

# **CRITICAL THINKING AND EDUCATION**

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John E. McPeck

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JOHN E. MCPECK

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JOHN E. McPECK

# *For Jeanne, Heather and Jenny*

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John E. McPeck  
London, Ontario

## CHAPTER 1

# The Meaning of Critical Thinking

Among people who bother to think about education at all, reflective parents, theorists, radical reformers and traditionalists alike, there is a prevailing opinion that the ability to think critically is a desirable human trait, and that for this reason it should be taught in our schools whenever possible. Being in favour of critical thinking in our schools is thus a bit like favouring freedom, justice or a clean environment: it meets with general approval from the outset. But as with those other concepts, it is not at all clear that people mean the same thing by critical thinking, nor that they would all continue to approve of it if they did agree about what it meant. For very often with such matters approval diminishes in inverse proportion to the clarity with which they are perceived. One might, in fact, take such wide and diverse approval of critical thinking as an index of the vagueness of the concept. On the assumption that enlightened disagreement is preferable to consensus formed in the dark, I shall attempt to clarify the concept of critical thinking and to draw out its curriculum implications. If this can be done, agreement and disagreement on the issue will at least be intelligible.

The problem has not been a dearth of literature on critical thinking; on the contrary, journal discussions and pre-packaged curricula are legion. The problem is that there is no precise way of assessing this material in the absence of an understanding of what the concept entails

and what it precludes. At the moment, the persistent vagueness of the concept supports curriculum proposals ranging from courses in Latin to logic and clever puzzle games. All such proposals have claimed to promote critical thinking.

In addition to the vagueness of the concept, there are several closely related questions that require separate elucidation. For example, clarifying what critical thinking is may not guarantee an answer to the question of whether it is teachable, let alone how to teach it. And even if we had answers to these questions, the nature of the connection between critical thinking and education requires more precise consideration than it has enjoyed heretofore. What is clear, however, is that at the centre of this cluster of issues is the question of what critical thinking *is*. Without an answer to this question one cannot begin to answer any of the others. Let us clear the ground first.

#### *What critical thinking is not*

On the surface at least, it would appear that the phrase 'critical thinking' simply refers to the careful and precise thinking that is used to resolve some problem. Indeed, this is perhaps not far from the truth. But what, we might ask, is responsible for all the confusion and contradictory proposals surrounding this rather straightforward idea?

The confusion stems from approaching the concept as though it were a self-evident slogan whose precise ingredients were considered to be clear and self-justifying by those who favour its promulgation. The phrase 'critical thinking' is both over-worked and under-analysed in the same way that the term 'education' was before the work of R. S. Peters. Even the more careful work that has been done on critical thinking tends to rush over the analysis of the basic concept and to move on to itemizing the various skills that it is thought to involve. For example, Robert Ennis's landmark paper 'A concept of critical thinking'<sup>1</sup> simply declares that critical thinking means 'the correct assessment of statements'. But nowhere does he provide a justification for this view. Furthermore, it is quite clear

that this is *not* what critical thinking means, since one could correctly assess a statement without having done so critically (one could do it by chance, for instance). In addition, there are many activities (for example, mountain climbing) and skills (chess, competitive wrestling and so on) that permit critical thought but do not necessarily involve the 'assessment of statements'. My point here is not so much that Ennis's view is mistaken, but rather that his mode of procedure is typical in giving short shrift to the conceptual analysis of what is being discussed, that is, critical thinking.

Whatever critical thinking may be precisely, it is quite clear that it is *thinking* of some sort. Perhaps for this reason, research in this area has been dominated by psychologists.<sup>2</sup> However, such research is unfortunately characterized by studies of very specific types of thinking, such as inductive or deductive reasoning or specific types of problem solving, as in chess, spatial reasoning, calculating and so forth. It has not therefore provided a conceptual analysis of critical thinking in general. We need to ask what, if anything, all the instances have in common.

Thinking sometimes just happens to us, as in daydreams, passing impressions or even hallucinations (that is, involuntarily), and at other times it is intentional and directed (voluntary). A case might be made to the effect that dreams and other forms of involuntary thinking sometimes help us solve problems, but this is not the type of thinking of concern here, since it is not the kind that can be directly taught, and in any case it would not qualify for the adjective 'critical'.<sup>3</sup> It is important to note, however, that thinking is always thinking *about* something. To think about nothing is a conceptual impossibility. The importance of this simple point is that it raises serious questions about the meaning of such commonly heard claims as 'I teach thinking', or 'I teach students to think.' One may well ask 'About what?' Nor would the claim that one taught 'thinking in general' or 'thinking about everything' be any more helpful. For to think about nothing in particular is equivalent to not thinking at all. And to think of 'everything in general' is incoherent. On the other hand, if

the claim 'I teach students to think' is intended to mean 'Every time some particular thing occurs to a student, I teach him to think about it', then it must mean one of two things. It is either the vacuous tautology 'Every time a student thinks about something I teach him to think about *that* something', or it means 'Every time he thinks about something I teach him to think *more* about that something.' This latter claim is meaningful, but it is important to realize that what constitutes 'thinking more about something', apart from holding the identical thought in the mind longer, must be adding something to it, making finer discriminations with respect to it or otherwise changing one's perspective of it. In each case of thinking about something or thinking *more* about something there is a singling out, or particularization, from an infinite plethora of other possible thoughts. In other words, it is a matter of conceptual truth that thinking is always *thinking about X*, and that X can never be 'everything in general' but must always be something in particular. Thus the claim 'I teach students to think' is at worst false and at best misleading.

Thinking, then, is logically connected to an X. Since this fundamental point is reasonably easy to grasp, it is surprising that critical thinking should have become reified into a curriculum subject and the teaching of it an area of expertise of its own. One of the reasons for this is perhaps a new and progressive emphasis on the *critical* part of critical thinking. It might seem that if one focuses on the adjective 'critical', the particular object of thought becomes relatively unimportant or incidental. But this view ignores the fact that the adjective 'critical' simply qualifies 'thinking' (both grammatically and in fact), and so critical thinking, too, must be directed toward something.

The adjective 'critical' describes a kind of thinking, just as do 'precocious', 'imaginative', 'creative', 'sensitive' and so on. But they do not describe what is being thought about. Thus when one drops the X, or merely the emphasis on X, from the sentence 'I teach critical thinking about X', one arrives at a statement that is equivalent to 'I teach imagination', 'I teach precocity', 'I teach creativity'. And even if some sense can be made of the claim that creativity, imagination

and critical thinking are general skills, it can be seen that they must be the concomitants of other pursuits, since they are related to the way in which something is done, not what is done (for example, 'She plays the piano *sensitively*'). Adding the adjective 'critical' to the phrase 'thinking about X' describes in some general way *how* something is thought about, but it does not describe that something. In isolation from a particular subject, the phrase 'critical thinking' neither refers to nor denotes any particular skill. It follows from this that it makes no sense to talk about critical thinking as a distinct subject and that it therefore cannot profitably be taught as such. To the extent that critical thinking is not about a specific subject X, it is both conceptually and practically empty. The statement 'I teach critical thinking', *simpliciter*, is vacuous because there is no generalized skill properly called critical thinking.

### *What is critical thinking?*

What is it, then, that we are trying to convey and, more important, to achieve when we talk about getting people to think critically? We can, after all, use the phrase 'critical thinking' in perfectly meaningful ways. Moreover, its meaning is distinguishable from the meanings of 'imaginative thinking', 'sensitive thinking', 'creative thinking' and the like. It has already been argued that thinking is always thinking about something - for example, some problem, activity or subject area. And only such things as problems, activities or subjects can be thought about critically. Critical thinking always manifests itself in connection with some identifiable activity or subject area and never in isolation. Consequently, just as there are innumerable activities and types of activity that can be thought about critically, so there are innumerable ways in which critical thinking can be manifested. Just as certain activities can be done well or poorly, so certain activities can be done critically or uncritically. There are many distinct types of behaviour that could count as 'critical thinking behaviour'. In some instances, such behaviour might outwardly manifest itself in an act requiring physical

strength, in others dexterity, perhaps most often in the assessment of statements of some kind.

Given the large spectrum of activities that allow of critical thinking, there is likely to be a correspondingly large number of criteria for the correct application of the phrase. In this sense the phrase 'critical thinking' functions like the term 'creative': actions that deserve the epithet vary widely, but the intended meaning is constantly identifiable.<sup>4</sup> Just as scientists, engineers, lecturers and artists can all display creative thought, so can they all display critical thought. Indeed, in many instances the final product of each kind of thinking might be indistinguishable to the observer, but this does not render their meanings identical. Usually, if one says that something is 'creative', one means to imply that it is novel and/or aesthetically appealing. If one describes a certain thought or bit of thinking as 'critical', however, one does not require it to be novel or aesthetically appealing. A 'critical' thought might issue in something novel or appealing, but it does not necessarily do so.

On the surface at least, perhaps the most notable characteristic of critical thought is that it involves a certain scepticism, or suspension of assent, towards a given statement, established norm or mode of doing things. This scepticism might ultimately give way to acceptance, but it does not take truth for granted. Instead, it considers alternative hypotheses and possibilities. Such thought might result in the detection of a fallacy, but it might equally well prompt a decision not to apply a perfectly well established rule, principle or procedure in a given instance. Indeed, the solution of many difficult problems often requires just that. In part, critical thinking involves seeing when a certain common procedure is fruitless by entertaining alternatives to it.

However, this scepticism is not pervasive or unjustified; that is, it is not automatically applied to every statement, argument or mode of doing things that one encounters. As John Passmore has pointed out:

We can imagine someone who was so drilled that to any assertion he responded with 'I question that!', however

inappropriate the response in relation to its association. Such a person might be said to have formed a habit of questioning, but he would certainly not have learned to be critical.<sup>5</sup>

Rather, critical thinking requires the judicious use of scepticism, tempered by experience, such that it is productive of a more satisfactory solution to, or insight into, the problem at hand. At least, this is why it is invoked. It is important to realize that the criterion for regarding scepticism as judicious, as opposed to incorrect or frivolous, must be determined by the norms and standards of the subject area in question. Learning to think critically is in large measure learning to know when to question something, and what sorts of questions to ask. Not just any question will do.<sup>6</sup>

In short, critical thinking does not consist in merely raising questions, as many questions are straightforward requests for information. Nor does it involve indiscriminate scepticism, for that would ultimately be self-defeating, since it leads to an infinite regress. Rather, it is the appropriate use of *reflective scepticism* within the problem area under consideration. And knowing how and when to apply this reflective scepticism effectively requires, among other things, knowing something about the field in question. Thus we may say of someone that he is a critical thinker about X if he has the propensity and skill to engage in X (be it mathematics, politics or mountain climbing) with reflective scepticism. There is, moreover, no reason to believe that a person who thinks critically in one area will be able to do so in another. The transfer of training skills cannot be assumed of critical thinking but must be established in each case by empirical tests. Calling to witness such notorious cases as distinguished logicians with no idea for whom to vote, nor why, it is fair to postulate that no one can think critically about everything, as there are no Renaissance men in this age of specialized knowledge.

Since critical thinking is always 'critical thinking about X', it follows that critical thinking is intimately connected with other fields of knowledge. Thus the criteria for the judicious use of scepticism are supplied by the norms and



standards of the field under consideration. Surprisingly, this simple insight runs against the general trend of textbooks on the subject, written primarily by philosophers, which stress certain logical skills. Every text that I have seen on critical thinking emphasizes some procedure for the detection of fallacies by using either formal or informal logic. This is due in no small part, I think, to what I call 'the philosopher's fallacy'. This fallacy consists in regarding a *necessary* condition of critical thinking, namely a concern for logic, as a *sufficient* condition for critical thinking. I am not suggesting that logic has nothing to do with critical thinking, but rather that it plays a comparatively minor role – particularly when compared with knowledge of, and experience in, a specific field. Logic texts and critical thinking courses tend to play down this very important point by analysing readily accessible newspaper editorials and advertisements as though this exercise alone were sufficient to create a critical thinker. But logicians and philosophers have no monopoly on the use of logic; at most, they have a monopoly on the specific study of logic. No scientist, historian or archaeologist worth his salt is ignorant of the importance of avoiding contradictions, but consistency in itself is a long way from being sufficient to make him a critical thinker in his field. Knowledge of some natural language, like logic, is often a necessary condition for engaging in many activities, but it is seldom a sufficient condition. It is noteworthy that Robert Ennis's analysis of the concept of critical thinking points out that critical thinking has three dimensions: a logical dimension, a criterial dimension and a pragmatic dimension.<sup>7</sup> The last two dimensions have nothing to do with the detection of fallacies, or with logic as such, but have to do with specific knowledge of a subject area. It is therefore all the more surprising, though typical, that much of his analysis should focus on 'definition', 'ambiguity' and other topics from elementary logic.

I have already suggested that the core meaning of critical thinking is the propensity and skill to engage in an activity with reflective scepticism. However, this definition leaves room for ambiguities, which I would like to clarify. First,