

SESSION 10 GENERAL REVIEW

Critical thinking involves the use of a group of interconnected skills to analyze, creatively integrate, and evaluate what you read and hear. To become a critical thinker you must be able to decide whether an author's opinions are true or false, whether he or she has adequately defended those ideas, whether certain recommendations are practical, as well as whether particular solutions will be effective.

I. Critical Thinking Dispositions

Critical thinking involves certain dispositions. A disposition is a tendency to act or think in a certain way. [Review](#) the list of dispositions that are characteristic of critical thinkers.

II. Critical Thinking Skills

To learn how to think critically, one must learn skills that build upon each other. Only by concentrating on and practicing these basic skills can mastery of critical thinking be achieved. The author lists three basic characteristics of the skills required to think critically: they are interconnected ([review](#) a sample list of these skills), they build on each other, and they are goal-oriented in that we can constantly apply them to situations in everyday life.

III. Characteristics of Critical Thinking

Critical thinking involves the use of a kind of thinking called reasoning, in which we construct and/or evaluate reasons to support beliefs. Critical thinking also involves reflection — the examination and evaluation of our own and others' thoughts and ideas. Finally critical thinking is practical. Actions are more rational if they are based on beliefs that we take to be justified. Critical thinking then, is the careful, deliberate determination of whether we should accept, reject or suspend judgement about the truth of a claim or a recommendation to act in a certain way.

[Review](#) what the guiding model of the text. This model is discussed in steps or stages. For each step note the specific headings to help you identify the level discussed.

IV. Step 1: Knowledge

In terms of critical thinking, the basic level of acquisition of knowledge requires that you be able to identify what is being said: the topic, the issue, the thesis, and the main points.

V. Step 2: Comprehension

Comprehension means understanding the material read, heard or seen. In comprehending, you make the new knowledge that you have acquired your own by relating it to what you

already know. The better you are involved with the information, the better you will comprehend it. As always, the primary test of whether you have comprehended something is whether you can put what you have read or heard into your own words. [Review](#) some key words that help you identify when comprehension is called for. Remember that comprehending something implies that you can go beyond merely parroting the material back but instead that you can give the material your own significance.

VI. Step 3: Application

Application requires that you know what you have read, heard, or seen, that you comprehend it, and that you carry out some task to apply what you comprehend to an actual situation. [Review](#) the some tasks that require application.

VII. Step 4: Analysis

Analysis involves breaking what you read or hear into its component parts, in order to make clear how the ideas are ordered, related, or connected to other ideas. Analysis deals with both form and content. [Review](#) how critical thinkers analyze form. [Review](#) how critical thinkers analyze content.

VIII. Step 5: Synthesis

Synthesis involves the ability to put together the parts you analyzed with other information to create something original. [Review](#) some key words that help you identify when synthesis is called for.

IX. Step 6: Evaluation

Evaluation occurs once we have understood and analyzed what is said or written and the reasons offered to support it. Then we can appraise this information in order to decide whether you can give or withhold belief, and whether or not to take a particular action. [Review](#) some key words that help you identify when synthesis is called for. Never put evaluation ahead of the other steps in critical thinking steps; otherwise, you will be guilty of a "rush to judgement." When emotion substitutes for reasons, evaluation incorrectly precedes analysis.

Critical Thinking Dispositions

Critical thinkers are:

1. curious about the world.
2. creative questioners.
3. frequently asking "why?" and seeking reasons to defend a
4. position.
5. interested only in credible sources of information.

6. able to take into account the total situation or context when interpreting something.
7. relevant thinkers who stick to the main point.
8. always looking for alternative explanations, positions, or arguments.
9. open-minded and who seriously consider points of view other than their own.
10. willing to change a position when the evidence is sufficient to make them do so.
11. able to withhold judgement when the evidence is insufficient.
12. eager to seek precision.
13. able to realize the limits of knowing; hence they look for probability rather than proof.
14. able to realize the role of personal bias in the process of knowing something.
15. able to deal in an orderly manner with the parts of a complex whole and anticipate the next step in a process.
16. sensitive to the feelings, levels of knowledge, and degree of sophistication of others when presenting their findings.
17. able to apply critical thinking abilities to a wide variety of subjects.

Sample List of Critical Thinking Skills

1. Clarification Abilities—the ability to discern the thesis and main points of what you read and hear.
2. Inference-related Abilities—making an inference that some true statements provide reasons to think that other statements are true. [Review](#) some requirements for working with inferences.
3. Ability to Employ Strategies—adapting to unique situations and problems effectively in a carefully reasoned way. [Review](#) what the ability to employ strategies enables you to do.

Requirements for making inferences

1. The ability to identify and distinguish the evidence (premises) from the conclusion.
2. The ability to draw correct conclusions from the information given.
3. The ability to assess the truth of the evidence.
4. The ability to dig out the presuppositions of the argument.
5. The ability to consider the relevance of the information to the conclusion of a line of reasoning.
6. The ability to evaluate whether the evidence is strong enough to support the conclusion.

The Ability to Employ Strategies Enables you to:

1. decide what is at issue or what is the problem.
2. create various options to deal with the problem.
3. know where and how to get information.
4. identify the criteria for evaluating the options.
5. determine how to test various options for dealing with the problem.
6. assess or weigh the strengths and weaknesses of the options or proposed solutions

Guiding Model for the Text

1. acquiring knowledge or information
2. comprehending or understanding what you read and hear
3. applying what you understand to given situations
4. analyzing the information that you understand
5. synthesizing and creatively using what you understand and have analyzed
6. critically evaluating what you understand and have analyzed or created

Key Words that Call for Comprehension

Discuss

Express

Explain

Restate

Rearrange

Summarize

Interpret

Infer

Draw a Conclusion

Tasks that Require Application

1. Apply what you have learned to an actual situation.
2. Illustrate or give an example of what was said.
3. Prepare a dish to show you understood the recipe
4. Predict what will happen when the teacher mixes two beakers of chemicals
5. Demonstrate that the thesis is true or develop a scenario that shows how what you have read will work out.
6. Dramatize the moral that you just discussed.

Analyzing Form (the structure of what you read or hear)

1. Critical thinkers look for organizational patterns or principles in what others present to them.
2. Critical thinkers observe the relationships between the ideas, noting their temporal relation and their logical order.
3. Critical thinkers are able to break down the material into its components.

Analyzing Content (that which you read or hear is actually about)

1. Critical thinkers order the material to distinguish dominant from subordinate ideas.
2. Critical thinkers distinguish statements of evidence from hypotheses.
3. Critical thinkers see what assumptions or presuppositions the author makes.
4. Critical thinkers find evidence of the author's purposes.
5. Critical thinkers note how one idea relates to another.
6. Critical thinkers categorize information received.
7. Critical thinkers set up comparisons among things.

Key Words that Call for Synthesis

Compose

Invent

Imagine

Revise

Transform

Modify

Show

Key Words that Call for Evaluation

Appraise

Assess

Evaluate

Judge

Weigh

Rate

Grade

Critical Thinking in Real Life

It is important not take what you experience, read, or hear at face value, but to look behind the obvious for presuppositions, evidence, and arguments. Your goal in the pages ahead will be to strengthen your ability to read more knowledgeably, understand more clearly, analyze more carefully, and assess more accurately. Remember that the critical thinker wants to read carefully,

to be aware of possible difficulties, to explore reasonable explanations, and when appropriate, to think about the credibility of his or her sources of information.

The first and most important insight necessary for the appropriate design of instruction and curriculum is that content is, in the last analysis, nothing more nor less than a mode of thinking. Let me explain.

There are many ways to begin to grasp the profound truth that all content is nothing more nor less than a mode of thinking (about something), a way of figuring something out, a way of understanding something through thought. Here are just three ways of beginning to grasp this truth:

1) All "content" in school is content in a subject. All subjects are areas of study. All areas of study are "things" that we are interested in "figuring out". All fields of study have been advanced insofar as we have discovered ways to figure out whatever is being studied. There is no way to figure out something without thinking. There is no way to learn how to figure something out without learning how to think it through. There is no way to learn mathematical content without learning how to figure out correct answers to mathematical questions and problems. There is no way to learn historical content without learning how to figure out correct or reasonable answers to historical questions and problems. There is no way to learn biological content without learning how to figure out answers to biological questions and problems. Any subject or "content area" can therefore be understood as a mode of figuring out correct or reasonable answers to a certain body of questions. We study chemistry to figure out chemicals (to answer questions about chemicals). We study psychology to figure out people (to answer questions about certain human problems). All subjects can be understood best in this way.

2) All "content" involves concepts. There is no way to learn a body of content without learning the concepts which define and structure it. There is no way to learn a concept without learning how to use it in thinking something through. Hence, to learn the concept of democracy is to learn how to figure out whether some group is functioning democratically or not. To learn the concept of fair play is to learn how to figure out whether someone is being fair in the manner in which they are participating in a game. To learn the concept of a novel is to learn how to distinguish a novel from a play or short story. To learn the concept of a family is to learn how to distinguish a family from a gang or club. To learn any body of content, therefore, it is necessary to learn to think accurately and reasonably with the concepts that define the content.

3) All "content" is logically interdependent. To understand one part of some content requires that we figure out its relation to other parts of that content.

For example, we understand what a scientific experiment is only when we understand what a scientific theory is. We understand what a scientific theory is only when we understand what a scientific hypothesis is. We understand what a scientific hypothesis is only when we understand what a scientific prediction is. We understand what a scientific prediction is only when we understand what it is to scientifically test a view. We understand what it is to scientifically test a view only when we understand what a scientific experiment is. Etc....etc.....etc.... To learn any body of content, therefore, is to figure out (i.e., reason or think through) the connections between the parts of that content. There is no learning of the content without this thinking process.

To this point the majority of teachers and students approach content, not as a mode of thinking, not as a system for thought, or even as a system of thought, but rather as a sequence of stuff to be routinely "covered" and committed to memory. When content is approached in this lower order way, there is no basis for intellectual growth, no deep structures of knowledge formed, no basis for long term grasp and control.

Thinking With Concepts

Taking Our Students on a Journey to Personal Freedom

Concepts are to us like the air we breathe. They are everywhere. They are essential to our lives. But we rarely notice them. Yet only when we have conceptualized a thing in some way, only then, can we think about it. Nature does not give us, or anyone else, instructions in how things are to be conceptualized. We must create that conceptualization, alone or with others. Once conceptualized, a thing is integrated by us, into a network of ideas (since no concept or idea ever stands alone). We conceptualize things personally by means of our own ideas. We conceptualize things socially by means of the ideas of others (social groups). We explain one idea by means of other ideas. So if someone asked us to say what a "friend" is, we might say, as the Webster's New World does, "a person whom one knows well and is fond of." If that same person asked us to say what it means to "know someone well," we would respond by introducing yet further ideas or concepts.

Humans approach virtually everything in experience as something that can be "given meaning" by the power of our minds to create a conceptualization and to make inferences on the basis of it

(hence to create further conceptualizations). We do this so routinely and automatically that we don't typically recognize ourselves as engaged in these processes. In our everyday life we don't first experience the world in "concept-less" form and then deliberately place what we experience into categories in order to make sense of things. Every act in which we engage is automatically given a social meaning by those around us.

To the uncritical mind, it is as if things are given to us with their "name" inherent in them. All of us fall victim to this illusion to some degree. Thus we see, not shapes and colors, but "trees," "clouds," "grass," "roads," "people," "children," "sunsets," and so on and on. Some of these concepts we obtain from our native language. Some are the result of our social conditioning into the mores, folkways, and taboos of particular social groups and a particular society. We then apply these concepts automatically, as if the names belonged to the things by nature, as if we had not created these concepts in our own minds.

If we want to help students develop as critical thinkers, we must help them come to terms with this human power of mind, the power to create concepts through which we, and they, see and experience the world. For it is precisely this capacity they must take charge of if they are to take command of their thinking. To become a proficient critical thinker, they must become the master of their own conceptualizations. They must develop the ability to mentally "remove" this or that concept from the things named by the concept and try out alternative ideas, alternative "names." As general semanticists often say: "The word is not the thing! The word is not the thing!" If students are trapped in one set of concepts (ideas, words) — as they often are — then they think of things in one rigid way. Word and thing become one and the same in their minds. They are then unable to act as truly free persons.

Command of Concepts

Requires Command of Language Use

To gain command of concepts and ideas, it is important, first, to gain command of the established uses of words (as codified in a good dictionary). For example, if one is proficient in the use of the English language, one recognizes a significant difference in the language between needing and wanting, between having judgment and being judgmental, between having

information and gaining knowledge, between being humble and being servile, between stubbornness and having the courage of your convictions. Command of distinctions such as these (and many others) in the language has a significant influence upon the way we interpret our experience. Without this command, we confuse these important discriminations and distort the important realities they help us distinguish. What follows is an activity which you can have students do to begin to test their understanding of basic concepts.

Testing Your Understanding of Basic Concepts

Each word pair below illustrates an important distinction marked by our language. For each set, working with a partner, discuss your understanding of each pair emphasizing the essential and distinguishing difference. Then write down your understanding of the essential difference. After you have done so (for each set of words), look up the words in the dictionary and discuss how close your “ideas” of the essential difference of the word pair was to the actual distinctions stated or implied by the dictionary entries. (By the way, we recommend the Webster’s New World Dictionary)

- 1) clever/cunning
- 2) power/control
- 3) love/romance
- 4) believe/know
- 5) socialize/educate
- 7) selfish/self-motivated
- 8) friend/acquaintance
- 9) anger/rage
- 10) jealousy/envy

From practice in activities such as these, students can begin to become educated speakers of their native language. In learning to speak our native language, we can learn thousands of concepts which, when properly used, enable us to make legitimate inferences about the objects of our experience.

Command of Concepts Requires Insight into Social Conditioning

Unfortunately, overlaid on the logic of language is the logic of the social meanings into which we have been conditioned by the society by which we are raised and from which we take our identity (Italian-American Catholic father, for example). Taking command of these “social” meanings is as large a problem as that of taking command of the logic of educated usage (in our native language). We have a dual problem, then. Our lack of insight into the basic meanings in our native language is compounded by our lack of insight into the social indoctrination we have undergone. Social indoctrination, of course, is a process by which the ideology (or belief system) of a particular group of people is taught to fledgling members of the group in order that they might think as the dominant members of that group do. Education, properly conceived, empowers a person to see-through social indoctrination, freeing them from the shackles of social ideology. They learn to think beyond their culture by learning how to suspend some of the assumptions of thinking within it.

The Journey to Personal Freedom

To move toward personal freedom we must develop the ability to distinguish the concepts and ideas implicit in our social conditioning from the concepts and ideas implicit in the natural language we speak. We must understand the divergent basis for both. For example, people from many different countries and cultures may speak the same natural language. The peoples of Canada, Ireland, Scotland, England, Australia, Canada, and the United States all speak English. By and large they implicitly share (to the extent to which they are proficient in the language) a similar set of basic concepts (that are codified in the 23 volumes of the Oxford English Dictionary). Nevertheless, though sharing this linguistic heritage, these various peoples do not share the same social conditioning. What is more, a person from China or Tibet could learn to speak the English language fluently without in any sense taking in our social indoctrination.

Unfortunately, very few students have sufficient insight into the differences between a natural language and the various cultures that might all use it. They fail to see, therefore, that natural languages — French, German, English, Swahili, or Hindi — are repositories of concepts that, by and large, are not “ideological.” They are not to be equated with the concepts implicit in the social indoctrination fostered by particular social or cultural groups. Indeed, we can use concepts from our native language to critique social indoctrination, just as this article is doing. Command of language makes social critique possible.

In the United States, for example, most people are raised to believe that the U.S. form of economic system (capitalism) is superior to all others. When we are speaking in ideological ways, we call it “free enterprise.” We also often assume (ideologically) that no country can be truly democratic unless it uses an economic system similar to ours. Furthermore, we assume that the major alternative economic systems are either “wrong” or “enslaving” or “evil” (the “evil empire”). We are encouraged to think of the world in this simplistic way by movies, the news, schooling, political speeches, and a thousand other social rituals. Raised in the United States, we internalize different concepts, beliefs, and assumptions about ourselves and the world than we would had we been raised in China or Iran (for example). Nevertheless, no lexicographer would confuse these ideological meanings with the foundational meanings of the words in a bona fide dictionary of the English language. The word "communism" would never be given the gloss of an economic system that enslaves the people. The word "capitalism" would never be given the gloss of an economic system essential to a democratic society.

However, because we are socially conditioned into a self-serving conception of our country, many of our social contradictions or inconsistencies are hidden and go largely unquestioned. Leaving social self-deception undisturbed is incompatible with developing the critical thinking of students. Command of concepts cannot be separated, then, from recognition of when they are, and when they are not, ideologically biased.

The Challenge We Face

If we are committed to helping students think well with concepts, we must teach them how to strip off surface language and consider alternative ways to talk and think about things. This includes teaching them how to closely examine the concepts they have personally formed as well as those into which they have been socially indoctrinated. It means helping students understand that, being fundamentally egocentric, humans tend to be trapped in “private” meanings. Thinking

sociocentrically we are trapped in the world-view of our peer group and that of the broader society.

Both set of binders make it hard to rationally decide upon alternative ways to conceptualize situations, persons, and events. Being so trapped, most students are unable to identify or evaluate either meanings in a dictionary or the social rituals, pomp, and glitter of social authority and prestige. Students live their lives, then, on the surface of meaning. They do not know how to plumb the depths.

When we are teaching well, students go beneath the surface. They learn how to identify and evaluate concepts based in natural languages, on the one hand, and those implicit in social rituals and taboos, on the other. They become articulate about what concepts are and how they shape our experience. They can, then, identify key concepts implicit in a communication. They begin to practice taking charge of their ideas and therefore of the life-decisions that those ideas shape and control. Crazy and superficial ideas exist in our society because crazy and superficial thinking has created them. They exist for mass consumption in movies, on television, in the highly marketed “news,” and in the double speak of the ideological world of “law and order.” They do damage everyday to the lives of people.

The challenge to teaching with this end in view is a significant one. It is one we must pursue with a keen sense of the long-term nature of the project and of its importance in the lives of students. We may begin in modest ways for example, with the proper use of the dictionary or how to identify the mores and taboos of one’s peer group — but begin we must, for the quality of the thinking of the students of today determines the quality of the world they shall create tomorrow.