



ROLAND CASE

Bringing Critical Thinking to the Main Stage

Every curriculum document mentions critical thinking, and there is universal agreement about the need to make thoughtful judgments in virtually every aspect of our lives – from who and what to believe to how and when to act. Despite long-standing and widespread recognition, the extent and manner of teaching for critical thinking in schools is disheartening. As I have argued elsewhere, the rhetoric greatly outstrips practice.¹ As Walter Parker puts it, the teaching of thinking remains “more wish than practice.”²

Although numerous factors contribute to this regrettable state of affairs, three reasons are especially influential in relegating critical thinking to a side-show on the educational agenda:

- **Proliferation of thinking ‘skills.’** There is a plethora of so-called thinking skills. For example, an ASCD publication identifies eight thinking processes (including problem solving, decision making and research) involving 21 core thinking skills (including defining goals, setting goals, inferring, and predicting).³ As long as critical thinking remains but one type among many forms of thinking, there will never be adequate time devoted to it.
- **The ranking of thinking skills.** The proliferation deficit is compounded by the designation of critical thinking as ‘higher order thinking,’ which presumably requires mastery of ‘lower order thinking’ before it can be introduced to students. In the Ontario curriculum, for example, the applied courses intended for non-academic students are distinguished from academic courses not by the content addressed, but by the level of thinking expected of students. As one report noted, the applied curriculum writers use “lower order verbs,” changing student expectations from “interpret” to “describe” or from “explore” to “record.” Curriculum writers apparently presume that “[a]ppplied students cannot think ... [and] are, therefore, relegated to simple tasks like reading and repeating.”⁴ Not only are many thinking skills vying for classroom attention but critical thinking appears to be at the end of the list, reserved for the best students.
- **Separation of ‘skills’ from content.** The teaching of critical thinking is generally divorced from the teaching of subject matter. In many classrooms, especially in high schools, curriculum content is the priority. Thinking skills are addressed after the subject matter has been taught. Only at the end of a unit are students invited to reflect on the ideas they have encountered. Because of the heavy course load and the content focus of high stakes tests, many teachers find themselves with little time to involve students in thinking about this content. Even when critical thinking is addressed in classrooms, it is typically separated from subject matter and taught as a generic skill that students are expected (on their own) to apply to their schooling and everyday life.

Our work with thousands of Canadian teachers through The Critical Thinking Consortium⁵ (TC²) has convinced us that critical teaching can assume a rightfully central place on the main stage of classroom activity. We start from the premise that it is a powerful method of teaching all other aspects of the curriculum – both content and skill. We help teachers see how inviting students to think critically about subject matter is effective at promoting both understanding of the content and mastery of the skills. Students who passively receive information are far less likely to understand what they have heard or read about than are students who have critically scrutinized, interpreted, applied or tested this information. Rather than compete with the teaching of subject matter and other thinking skills, critical thinking supports their development.

The two distinguishing features of our conception are a *curriculum embedded* approach and an emphasis on *teaching the intellectual tools* required for critical thinking.⁶

A curriculum-embedded approach

Our approach to embedding critical thinking is to help teachers learn to present questions or tasks that challenge students to reflect critically about the curriculum content and skills. We dispute the view that critical thinking is a generic set of skills or processes to be developed independent of content and context. Nor do we believe that critical thinking can adequately be addressed as an add-on to the curriculum. Rather, if it is to take a central place in the curriculum, critical thinking must be seen as a *way of teaching the curriculum*. The traditional “content-process” division is based upon a false dichotomy; in fact, thinking without content is vacuous and content acquired without thought is mindless and inert. As Richard Paul notes, “one gains knowledge only through thinking.”⁷

Teachers can help students understand content, as opposed to merely recall it, by “problematizing” the subject matter. As John Dewey wrote in *How we Think*, only when a routine is disrupted by the intrusion of a difficult obstacle or challenge are we forced to think about what to do. If a situation is not problematic (i.e., there is only one plausible option or a correct answer is obvious) then it does not call for critical thinking. We use the term “critical challenge” to describe a problematic situation that invites students to think critically. Without altering the resources used or changing their classroom structure, teachers are encouraged to challenge students. For example, instead of asking students to locate information to answer the factual question, “What did the Inuit traditionally use to make tools?” the teacher might ask students to decide which animal – the seal or the caribou – contributed more to traditional Inuit life? Similarly, instead of writing a report on a famous scientist, students might assess whether da Vinci, Newton or Einstein, had the greatest scientific mind. Instead of simply picking a title that students would like for their paragraph, students might decide which of several options was the most informative and engaging.

In all these cases, students go beyond locating facts or espousing a personal preference. They are not merely reporting what they know or like but are judging or assessing possible options. In making thoughtful assessments or reasoned judgments, we must inevitably resort to criteria – some basis other than our own preferences and whims for selecting one option over another. For example, in deciding whether or not ice cream ought to be part of our diet, we would want to go beyond whether we personally liked the food and consider whether it was nutritious, affordable, readily available, and easy to keep. This larger set of factors forms the criteria involved in making a reasoned judgment on the merits of including ice cream in our diet.

The close relationship between the term “critical” thinking and “criteria” is instructive. Mathew Lipman suggests that the word ‘critical’ should be seen as a synonym for ‘criterial’ – to think critically is to think in light of or using criteria.⁸ In helping students think critically, we invite them to consider a reasonably complete and appropriate set of criteria. Left on their own, they may use very narrow and dubious criteria, such as whether a course of action is easy and in their immediate self-interest, neglecting criteria such as long-term benefit, fairness to others, consistency with life goals, and safety.

As suggested above, many professional and academic

EN BREF La pensée critique n'est pas un ensemble générique d'aptitudes ou de processus que l'on peut développer sans égard pour le contenu ou le contexte. Ce n'est pas non plus quelque chose que l'on peut enseigner dans un cours d'appoint au programme d'études. Pour susciter avec efficacité cette pensée chez les enfants, il faut la concevoir comme une *façon d'enseigner le programme d'études*. En effet, les enseignants peuvent amener leurs élèves à faire preuve d'un esprit critique dans la réalisation de toute tâche intellectuelle qui exige du jugement ou de choisir entre plusieurs options. Même une tâche aussi anodine que celle de prendre des notes peut être une occasion de réfléchir d'une manière critique. On compte cinq types de ressources intellectuelles qui appuient la pensée critique : la connaissance des faits, les critères de jugement, le vocabulaire de la pensée critique, les stratégies de réflexion et les habitudes de l'esprit.

writers contrast critical thinking with a variety of other “forms” of thinking, such as decision making or problem solving. According to this view, only certain tasks – those typically referred to as “higher-order” operations – are the domain of critical thinking. It is thought that if students perform “higher-order” operations such as analyzing or synthesizing, they are necessarily thinking critically, and if they perform so-called “lower-order” operations, such as comprehending or remembering, they cannot be thinking critically. This tendency to equate critical thinking with particular mental operations suggests, on one hand, that teachers are supporting critical thinking merely by asking students to carry out tasks involving “higher-order” operations and, on the other hand, that there is no role for critical thinking in the so-called “lower-order” operations.

Whether or not students are thinking critically depends more on the qualities that characterize their thinking than on the specific nature or type of mental operation. The mere fact that students are analyzing does not mean they are doing it critically. If they blindly accept dubious assumptions, leap to fallacious conclusions, and rely on inaccurate statements, we would be hard pressed to describe their “analysis” as critical thinking. Conversely, so-called “lower-order” operations, such as comprehending or remembering, can be occasions for critical thinking. Trying to understand a difficult text or lecture may involve elaborate and thoughtful recourse to decoding strategies, habits of mind, and background knowledge. So too, with remembering; many of us with poor memories have experimented with various strategies – mnemonics, lists, mental notes, repetition. If we assessed these strategies, however informally, for their reliability, ease of use, and broad application, we would be thinking critically about remembering. As these examples suggest, “higher order” operations can be done in a rote and thoughtless way, and “lower order” operations can be done in a critically thoughtfully manner.

Teachers can engage students in thinking critically in any intellectual task involving judgment or choice among options. They can make even such a seemingly rote task as note-taking become an occasion to think critically by introducing students to the criteria for good notes and by suggesting various strategies – circling key words, webbing of ideas, paraphrasing – and, perhaps also, by nurturing an intellectual works ethic – that is, a commitment to competently carrying out relevant thinking tasks. In teaching the criteria for good note-taking, teachers might ask students to imagine that a local politician has approached them to prepare concise briefing notes on the day's front-page news. In one-half page, they should accurately summarize all the important points, but only for those topics of use to

Not only are many thinking skills vying for classroom attention but critical thinking appears to be at the end of the list, reserved for the best students.



If it is to take a central place in the curriculum, critical thinking must be seen as a way of teaching the curriculum. The traditional “content-process” division is based upon a false dichotomy; in fact, thinking without content is vacuous and content acquired without thought is mindless and inert.

LEARN THE SKILLS. LEAD THE FUTURE.

**THE CISCO NETWORKING ACADEMY® PROGRAM
TEACHES INTERNET AND TECHNOLOGY SKILLS
ESSENTIAL IN TODAY'S ECONOMY TO STUDENTS IN
HIGH SCHOOLS, TECHNICAL SCHOOLS, COLLEGES
AND UNIVERSITIES ACROSS CANADA AND, AROUND
THE WORLD.**

The Networking Academy program utilizes a blended learning model, integrating face-to-face teaching with a challenging web-based curriculum, hands-on lab exercises, and Internet-based assessment. The Academy program offers state-of-the-art on-line assessments, student performance tracking, hands-on-labs, and most importantly instructor training and support.

Academy graduates are better prepared for networking and IT related careers in the public and private sectors, as well as for higher education in engineering, computer science and related fields.

Discover the difference a Cisco Networking Academy Program graduate can make.

now.

Find out more information at
cisco.com/offer/skills2.

THIS IS THE POWER OF THE INTERNET. **now.**





Teachers can engage students in thinking critically in any intellectual task involving judgment or choice among options. They can make even such a seemingly rote task as note-taking become an occasion to think critically.

It is often assumed that mere repetition will improve students' reflective competence. No doubt some will improve by repeatedly trying to figure things out for themselves, but most will be more successful if they are taught the requisite tools for the task.

the politician. Students are thinking critically about their note taking as they judge whether or not their suggested entries are accurate, relevant, comprehensive and concise.

As one elementary teacher who had begun working with our approach remarked in her journal: "As I reflect on critical thinking and what I am learning, I am realizing more and more that critical thinking is a form of teaching, embedded in every aspect of life in the classroom. It doesn't happen in isolation, or in specific subjects, but it permeates the curriculum." Who would want their students to write an essay, paint a picture or, for that matter, take notes in a critically thoughtless way? Of course, success in the particular endeavor will depend on the possession of the tools of good thinking.

Teaching the tools

We offer the notion of intellectual resources or "tools" to explain the development of good thinking. Much of the frustration teachers experience when attempting to engage students in thinking critically stems from the fact that students often lack the required concepts, attitudes, knowledge, criteria or strategies – in short, the tools needed to do a reasonably competent job. It is often assumed that mere repetition will improve students' reflective competence. No doubt some will improve by repeatedly trying to figure things out for themselves, but most will be more successful if they are taught the requisite tools for the task.

Although the specific tools depend on the nature of the challenge facing the thinker, promoting critical thinking is largely a matter of helping students master an ever broadening repertoire of five types of intellectual resources:

- Background knowledge: knowledge of relevant information about a topic that is required for thoughtful reflection. Although it should be obvious that we cannot think critically about a topic if we know little or nothing about it, many accounts of critical thinking are based on a presumption that thinking skills or operations are independent of the content areas to which they are to be applied. Properly understood, relevant background knowledge is not separate from any skill, but part of what is required to be skilled. For this reason, individuals need to acquire information relevant to the range of topics that we want them to be able to think critically about. Presumably this range of topics is (or should be) found in the subject matter of the curriculum. This point speaks strongly for embedding the teaching of critical thinking with the teaching of curricular content.
- Criteria for judgment: knowledge of the appropriate criteria or grounds for judging the reasonableness or merits of the options presented by a thinking challenge. To think critically is essentially to engage in deliberations with the intention of making a reasoned judgment. And judgments inevitably are made on the basis of criteria. For this reason, an important category of tool is the range of context-sensitive criteria spanning the diverse intellectual tasks found in the curriculum, from what makes for a good argumentative essay, a sound solution to a business problem or a thoughtful question, to the qualities of a reliable scientific experiment, an accomplished artistic performance, or effective lecture notes.
- Critical thinking vocabulary: knowledge of the concepts and distinctions that are needed to think about the chal-

lenge. Although other tools also refer to concepts, 'critical thinking vocabulary' refers to concepts that expressly address distinctions foundational to thinking critically – for example, knowledge of the difference between 'conclusion' and 'premise', 'cause' and 'correlation,' or 'cause' and 'effect,' and knowledge of various informal fallacies.

- Thinking strategies: knowledge of procedures, heuristics, organizing devices, algorithms and models that may be useful when thinking through a challenge. Good critical thinkers draw upon a great variety of strategies to work their way through the challenges facing them. This category of tools is most closely aligned with what others call skills, although we believe they are more responsibly viewed as strategies. Thinking strategies may be very elaborate, such as following a comprehensive decision-making model, or they may be very focused, addressing a specific task, such as paraphrasing a statement to improve understanding. There are literally thousands of strategies that guide individuals in working through the challenges they encounter.
- Habits of mind: commitments to the range of values and principles of a careful and conscientious thinker. Although more commonly described as dispositions, we prefer the term 'habits of mind' to refer to the intellectual ideals or virtues that orient and motivate thinkers in ways that are conducive to good thinking, such as being open-minded, fair-minded, tolerant of ambiguity, self-reflective and attentive to detail.

It is significant that our five categories draw support from within the diverse body of literature on thinking. There are "schools" of thinking that focus on each of the five tools we identify, suggesting that our categories represent a more complete synthesis of the range of critical thinking building blocks than is otherwise found in any single account.

An important function of the tools approach is to help teachers identify what students need to be taught in order to undertake a given task in a critically thoughtful manner. To illustrate the instructional value of our model, consider the following example of teaching primary students the tools needed to ask effective questions.

Developing powerful questions⁹

As part of their social studies curriculum, Tami McDiarmid's kindergarten to grade three class was to learn about the significance of Remembrance Day (November 11). In fostering appreciation of this event, Tami invited her students to think of questions they might ask of a classroom guest who was to speak about his World War II experiences. Left to their own devices, many students would likely have asked rather trivial or irrelevant questions. Tami sought to support her students in thinking critically about the questions they might ask by focusing their attention on four tools: critical thinking vocabulary, criteria for judgment, a thinking strategy, and background knowledge.

A few days prior to the visit, Tami re-introduced key vocabulary by reminding her students that they had previously talked about two kinds of questions: "weak" questions and "powerful" questions. Armed with this distinction, the class discussed what powerful questions "look like or sound like" – or, to use our terminology, they discussed the criteria for judging powerful questions. Tami recorded

on chart paper the following student-generated criteria:

- Powerful questions . . .
- give you lots of information;
- are specific to the person or situation;
- are open-ended – can't be answered by yes or no;
- may be unexpected;
- are usually not easy to answer.

Next, Tami made use of a thinking strategy – brainstorming – which her students had already learned to use. Brainstorming is a useful strategy to help with the generation of ideas, although in itself, it does not invoke critical thinking. The critical thinking began in earnest when students, working in pairs, began to assess the brainstormed questions. Using the agreed-upon criteria as their guide, students discussed whether or not their proposed questions were likely to elicit lots of information, were obvious or predictable, and so on. Some “weak” questions were rejected; others were modified to make them more powerful.

Tami had developed a fourth tool – relevant background knowledge – during the three weeks preceding the guest's visit by reading and discussing various children's stories involving the war. Without the knowledge acquired from these stories, many students would have been incapable of asking a thoughtful question.

Here is a sampling of the student-generated questions asked of the World War II veteran:

- Why did you fight in the war?
- Do you remember some of your friends from the war?
- Which countries did you fight over?
- Where did you live during the war?
- Were there any women in World War II? If so, what were their jobs?
- What started the fighting?
- Why was Canada involved?
- What was your safe place?

In this example, Tami systematically aided her primary students in thoughtfully constructing questions by teaching four tools. Notice, teaching the tools is not the same as giving students the answers or doing the thinking for them. Tami did not indicate to students the questions they might ask; rather she helped them develop the intellectual resources they needed to thoughtfully complete the task for themselves. Not only was these students' ability to pose powerful questions aided by the tools their teacher helped

them acquire, their understanding of the subject matter – in this case the significance of Remembrance Day – was also enhanced by the experience.

As this example suggests, embedding critical thinking in the teaching of subject matter and skills has a double-edged benefit: students are more likely to master the curriculum outcomes that we want them to learn, and critical thinking will finally occupy the prominent role in elementary and secondary classrooms that it deserves. ■

ROLAND CASE is professor of curriculum and social studies in the Faculty of Education at Simon Fraser University. He is currently on long-term leave from the university to direct TC² – The Critical Thinking Consortium. Roland is co-editor of the *Critical Challenges Across the Curriculum*—the award winning series of teaching resources published by TC². Information about the Consortium and their publications is available on their website, <http://www.sd38.bc.ca/TC2>

Notes

- 1 Roland Case and Ian Wright, “Taking Seriously the Teaching of Critical Thinking,” *Canadian Social Studies*, 32, 1 (1997): 12-19.
- 2 Walter Parker, “Achieving Thinking and Decision-making Objectives in Social Studies” in *Handbook of Research on Social Studies Teaching and Learning*, ed. J. Shaver (Toronto: Collier Macmillan, 1991) 345-356.
- 3 R.J. Marzano, R.S. Brandt, C.S. Hughes, B.F. Jones, B.Z. Pressisen, S.C. Rankin and C. Suhor, *Dimensions of Thinking: A Framework for Curriculum and Instruction* (Alexandria, VA: Association for Supervisions and Curriculum Development, 1988).
- 4 Fabrizio Antonelli, *From Applied to Applause* (Toronto: Ontario Secondary School Teachers' Federation, November 2004) 33, 35.
- 5 TC² was founded in 1993 in British Columbia to provide long-term sustained support for critical thinking. Since that time, TC² worked with over 25,000 educators and its institutional membership has grown to 42 school districts, faculties of education and other educational organizations in Ontario, Manitoba, Alberta, and BC. It supports an affiliate network of schools in India and has begun working with schools in the United States.
- 6 This conception was developed initially in collaboration with Jerrold Coombs, LeRoi Daniels and Sharon Bailin. See S. Bailin, et al., *A Conception of Critical Thinking for Curriculum, Instruction and Assessment* (Victoria, BC: Examinations Branch, Ministry of Education, September 1993) and S. Bailin, et al., “Conceptualizing Critical Thinking,” *Journal of Curriculum Studies* 31, no. 3 (1999): 285-302.
- 7 Richard Paul, “The logic of creative and critical thinking” in R. Paul, *Critical thinking: How to prepare students for a rapidly changing world*, (Santa Rosa, CA: Foundation for Critical Thinking, 1993) 277.
- 8 M. Lipman, “Critical Thinking: What Can it Be?” *Educational Leadership* 45, (1988).
- 9 This example is based on a lesson described in T. McDiarmid, R. Manzo and T. Musselle, *Critical Challenges for Primary Students* (Richmond, BC: The Critical Thinking Consortium, 1999) 57-59.

pdstore.com

A not-for-profit online bookstore featuring learning resources of all types, hard to find textbooks, teacher resources and more!



www.pdstore.com