

The Critical Mind is A Questioning Mind

Learning How to Ask Powerful, Probing Questions

Introduction

The key to powerful thinking is powerful questioning. When we ask the right questions, we succeed as a thinker, for questions are the force that powers our thinking. Thinking, at any point in time, can go off in thousands of different directions, some of which, by the way, are dead-ends. Questions define the agenda of our thinking. They determine what information we seek. They lead us in one direction rather than another. They are, therefore, a crucial part of our thinking.

"By Their Questions Ye Shall Know Them"

If there were a bible for critical thinking, "By their questions yea shall know them" would be a salient teaching within it. We shall use the art of asking powerful questions as a key organizer for this article. It is an important the vehicle for teaching the fundamental tools of critical thinking.

The Basic Building Blocks for Thinking: One Key To Powerful Questioning

For example, one basic understanding essential to critical thinking is based on insight into the basic structures common to all thinking. Another is based on insight into fundamental standards for the assessment of thinking. From the foundation of both of these understandings we can generate powerful questions for the thinker to ask, questions that can be usefully asked about virtually any thinking in virtually any context; questions that give us leverage by helping us not only to get to the foundation of thinking, but also to begin to determine its strengths and weaknesses. Let us begin with the elements of thought. These are the inescapable structures underlying one's thinking every step along the path of thought. If one is thinking about anything, one is using these structures. They are generated by every act of thinking by its very nature.

The Elements of Thought

The elements of thinking are as important to thinking as the elements of chemistry are to the composition of every substance. Unless we know the basic chemical building blocks of chemical composition, we cannot identify, examine, and check those building blocks (and hence do chemistry).

Unless we know the basic building blocks of thinking, we cannot identify, examine, and check those building blocks (and hence do critical thinking).

Questions for Thinking About Thinking: Breaking Thinking Down

As a developing critical thinker, you must regularly take your thinking apart and come to terms

with its interrelated elements (the constituent parts that make it up). Coming to understand the elements of thought is not a matter of memorizing definitions of a set of terms. Rather, it is a matter of understanding an interrelated set of functions that all thinking unavoidably includes. Just as you can say with confidence that wherever there is a living human being, the body of that person will necessarily include certain constituent, interrelated physiological systems (the nervous system, the cardiovascular system, the respiratory system, etc.), so too as a thinker you can say with confidence that if you are dealing with the thinking of any human, there are constituent, interrelated elements that make it up.

The Elements Enumerated

Let us now consider these elements. To think as a human is to think for a purpose (our thinking never lacks some end, some motivation, some goal). In pursuing a purpose (using thought), questions are generated (for example, how can I best achieve this purpose?). To answer a question you need information that bears on it. To use information, you must make sense of it. To make sense of information, you must come to some conclusions, make some inferences. To make inferences, you must use concepts. To use concepts, you must make assumptions. To make assumptions leading to inferences generates implications and consequences. And, finally, to think purposively, using information, to come to conclusions is to think within a point of view.

This Will Be Perhaps Clearer with an Example

- Imagine, for a moment, that my purpose is to get a better job, then there are necessarily some questions inherent in that purpose: What jobs are available that I might qualify for and would be interested in? What are the advantages and disadvantages of each available job? How can I most effectively apply for the jobs that best suit me?
- Once these questions are clear to us, it is a short step in thought to recognizing that I will have to gather information about available jobs, etc.
- Once I get my information, I will then have to come to some conclusions about potential jobs: which seem the best options and how I should go about pursuing those options.
- Unavoidably in deciding to pursue some options I will be making some assumptions about my qualifications, the nature of the jobs themselves, and about the future (the likelihood of my being satisfied by working in this or that setting, for example).
- My thinking will also be generating some implications which I ought to look at: the implications of possibly being out of a job for a period of time, the implications of possibly losing seniority, or of having greater difficulty getting to and from work, the impact on my family, etc.
- In my thinking I should also look at the very concept or idea of improving the quality of my life by improving the quality of my job. I should make sure that I am not uncritically assuming that a job change will make my life better in general or that problems that stem

from other parts of my life will be lessened by a change of job. (Remember, we cannot think without ideas and concepts)

- I should also think about my overall point of view in pursuing the option of a change of job. How am I looking at my present circumstances? How am I envisioning a change? How realistic is my viewpoint? How does it relate to my overall life objectives (my way of looking at the nature and direction of my life in general)? What other points of view do I need to consider? If a job change might require a move, what is my spouse's point of view?

This is, of course, only a very sketchy example. If I were actually thinking through a potential job change, there would be many details and specifics incorporated in my thinking. Nevertheless, when you become comfortable with and practiced in explicitly analyzing and evaluating these basic structures of thought, they will serve as a powerful set of guides for the generation of useful questions. You will find yourself frequently questioning in each of these categories:

What is my purpose, goal, or agenda? (at this meeting, in engaging in this discussion, in carrying on this argument, in my job, in my marriage, as a parent, in buying a new car, in my relationship with Jack, in my leisure time, in my life as a whole)

What is the key question I must answer? What is the main problem I need to solve? What is the crucial issue I must resolve? (at this meeting, in this discussion, in this argument, in my job, in my marriage, as a parent, in buying a new car, in my relationship with Jack, in my leisure time, in my life as a whole)

What is the key information I need to answer the question? What is the information I need to solve the main problem? What is the information I need to resolve the crucial issue? (at this meeting, in this discussion, in this argument, in my job, in my marriage, as a parent, in buying a new car, in my relationship with Jack, in my leisure time, in my life as a whole)

Given the information I have at my disposal, what tentative conclusions can I come to? How can I best interpret the information I have? (at this meeting, in this discussion, in this argument, in my job, in my marriage, as a parent, in buying a new car, in my relationship with Jack, in my leisure time, in my life as a whole)

What is the key concept or idea I need to understand to make sense of the data and to answer the question, solve the problem, or resolve the issue? (at this meeting, in this discussion, in this argument, in my job, in my marriage, as a parent, in buying a new car, in my relationship with Jack, in my leisure time, in my life as a whole)

As I think through this question, problem, or issue, what am I taking for granted or assuming? Am I justified in doing so? (at this meeting, in this discussion, in this argument, in my job, in my marriage, as a parent, in buying a new car, in my relationship with Jack, in my leisure time, in my life as a whole)

Given what I have reasoned through thus far, what does my reasoning imply? If I act on my

conclusions, what are the implications or consequences likely to be? (at this meeting, in this discussion, in this argument, in my job, in my marriage, as a parent, in buying a new car, in my relationship with Jack, in my leisure time, in my life as a whole)

From what point of view am I approaching this question, problem, or issue? Should I consider an alternative point of view (at this meeting, in this discussion, in this argument, in my job, in my marriage, as a parent, in buying a new car, in my relationship with Jack, in my leisure time, in my life as a whole)

As you deploy these questioning strategies in the various domains of your life, you will discover features of your thinking that need to be revised, rethought, and reconstructed. You will discover that many of the purposes and goals that are buried in your behavior need to be questioned. You will discover that you are often unclear about questions and problems that you need to be clear about. You will find that as you put questions and problems in a clear and precise form, you are better able to answer and solve them. You will find that when the key question is clearly before your mind, the information relevant to the question is much more apparent.

You will then more explicitly seek out the information you need. As you explicitly seek out information, you will find yourself checking that information more closely and judging it more effectively. When you are clearer about the information you are using, you will also become clearer about the inferences or conclusions you are coming to based on that information. Once these relationships become clear, other relationships also become clearer to you. For example, when you recognize you are coming to a particular conclusion based on particular information, you will also notice that you are making one or more assumptions and using one or more concept or idea. Understanding that you are engaged in the sum total of the above, you will recognize that you are thinking within a point of view.

In other words, the process of simply questioning the basic elements of your own thinking will automatically improve the quality of your thinking. Furthermore, the more you do so, the better you get at it.

For example, when I question the information I am using in coming to conclusions about people and events in my life, I often discover that I don't have enough relevant information to come to sound conclusions. I nevertheless find myself coming to conclusions. When I catch myself engaging in such flawed thought, I then question those conclusions. I take them out of the category of "fact" and put them into the category of a hypothesis or guess.

Recognizing that I don't have solid information to go on, I then question my motivation. I ask myself whether I have an egocentric motive for my conclusion. For example, suppose someone rubs me the wrong way on one occasion. I may find myself coming to a negative conclusion about the person on another occasion without good reason for doing so. I then recognize that I am allowing my native egocentric tendency toward prejudicial thinking to take control. I can then correct for my unjustifiable inference.

**Questions for Thinking about Thinking:
Using Explicit Intellectual Standards to Assess Thinking**

As a developing critical thinker, you must not only regularly take your thinking apart and come to terms with its interrelated elements (the constituent parts that make it up), you must also come to question those elements using explicit intellectual standards. Coming to understand the basic standards for thought is not a matter of memorizing definitions of a set of terms. Rather, it is a matter of understanding an interrelated set of standards that virtually all thinking must fulfill to be sound thinking.

It is ironic that humans have been assessing thinking for thousands of years but have spent very little time coming to terms with the criteria they habitually use in deciding which thinking to accept and which to reject, which to praise and which to criticize. Of course, once we recognize that the human mind by nature is deeply prone to self-deception and to using thinking in a highly self-serving way---then, we should not be surprised that the implicit standards that humans instinctively use to assess thinking are not only intellectually flawed but actually intellectually absurd. We have in mind the following criteria (which we set out in the first):

"It's true because I believe it"

(innate egocentrism: in which case I find myself continually assuming that what I believe is true even though I have never questioned the basis for many of my beliefs)

"It's true because we believe it"

(innate sociocentrism: in which case I find myself continually assuming that the dominant beliefs in the groups to which I belong are true even though I have never questioned the basis for many of these beliefs)

"It's true because I want to believe it"

(innate wish fulfillment: in which case I find myself believing in, for example, accounts of behavior that put me (or the groups to which I belong) in a positive rather than a negative light even though I have not seriously considered the evidence for the more negative account. I believe what "feels good," what supports my other beliefs, what does not require me to change my thinking in any significant way, what does not require me to admit I have been wrong)

"It's true because I have always believed it"

(innate self-validation: in which case I feel a strong ego-attraction to beliefs that I have long held even though I have not seriously considered the evidence for the critique of these traditional beliefs).

"It's true because it is in my vested interest to believe it"

(innate selfishness: in which case I find myself gravitating to beliefs which if true would justify my getting more power, money, or personal advantage and not noticing the evidence or reasoning against those beliefs)

If we concede that humans are naturally prone to assess thinking in keeping with the above "criteria," then it is not surprising that we, as a species, have not developed a significant interest in establishing and teaching legitimate intellectual standards. There are too many domains of our thinking that we, collectively, do not want questioned. We have too many prejudices that we do not want challenged. We are committed to having our vested interests served. We are not in fact typically concerned to protect the rights of others. We are not typically willing to sacrifice our desires to meet someone else's basic needs. We do not want to discover that beliefs which we have taken to be "obvious" and "sacred" might not be either. We will ignore any number of basic principles if doing so enables us to maintain our power or to gain more power and advantage.

In other words, the irony of the failure of humans to make a commitment to substantive intellectual standards is not puzzling, however vexing it may be. Nevertheless, to develop as a thinker, to become a thinker with a foundational knowledge of how to analyze, assess, and improve thinking; we must internalize the logic of basic intellectual standards. These are eight basic intellectual standards we shall concentrate on. Each speaks for itself and is consequently highly intuitive, from an intellectual point of view. For example, suppose someone said,

"OK, OK, admittedly my thinking is typically unclear, inaccurate, imprecise, irrelevant, superficial, narrow-minded, illogical, and trivial!!! What's wrong with that!!!!;" we would immediately recognize the statement to be absurd. There is no need to "prove" that, all other things being equal clear thinking is better than unclear thinking, accurate thinking better than inaccurate, precise thinking better than imprecise, relevant better than irrelevant, etc. This is intuitive to us--if the question is explicitly put to us, because on many occasions we have experienced the problems that result from a failure to check thinking against such standards.

For example, we have tried to find a place with unclear directions; we have been misled by inaccurate statements; we have not had the (precise) details we needed in some context; we were diverted from achieving what we were after by getting drawn off into irrelevant details; we failed to deal with the complexity of an issue (responding rather to it superficially); we reasoned narrowly ignoring an alternative point of view only to find that we needed the insight that only that point of view could provide; etc.

In other words, though we all frequently fall prey to using "absurd" standards (because they often function subconsciously and self-servingly); we nevertheless are quite capable of recognizing appropriate intellectual standards when they are put to us explicitly and consciously. At an abstract level, virtually everyone--if the question were properly put to them--would value being able to think clearly, precisely, accurately, relevantly, deeply, broadly, and logically. The problem is that the question is not being put to us. The basic intellectual standards essential to critical thinking are not typically taught in schools or in the home. They are certainly not being taught in the popular media. Indeed, if anything, the school, the home, the media, and social life in general tend to praise thinking that is self-serving, egocentric, and sociocentric. Inadvertently, we teach, therefore, "absurd" standards for thinking, though of course these absurd standards serve various (pathological) human functions--like justifying getting what we want (irrespective of the legitimate rights of others) or protecting the status quo when it favors us (irrespective of who suffers deprivation as a result), etc.

Questions based on the standards for thought are, as we have already suggested, largely intuitive when explicitly expressed:

Is my thinking clear?

Is my thinking accurate?

Is my thinking as precise as it needs to be?

Is my thinking relevant to the issue?

Is my thinking dealing with the complexities of this issue or problem?

Is my thinking too narrow or one-sided?

Is my thinking logical?

Is my thinking focusing on what is most significant?

Each of these basic questions leads to more refined questions that enable us to make a better determination of where our thinking stands. Consider each of these sub-questions as follow-up on the basic ones:

Is My Thinking Clear?

Clarity is a gateway standard. If a statement is unclear, we cannot determine whether it is accurate or relevant. In fact, we cannot tell anything about it because we don't yet know what it is saying. For example, the question "What can be done about the education system in America?" is unclear. In order to adequately address the question, we would need to have a clearer understanding of what the person asking the question is considering the "problem" to be. A clearer question might be "What can educators do to ensure that students learn the skills and abilities which help them function successfully on the job and in their daily decision-making?"

Do I need to elaborate my thinking more?

Do I need to provide an illustration of what I mean?

Do I need to give an example from everyday life?

Is My Thinking Accurate?

How could I check to see if this is true?

How could I find out if this is correct?

How could I verify or test to see if this is accurate?

Is My Thinking as Precise as it Needs To Be?

Do I need to be more specific?

Do I need to give more details?

Do I need to be more exact?

Is My Thinking Relevant to the Issue?

How does that relate to the question at issue?

How does that bear upon the problem I am concerned with?

How does this information help me effectively deal with the issue?

Is My Thinking Dealing with the Complexities of This Issue or Problem?

A statement can be clear, accurate, precise, and relevant, but superficial (that is, lack depth). For example, the statement "Just Say No" which is often used to discourage children and teens from using drugs, is clear, accurate, precise, and relevant. Nevertheless, it lacks depth because it treats an extremely complex issue, the pervasive problem of drug use among young people, superficially. It fails to deal with the complexities of the issue.

What factors make this a difficult problem?

What are some of the complexities embedded in this issue?

What are some of the difficulties I need to deal with?

Is My Thinking Taking Into Account The Multiple Perspectives I Need to Consider?

A line of reasoning may be clear, accurate, precise, relevant, and deep, but lack breadth (as in an argument from either the conservative or liberal standpoints which gets deeply into an issue, but only recognizes the insights of one side of the question.)

Am I look at this issue in a narrow-minded way?

Do I need to look at this from another perspective?

Do I need to consider another point of view?

Do I need to look at this situation in other ways?

Is My Thinking Logical?

When we think, we bring a variety of thoughts together into some order. When the combination of thoughts are mutually supporting and make sense in combination, the thinking is "logical." When the combination is not mutually supporting, is contradictory in some sense, or does not "make sense," the combination is "not logical."

Does my thinking make sense together?

Does my conclusion follow from the evidence or is there a more logical conclusion?

Is My Thinking Focusing On What is Most Significant?

Is this the most important problem I need to deal with at this time?

Which of these facts are the most important for me to consider?

Is this the most essential idea which I should focus on?

Some Universal Intellectual Standards: And Questions That can be Used to Apply Them

Universal intellectual standards are standards which must be applied to thinking whenever one is interested in checking the quality of reasoning about a problem, issue, or situation. To think critically entails having command of these standards. To help students learn them, teachers should pose questions which probe student thinking, questions which hold students accountable for their thinking, questions which, through consistent use by the teacher in the classroom, become internalized by students as questions they need to ask themselves.

The ultimate goal, then, is for these questions to become infused in the thinking of students, forming part of their inner voice, which then guides them to better and better reasoning. While there are a number of universal standards, the following are the most significant:

Clarity

Could you elaborate further on that point? Could you express that point in another way? Could you give me an illustration? Could you give me an example? Clarity is a gateway standard. If a statement is unclear, we cannot determine whether it is accurate or relevant. In fact, we cannot tell anything about it because we don't yet know what it is saying. For example, the question "What can be done about the education system in America?" is unclear. In order to adequately address the question, we would need to have a clearer understanding of what the person asking the question is considering the "problem" to be. A clearer question might be "What can educators do to ensure that students learn the skills and abilities which help them function successfully on the job and in their daily decision-making?"

Accuracy

Is that really true? How could we check that? How could we find out if that is true? A statement can be clear but not accurate, as in "Most dogs are over 300 pounds in weight."

Precision

Could you give me more details? Could you be more specific? A statement can be both clear and accurate, but not precise, as in "Jack is overweight" (We don't know how overweight Jack is, one pound or 500 pounds.).

Relevance

How is that connected to the question? How does that bear on the issue? A statement can be clear, accurate, and precise, but not relevant to the question at issue. For example, students often think that the amount of effort they put into a course should be used in raising their grade in a course. Often, however, "effort" does not measure the quality of student learning, and when that is so, effort is irrelevant to their appropriate grade. Depth:

How does your answer address the complexities in the question? How are you taking into account the problems in the question? Is that dealing with the most significant factors?

Breadth

Do we need to consider another point of view? Is there another way to look at this question? What would this look like from a conservative standpoint? What would this look like from the point of view of...?

Logic

Does this really make sense? Does that follow from what you said? How does that follow? But before you implied this and now you are saying that, I don't see how both can be true.

(Paul, R. and Elder, L. (May 1996). Foundation for Critical Thinking