Learning Through Critical Questioning

Develop your Critical Thinking Skills

In courses with large amounts of content, there is a genuine risk that you will memorize information without real comprehension of the scope and application. This surface learning often disappears soon after the test has been written. Application, analysis, evaluation, and creation are often referred to as higher level thinking or *Critical Thinking*. This type of thinking is the key to deep learning where you develop knowledge, skills, and an academic mindset so that you learn more efficiently. You will acquire and retain more academic knowledge and will be able to use the materials throughout your University and professional career.

A deep learning approach to studying includes:

- writing your own study questions;
- figuring out the answers before looking them up;
- breaking down complex processes step-by-step;
- closing your notes and answering questions to see how much you remember.

You want to avoid possible thinking blockages as you study by:

- using facts not assumptions;
- accessing multiple points of view;
- interpreting information accurately to prevent conflicts;
- discussing issues with others;
- asking (and answering) questions!

When you are asked and answer questions, you find out the actual level of your understanding and identify the next level that needs to be reached for your learning. It is important to use the right questions to find out what you know and what you need to know next.

Although there are numerous ways to categorize learning, the taxonomy developed by Benjamin Bloom (later revised by David Krathwohl and others) for cognitive knowledge is widely used in education. This cognitive taxonomy can help you with:

- setting learning goals;
- selecting study and learning strategies;
- formulating questions to use in studying sessions;
- assessing if your learning goals have been met.

It is important for you to use the right question to find out what you know. One approach is to use Bloom's Taxonomy which describes six cognitive levels:

1. Remembering
2. Understanding
3. Applying
4. Analyzing
5. Evaluating
6. Creating

If you don't know the language of the course and what it means, it will be difficult for you to apply or analyze. The following worksheet will help you develop questions that, when answered will give you a deep understanding of the materials that you are studying.

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Pick a concept in a subject area that you are working on. For each level of Bloom's Taxonomy listed below, write a question or describe an activity that would demonstrate whether or not you understand the material at that level. These six levels incorporate the Who, Where, When, What, Why, and How of the concept.

Level	Question/Activity
Remembering	Remembering and Recalling information. What is it? Where is it found? Who uses it? When? Why? How? (5Ws & H)
Understanding	Understanding Explaining ideas or concepts. Who does What to Whom, When, Where, and How? (5Ws & H)
Applying	Applying information in a familiar situation When and Where is this used by Whom, Why, and How? (5Ws & H)
Analyzing	Analyzing by breaking information into parts to explore relationships. Compare and Contrast situations using the 5Ws and an H.
Evaluating	Justifying a decision or course of action. Because of which factors (5Ws &H) is one course of action better or worse than another?
Creating	Generating new ideas, products, or ways of viewing things Using new combinations of related elements (5Ws &H), create new ideas.