

*The Thinker's Guide
for Students on*

HOW TO STUDY & LEARN A DISCIPLINE

SECOND EDITION

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Why a Thinker's Guide on How to Study and Learn?

This guide is designed not only for students but also for administrators and faculty, to remind us all of the essence of what it is to study academic subjects with discipline. It does not aim to take the intellectual work out of learning—for this would be an insult to the intelligence of our readers. It contributes, rather, toward making intellectual work and deep learning more manageable, practical, and intuitive. Its goal is to foster lifelong learning and the traditional ideal of a liberally educated mind: a mind that questions, probes, and masters a variety of forms of knowledge, through command of itself, intellectual perseverance, and the tools of learning. It respects equally the traditions of John Henry Newman, Bertrand Russell, and Albert Einstein.

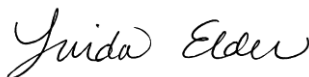
It does not answer all questions, but rather puts all questions into a clear perspective. It emphasizes that all bona fide fields of study share common intellectual structures and standards of reasonability. It emphasizes that foundational intellectual structures and standards of reasonability are worth learning explicitly and in themselves, since they help us more deeply interconnect and understand all that we learn. It also emphasizes foundational intellectual dispositions and values that define the traits of the disciplined thinker in all fields: intellectual autonomy, intellectual humility, intellectual integrity, intellectual perseverance, intellectual empathy, confidence in reason, and fairmindedness. On every page, it honors the idea and power of intellectual work.

It scorns the idea of knowledge as the memorizing of bits and pieces of information, or as the mere accumulation of so many units or institutional credits. It rejects both dogmatic absolutism and intellectual relativism. It warns us of the danger of ignorance and misconception, and by implication, that of self-deception and illusion in human affairs. It emphasizes the importance of contrasting disciplines whose questions are, by and large, answerable in definitive ways, with those whose questions require multiple perspectives, role-playing, and reasoned judgment. It distinguishes, in short, one-system subjects like physics, chemistry, and math (where disagreement between experts plays a minor role) from competing-systems subjects like history, psychology, and art (where expert disagreement plays a major role).

If this thinker's guide is successful, it will serve as a resource to which one can return again and again to garner new depth of meaning and understanding. What is worth learning is worth learning well, and there is nothing better worth learning than the very process of learning itself: the development, through systematic intellectual work of the arts, habits, and strategies, of a DISCIPLINED mind.



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Forward:

John Stuart Mill as an Exemplar of How to Study and Learn¹

*A pupil from whom nothing is
ever demanded which he cannot do,
never does all he can.*
– John Stuart Mill

The Thinker's Guide on How to Study and Learn is based in the premise that all substantive and useful learning occurs over time, and only through deep long-term commitment to the process. Each of us, teachers and students alike, must work our way to increasingly higher levels of intellectual development. And the level of intellectual development we reach in our lifetimes will be largely determined by our level of commitment to disciplining and directing the native processes of our own minds, using our own free will. Deep and powerful learning results from an abiding passion for learning.

All content is learned, ultimately, through the thinking you do as you work your way to insights and significant understandings. This happens, for instance, when you engage with ideas presented to you in books, articles, websites, and so forth. This engaged reasoning requires willingness on your part, the student, to persevere through the difficulties inherent in developing your complex human mind. It also requires explicit methods and strategies for thinking through content.

For illuminating examples of such methods and strategies, we can turn to John Stuart Mill's *Autobiography*. Mill, a preeminent thinker of the 19th century, enjoyed a rare understanding of the processes involved in disciplining the mind. This was primarily due to his home schooling experience with his father, James Mill, who was himself an important theoretician.

As you work your way through *The Thinker's Guide on How to Study and Learn*, keep in mind the powerful insights offered by Mill (and briefly summarized here). When you can, link the insights you are gaining by using this guide, with the insights Mill discovered as a student under the guidance of his father. Note how fundamental, foundational, and in many case simple, are these methods. And yet also realize that it is precisely these foundational methods that lead to the highest levels of learning, when applied diligently over time.

John Stuart Mill, born in London in 1806, was educated throughout his primary and

¹ All quotes in this article are taken from *Autobiography* by John Stuart Mill, first published in 1873. The version used herein was published by Penguin Books, 1989, London, England.

The Relationship Between Critical Thinking and How to Study and Learn a Discipline

The Problem:

All thinking occurs within, and across, disciplines and domains of knowledge and experience, yet few students learn how to think well within those domains. Despite having taken many classes, few are able to think biologically, chemically, geographically, sociologically, anthropologically, historically, artistically, ethically, or philosophically. Students study literature, but do not think in a literary way as a result. They study poetry, but do not think poetically. They do not know how to think like a reader when reading, nor how to think like a writer while writing, nor how to think like a listener while listening. Consequently they are poor readers, writers, and listeners. They use words and ideas, but do not know how to think ideas through, and internalize foundational meanings. They take classes but cannot make connections between the logic of a discipline and what is important in life. Often even the best students have these deficiencies.

The Concept of Critical Thinking:

Critical thinking is the kind of thinking—about any subject, content, or domain—that improves itself through disciplined analysis and assessment. Analysis requires knowledge of the elements of thought; assessment requires knowledge of and adherence to standards for thought. Critical thinking also takes into account the innate or intrinsic barriers to criticality such as egocentric and sociocentric tendencies, and entails the cultivation of intellectual virtues such as intellectual humility, empathy, integrity, and confidence in reason.

A Critical Person:

A critical person is one who has mastered a range of intellectual skills and abilities and embodies intellectual traits or virtues. When people use critical thinking skills largely to advance their selfish interests, they are critical thinkers only in a weak or qualified sense. If, on the other hand, they commonly use intellectual skills fairmindedly, routinely entering empathically into the points of view of others, they can be said to be critical thinkers in a strong sense. Of course, developing as critical persons is always a matter of degree, since no one could ever be the “ideal thinker.”

How to Think Within the Ideas of a Subject

Learning to think within the ideas of a subject is like learning to perform well in basketball, ballet, or on the piano. Thinking within the ideas of a subject at an advanced level without disciplined practice is as unnatural to the human mind as sitting down at a piano and spontaneously playing Chopin's Polonaise.

Unfortunately, many classes do not highlight how to think within the ideas of the subject. Merely receiving lectures on the content of a subject will not teach you how to think within its ideas. You must therefore set out to discover how to think within biology, how to think within chemistry, how to think within economics, etc. You will not discover this thinking by cramming large masses of partially digested contents of a textbook or sets of lectures into your head. Here is what we recommend.

Recognize that you are seeking a new way to look at learning. Recognize that it will take time to become comfortable in this new perspective. Consider your task as a student to be to learn new ways to think. Stretching the mind to accommodate new ideas is crucial.

For example, if you are in a history course, your job is to learn how to think historically. If you are in a writing class, your job is to learn to think like a skilled writer. If you are in a sociology, psychology, geography, biology, philosophy, or chemistry class, you should be striving to think sociologically, psychologically, geographically, biologically, philosophically, or chemically.

If you are in a nursing, engineering, or architecture class, you should be attempting to think like a professional nurse, like an engineer, or like an architect.

Recognize that there are key ideas behind the subject that give a unified meaning to it. Look up a variety of formulations of the essence of the subject (use dictionaries, textbooks, encyclopedias). Remember that you are looking for the ideas that give a unified meaning to the subject and thus enable you to experience the subject as a system. What makes art art? What makes science science? What makes biology biology? Try to find the common denominator of the subjects you study. Ask your instructor for help.

Now relate every new idea (in the textbook or lectures) to the fundamental idea with which you began. The big idea with which you began should be in the background of all new ideas. Seek intuitive connections, connections that make complete sense to you.

Essential Idea: There are basic ideas that act as guide-posts to all thinking within a subject. Look for these basic ideas and stretch your mind to learn them. Weave everything else into them.

How to Raise Important Questions Within a Subject

Every discipline is best known by the questions it generates and the way it goes about settling those questions. To think well within a discipline, you must be able to raise and answer important questions within it. **At the beginning of a semester of study, try generating a list of at least 25 questions that each discipline you are studying seeks to answer.** To do this you might read an introductory chapter from the textbook or an article on the discipline from an encyclopedia. Then explain the significance of the questions to another person.

Then **add new questions to the list (as your courses proceed) underlining those questions when you are confident you can explain how to go about answering them. Regularly translate chapter and section titles from your textbooks into questions.** For example, a section on photosynthesis answers the question, What is photosynthesis?

In addition, **look for key questions in every lecture you hear. Relate basic questions to the basic theory the discipline uses to solve problems.** Master fundamental questions well. Do not move on until you understand them.

Notice the interrelationship between key ideas and key questions. Without the ideas the questions are meaningless. Without the questions, the ideas are inert. There is nothing you can do with them. A skilled thinker is able to take questions apart, generate alternative meanings, distinguish leading from subordinate questions, and grasp the demands that questions put upon us.

Essential Idea: If you become a good questioner within a discipline, you will learn the essential content of the discipline.

The Logic of Sociology

