviews of lecture notes. Research indicates that this is an effective tool for moving ideas from short-term to long-term memory. Weekly reviews are longer – about an hour. Review assigned reading and lecture notes. Look over any concept maps or summaries from your notes.
4. **Taking notes in class.** Notes provide key points, create a set of memory/retrieval cues to remind you, it also engages you in the class. Actively organize and review your notes. Write summaries using your own words.
5. **Use explanatory questioning and simple analogies.** Whenever you are struggling with a concept, think to yourself, *How can I explain this so that a ten-year-old could understand it?* Using an analogy really helps, like saying that the flow of electricity is like the flow of water.
6. **Metacognitive reading by monitoring your comprehension.** While reading ask yourself: A) Do I understand what I just read? B) What do I already know about what I just read? C) Can I say it in my own words? D) Can I think of another example? E) Is it important enough to put in my notes?
7. **Alternate different problem-solving techniques during your practice.** Never practice too long at any one session using only one problem-solving technique—after a while, you are just mimicking what you did on the previous problem. Mix it up and work on different types of problems. This teaches you both *how* and *when* to use a technique.
8. **Group study.** *The ability of a student to either create a study group or join a study group is the single best predictor of success in college (Light, 2001)* Keep ultimate goal of learning in mind. Setting an agenda for the group study will keep the group on task and provide structure. Some activities may include testing each other by asking questions, peer teaching each other concepts, comparing notes, and brainstorming test questions.
9. **Exam Visualization (cognitive rehearsal).** Many elite athletes use visualization as part of their pre-competition regiment. In your studying context use the night before an exam as you are going to sleep to visualize yourself taking the exam. Visualize yourself in the classroom taking the exam; see yourself receiving the exam, confidently taking the exam...handling the tough questions well...see yourself finishing the exam...feeling happy to have completed the exam so well.

Planning for Exams

1. What do I know about the exam? What concepts am I being tested on? What format of questions will be asked?

2. What concepts have I found most confusing so far? What concepts have been most clear? Given that, how should I spend my study time in preparing for the exam?

3. Which aspects of the course material should I spend more or less time on, based on my current understanding?

4. What strategies will I use to study (e.g., study groups, online practice quizzes, office hours and S.L. sessions)?

5. How much time do I plan on studying? Over what period of time and for how long each time I sit down do I need to study?

6. What resources are available to support me? How will I make sure to use these?

7. How does my strategy for exam preparation compare with at least three colleagues in my class? (Ask them!)

Monitoring Your Study Progress.

1. To what extent am I being systematic in my studying of all the material for the exam?
 2. To what extent am I taking advantage of all the learning supports available to me?
 3. Am I struggling with my motivation to study? If so, do I remember why I am taking this course?
 4. Which of my confusions have I clarified? How was I able to get them clarified? Which confusions remain and how am I going to get them clarified?
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