



## College Documentation Bulletin

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### THE DEVELOPMENT OF CRITICAL THINKING

#### Part One

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## Presentation

**One of school's purposes is to help students develop critical thinking. Do schools fulfill this role adequately?** Some of us will say yes and others will say no. However, all of us will agree that advancing intelligence has always constituted both an objective and a challenge for educators. Over the past few decades, this education goal has crystallised around the development or strengthening of critical thinking, particularly in the United States. There are several reasons why we should focus on enhancing greater intellectual rigor in students, notably to make them better learners.

The purpose of this bulletin is to provide teachers with the tools they need in order to help their students become critical thinkers. Following a short introduction, the first part defines what we call “critical thinking”. The second part (to be published) will be devoted to the principles and practice of critical pedagogy while providing examples of critical thinking used in pedagogy.

## Introduction

By way of introduction, we will present three references offering a comprehensive and complementary perspective on the subject at hand: an article providing an overview of the “what and how” of critical thinking, the entry of “critical thinking” in a dictionary of education and a short interview with a digital thinker cautioning us to develop a critical approach to the technological culture.

**LALIBERTÉ, Jacques.** “L'école et le développement de la pensée critique”. *Vie pédagogique*. March 1992: 33-37, number 77 (available at the CDC [by request](#)).

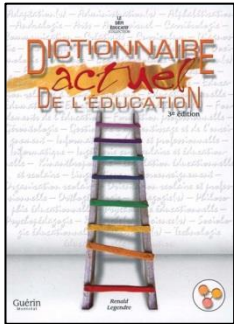
This article is an excellent introduction to the issues involved in developing critical skills. From the outset, the author asks the following question: “How can schools help students develop critical thinking?” First, he reviews the major interest raised by this subject and then provides keys to answer the three following questions:

**1- What is critical thinking?** Among the four definitions provided, let us retain the following two as examples: “Critical thinking is reasonable and reflective thinking focused on deciding what to believe or do.” (Robert H. Ennis); “Critical thinking is the propensity and skill to engage in an activity with reflective skepticism.” (John E. McPeck). According to Laliberté, critical thinking is characterized by the use of methodological doubt, a systematic inquiry process, rational criteria and openness to new information: “Critical thinking cannot be taken for granted. It is not instinctive. It is a way of being that we develop and it is not set in stone.” (p. 34).

**2- What are its attributes or components?** In addition to a background of knowledge, the critical thinker must master intellectual abilities and skills and set in motion certain dispositions or attitudes. Verifying the accuracy of information and determining if a source is credible or not constitute two examples of intellectual abilities and skills. Keeping one's focus on the study

subject, or on the problem to be solved, and to become aware of one's own beliefs through a reflective process represent dispositions and attitudes related to critical thinking

**3- What pedagogical tools can teachers use to promote the development of critical thinking in their students?** There are a number of principles outlined by Laliberté. One of them is that critical thinking can be systematically taught and learnt in each academic discipline or field of education. The author then outlines four practical means to develop critical thinking: 1. The practice of questions 2. Meta-cognition activities 3. Structured controversy 4. Exemplary teaching practices.



**LEGENDRE, Renald. *Dictionnaire actuel de l'éducation*. Montréal : Guérin éditeur Ltée. 3<sup>e</sup> édition, 2005: 1024-1026 (available at the CDC, on site consultation only, REF 701506 2005).**

In this dictionary of terms covering the language of education, the entry of “critical thinking” is defined in four different ways: general, didactic/pedagogical, educational, and research. The following critical thinking aspects are then considered in order to provide a comprehensive overview:

- |   |                           |
|---|---------------------------|
| A. Characteristics of critical thinking | H. Models                 |
| B. Other related skills                 | I. Educational philosophy |
| C. Nature                               | J. Pedagogical conditions |
| D. Critical thinking, mind              | K. Teaching strategy      |
| E. Angles and stages                    | L. Assessment             |
| F. Significance in education            | M. Framework              |
| G. The school's roles                   |                           |

### **FISCHER, Hervé / “Pensée critique, pensée magique”**

Interview available online, March 4, 2010. Running time: 3 min 12 s.

Netexplorateur

Hervé Fischer is the founder of the World Summit on Internet in Shenyang.

Artist and philosopher, Hervé Fischer has been engaged in the review of the digital age since 1983. Impassioned by this subject, he has become increasingly critical and believes it is **mandatory to develop critical thinking skills for the digital age**. According to Fisher, “we are in desperate need of digital philosophy.” With the technical gurus on one side and those that denounce technology in the name of humanism on the other, he advocates an attitude of “critical fascination” toward digital technology.

- Let's point out three of Hervé Fischer's essays published by VLB éditeur as part of the “Gestations” collection :
  - ***Le choc du numérique. À l'aube d'une nouvelle civilisation, le triomphe des cyberprimitifs***, essay, 2001. Translated in 2006 under the title ***Digital shock: confronting the new reality***.

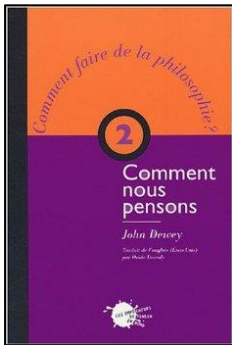
- **CyberProméthée. L'instinct de puissance à l'âge du numérique**, essay, 2003.
  - ✓ Please refer to Jacques Boisvert's review under "[Notes de lecture](#)" in the journal *Pédagogie collégiale*. October 2003 : 45-47, vol. 17, number 1.
  - **La planète hyper. De la pensée linéaire à la pensée en arabesque**, essay, 2004.
- Along with the following two texts published in 2014:
- **La divergence du futur**. VLB éditeur : 237 p.
  - **La pensée magique du Net**. Édition François Bourin : 374 p.

\*These references might be available at your college's library.

## 1. What is critical thinking?

This first section highlights the nature of critical thinking, its definition and characteristics. Before we can even think of promoting its development and assessment, we must adequately grasp the concept of critical thinking. We will start with the presentation of two books written by Dewey and Lipman respectively, two authors that have examined the act of thinking in depth. The following two texts highlight the links between emotions and critical thinking. We will thereafter present three models of critical thinking defined by Ennis, Paul and Lipman respectively. Finally, we will present an outline of a textbook devoted to the links between communication and critical thinking.

### The act of thinking



**DEWEY, John. *Comment nous pensons***. Paris : Les Empêcheurs de penser en rond / Le Seuil. 2004. (available at the CDC, class number [788772](#)).<sup>1</sup>

*How We Think* was written by the renowned American educational philosopher John Dewey (1859-1952) who specialized in applied psychology and pedagogy. In this book, he shares his **views on the act of thinking and how to promote it**. Here are some of the ideas from the first part of the book entitled *The Problem of Training Thought*. Dewey extends his thinking in the other two parts of the book entitled *Logical Considerations* and *The Training of Thought* respectively.

Dewey defines reflective thought, a concept we relate to critical thinking, as follows: “*Active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it, and the further conclusions to which it tends.*” (p. 15)<sup>2</sup>.

<sup>1</sup> Original version: Dewey, John. *How We Think*. Lexington, Mass: D.C. Heath. 1910.

<sup>2</sup> Re: p. 6 in original version.

**There are two processes involved in every reflective operation** and they are: 1) a state of perplexity, hesitation, doubt; and 2) an act of search or investigation directed toward bringing to light further facts which serve to corroborate or to nullify the suggested belief.

According to Dewey, **the end controls the act of thinking. The need to leave this state of doubt** is the guiding factor in the process of reflection, which brings Dewey to summarize his thought as follows: “*The problem fixes the end of thought and the end controls the process of thinking.*” (p. 22)<sup>3</sup>. Reflective thinking suggests suspending judgment which is painful because it involves a condition of mental unrest and disturbance. This **attitude of “suspended conclusion”**, along with the mastering of various methods of searching, constitutes for Dewey the most important factor in the training of good thinking habits. He concludes this chapter with the following: “To maintain the state of doubt and to carry on systematic and protracted inquiry – these are the essentials of thinking.” (p. 24)<sup>4</sup>.

Dewey identifies **two important and necessary attitudes** in the act of thinking: thoughtfulness and caution. **Thoughtfulness** is to give our mind to a question and to take pains with it. It is to “weigh up, ponder, deliberate”. **Caution** involves searching for complementary facts, establishing clearly defined and formulated links in order to draw conclusions or solutions; as opposed to an attitude of haste where one would skip from one consideration to the next or be content with an apparent plausible suggestion.

As for the role of education in the act of thinking, it is to **provide opportunities** to develop this ability and to **develop appropriate habits** which Dewey refers to as “A Disciplined Mind”. The author is guided by this principle: **genuine freedom is intellectual, not external**. The following excerpt summarizes this key concept: “Genuine freedom, in short, is intellectual; it rests on the trained *power of thought*, in ability to “turn things over”, to look at matters deliberately, to judge whether the amount and kind of evidence requisite for decision is at hand, and if not, to tell where and how to seek such evidence. If a man’s actions are not guided by thoughtful conclusions, then they are guided by inconsiderate impulse, unbalanced appetites, caprice, or the circumstances of the moment.” (p. 91)<sup>5</sup>. This excerpt reminds us of one of the fundamental missions of school: to develop thinking. It also shows very clearly how important critical thinking is.

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<sup>3</sup> Re: p. 12 in original version.

<sup>4</sup> Re: p. 13 in original version.

<sup>5</sup> Re: p. 67 in original version.



LIPMAN, Matthew. *À l'école de la pensée. Enseigner une pensée holistique*. Bruxelles: De Boeck. 2<sup>e</sup> édition, 2011. (available at the CDC, class number [788087](#)).<sup>6</sup>

Matthew Lipman, who died in December 2010, was a philosopher, an educator, a logician and an education researcher. He is the founder, theorist and leading developer of *Philosophy for Children*. In the second edition of *Thinking in Education*, Lipman offers a comprehensive view of education when it comes to training thought. **For Lipman, critical thinking is important, but it is not sufficient:** students must **also develop creative and caring thinking.**

### The critical thinking movement

In Lipman's views, for the vast majority of elementary school students, **critical thinking has not fulfilled its promise because of many deficiencies** such as: a narrow approach to critical thinking, insufficient teacher preparation and no effort to connect various dimensions of thinking (critical, creative and caring). In the first part of the second chapter, the author presents a **historical sketch of the critical thinking movement of recent years**. According to Lipman, Americans entered the movement in the 80's when they started to put the training of thought at the heart of education. Lipman mentions John Dewey, philosopher and psychologist, as precursor of the movement and his book *How We Think* (see above), first published in 1903, where Dewey distinguished ordinary thinking from reflective thinking. Lipman recognizes Dewey's crucial contribution: "To many in the critical thinking movement today, it was Dewey's emphasis on reflective thinking that was the true harbinger of critical thinking." (p. 47)<sup>7</sup>. Lipman believes that the most favourable time for critical thinking to emerge publicly was at the end of the 80's and at the beginning of the 90's.

### Conventional and less conventional characteristics of critical thinking

Lipman grouped the characteristics of critical thinking as formulated by Raymond S. Nickerson into two lists. One list includes what Lipman calls **conventional characteristics** but important nonetheless. Here, for example, are four of them from the 11 proposed characteristics of the critical thinker: 1) organizes thoughts and articulates them concisely and coherently; 2) suspends judgment in the absence of sufficient evidence to support a decision; 3) applies problem-solving techniques in domains other than those in which learned; 4) understands the differences among conclusions, assertions, and hypotheses.

The other list comprises a dozen characteristics qualified by Lipman as being "**less conventional and evidence of cognitive creativity.**" Here are six examples taken from that list : 1) understands the idea of degrees of belief; 2) sees similarities and analogies that are not superficially apparent; 3) recognizes that most real-world problems have more than one possible

<sup>6</sup> Original version: Lipman, Matthew. *Thinking in Education*. New York: Cambridge University Press, 1991 (available at the CDC, class number [712796](#)); 2<sup>nd</sup> ed., 2003.

<sup>7</sup> Re: p.35 in original version.



solution and that those solutions may differ in numerous respects and may be difficult to compare using a single figure of merit; 4) is sensitive to the difference between the validity of a belief and the intensity with which it is held; 5) can visualize differing viewpoints without distortion, exaggeration, or characterization; 6) is aware of the fact that one's understanding is always limited.

### **A multidimensional thinking approach**

The fourth and last part of the book titled *Education for the Improvement of Thinking* focuses on the dimensions of thinking and on how to teach them. For Lipman, **thinking is composed of different interrelated mental behaviours: critical thinking, creative thinking and caring thinking**. The prototype of the critical thinker is the professional, the expert, the model of good judgment. A prototype of the creative thinker is the artist. Some prototypes of the caring thinker are the solicitous parent, the considerate environmental planner, the thoughtful and concerned teacher.

For Lipman, **significantly improved thinking (or multidimensional thinking)** “aims at a balance between the cognitive and the affective, between the perceptual and the conceptual, between the physical and the mental, between the rule-governed and the non-rule governed.” (p. 194)<sup>8</sup>. If an instance in thinking satisfies criteria of all three forms of reflection (critical, creative, caring), then excellence in thinking can be reached. To help each student find this balance, **there must be a dramatic change in the nature of education**. Lipman writes: “The present pedagogical techniques that seek the critical at the expense of the creative and caring would themselves have to be excluded. A classroom would have to be a community of inquiry that facilitates creative and caring thinking.” (p. 196)<sup>9</sup>.

### **Critical thinking and emotions**

In chapter 6 titled *The Emotions in Thinking and in Education*, Lipman mentions that traditionally emotions were perceived as negative and frequently alleged to be the cause of error and falsehood. Recently, writers have sought to modify this current image of emotion: **emotions may be able to clarify and organize thinking**. Lipman refers to Catherine Z. Elgin's work to point out the following: “Emotions highlight; they make things stand out; they are *salient*. This does not mean that they *necessarily* distort. They simply heighten our awareness, redirect our attention. They provide orientations, patterns of sensibility.” (p. 131)<sup>10</sup>. According to Lipman, we should **oppose the dualistic approach that considers the cognitive and the affective to be separate** as if they were distinct and autonomous functions.

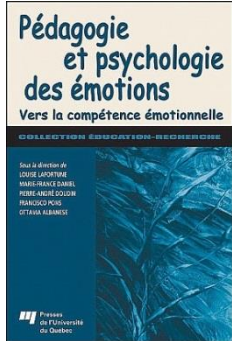
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<sup>8</sup> Re: p. 199 in the original version.

<sup>9</sup> Re: p. 202 in the original version.

<sup>10</sup> Re: p. 129 in the original version.

## Links between critical thinking and emotions



**LAFORTUNE, Louise, et Andrée ROBERTSON. “Une réflexion portant sur les liens entre émotions et pensée critique”** in LAFORTUNE, L., M.-F. DANIEL, P.-A. DOUDIN, F. PONS et O. ALBANESE (sous la dir. de). *Pédagogie et psychologie des émotions. Vers la compétence émotionnelle*. Sainte-Foy (Québec) : Presses de l'Université du Québec. 2005: 61-86 (available at the CDC, [online](#) with your access code or in paper format, class number [786412](#)).<sup>11</sup>

The authors reflect on the relationship between emotion and the expression of critical thinking. They clearly state their point of view as follows: “We postulate that emotions and critical thinking can influence each other and that intervening on one or the other can favor development of critical thinking or comprehension of emotions.” (p. 63)<sup>12</sup>

In the first part of the text titled *The role of emotions in the expression of critical thinking*, the authors state that critical thinking is no longer just a cold and insensitive process but now includes emotions and passions. **Emotions enable individuals to evaluate the relative importance of new information and with the purpose of adapting themselves, according to context and to their needs.**

In the second part titled *The role of critical thinking in the expression of emotions*, Lafortune and Robertson draw from the work of Guilbert (1999) to establish certain ideas such as: thought and emotion are closely related; critical thinking brings a certain form of objectivity and; **critical thinking could guide and shed light on our own emotions.**

The third and final part titled *Actions which favor intervention* is the longest one and spans fifteen pages divided into three sections. In the first section, **intervening on emotions in order to favor the development of critical thinking** can be achieved by: encouraging the expression of emotions, facilitating comprehension of emotions and taking a philosophical look at emotions. The second section is devoted to **emotions and meta-cognition when developing critical thinking**. The last section looks at **developing critical thinking to help control emotions**. The authors refer mainly to Gratton (2001) when reflecting on how to use thinking skills to favor “emotional well-being”. “Gratton’s remarks lead us to believe that the development of skills related to critical thinking may encourage individuals to take a reflective look at their ways of thinking and acting and thus adjust their perception of themselves.” (p. 78)<sup>13</sup>

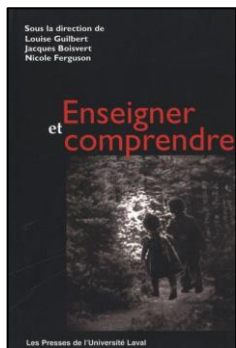
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<sup>11</sup> Translated in 2006 : Lafortune, L. and A. Robertson.” A reflection on the relationship between emotions and critical thinking” in F. Pons, M-F. Daniel, L. Lafortune, P-A. Doudin and O. Albanese (eds). *Towards Emotional Competences*, Aalborg: Aalborg University Press. 2006: 131-153.

<sup>12</sup> Re: p. 131 in the English version.

<sup>13</sup> Re: p. 144 in the English version.



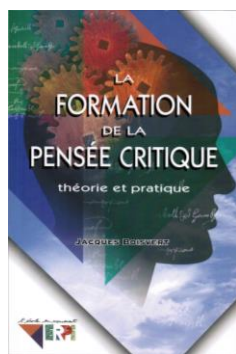


**GUILBERT, Louise.** “La relation cognitivo-affective de la pensée critique : vers un modèle d'évaluation?” in GUILBERT, L., J. BOISVERT et N. FERGUSON, éd. *Enseigner et comprendre. Le développement d'une pensée critique*. Sainte-Foy (Québec) : Les Presses de l'Université Laval. 1999 : p. 80-98 (available at the CDC, class number [726579](#)).

Guilbert proposes a **reflection on the relationship between emotions and thinking, their mutual influence and how to control emotions**. According to the author, emotion does not oppose reason but contributes positively to cognition. Guilbert offers a **model based on the “management” of emotions**. Her reflection is guided by a concept called *ego involvement*. Guilbert doesn't believe in totally controlling emotions but rather in managing certain components such as triggers and thinking processes. There are interesting avenues for managing emotions such as being aware of our emotional involvement and possible negative impact, as well as using intellect to better understand the situation.

To describe her understanding of emotional involvement in relation to critical thinking, the author presents a seven-step model. In order to assess critical thinking, there are seven possible situations which “contribute to awareness and a better control of cognitive processes despite heavy emotional burden.” (p. 93). This model which many authors agree with shows that when we become aware of our emotions, it helps to manage our reactions and the surrounding context. For Guilbert, **learning is cognitive as well as affective**. In the long term, the construction of this model aims to reintegrate every aspect of thinking: reason + emotions, analysis + creativity, logic + intuition.

### Three models for critical thinking: Ennis, Paul and Lipman



**BOISVERT, Jacques.** *La formation de la pensée critique : théorie et pratique*. Saint-Laurent (Québec) : Éditions du Renouveau Pédagogique Inc. 1999 (available at the CDC, class number [723069](#)).

In the first chapter, Boisvert looks at five models of critical thinking. Here is a presentation of the three more elaborated models from Robert H. Ennis, Richard W. Paul and Matthew Lipman.

#### Robert H. Ennis' model

##### *Proposed definition*

Ennis (1985) defines critical thinking as “reasonable and reflective thinking focused on deciding what to believe or do.” Norris and Ennis (1989) **explain this definition as follows**: reasonable thinking is a thought based on acceptable reasons to reach logical conclusions in statements or

actions. This “reflective thinking” is manifested consciousness in the search and the use of valid reasons. ‘Focused’ suggests an activity consciously directed toward a goal, that is to say, an activity which does not happen by accident or without a reason. Finally, ‘on deciding what to believe or do’ emphasizes that critical thinking can evaluate statements (what we believe) and actions (what we do).

Norris and Ennis (1989) put forward **a few arguments to support this definition**. Educators agree to apply critical thinking to both statement and action and to include skills and attitudes. To paraphrase: **critical thinking applies both to ideas and behaviours and requires as much attitudes as skills to manifest itself**. Both authors believe that this definition describes the ideal educated individual who is self-sufficient when making important decisions, is respectful of others and understands real-life situations. Furthermore, the definition is not limited to appraisal and does not endorse a negative notion.

**This elaborate list of abilities (12) and dispositions (14) of the ideal thinker** (Norris and Ennis, 1989) is useful when developing programs and evaluations. The authors point out that this list provides general desirable dispositions but is in no way an indication of what-how-when to teach.

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### **Critical Thinking Abilities and dispositions according to Norris and Ennis (1989)**

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#### **Abilities of the ideal critical thinker:<sup>14</sup>**

1. Focusing on a question
2. Analyzing arguments
3. Asking and answering questions that clarify and challenge
4. Judging the credibility of a source
5. Making and judging observations
6. Making and judging deductions
7. Making and judging inductions
8. Making and judging value judgments
9. Defining terms and judging definitions
10. Identifying assumptions
11. Deciding on an action
12. Interacting with others

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<sup>14</sup> P. NORRIS, Stephen et H. ENNIS, Robert. *Evaluating Critical Thinking*, Pacific Grove, CA: Midwest Publications Critical Thinking Press, 1989, p. 14.

### Dispositions of the ideal critical thinker:<sup>15</sup>

1. Seek a statement of the thesis or question
  2. Seek reasons
  3. Try to be well informed
  4. Use credible sources and mention them
  5. Take into account the total situation
  6. Keep their thinking relevant to the main point
  7. Keep in mind the original or most basic concern
  8. Look for alternatives
  9. Are open-minded
  10. Take a position and change a position when the evidence and reasons are sufficient to do so
  11. Seek as much precision as the subject permits
  12. Deal in an orderly manner with the parts of a complex whole
  13. Employ their critical thinking abilities
  14. Are sensitive to the feelings, level of knowledge, and degree of sophistication of others
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#### Richard W. Paul's model

##### *Proposed definition*

Paul (1992) states the following: "critical thinking is disciplined, self directed thinking which exemplifies the perfections of thinking appropriate to a particular mode or domain of thought." Perfection of thought is achieved through **universal intellectual standards for thought** such as clarity, precision, relevance, logic, depth and adequacy for purpose. These standards can be used across domains and disciplines under inquiry, for example to contextualize fundamental concepts, basic theories and schools of thought for a specific disciplinary domain.

Paul, Binker, Martin and Adamson (1989) established a list of strategies, including **35 dimensions of critical thinking divided into three categories: affective strategies (S-1 to S-9); cognitive strategies** which include **macro-abilities (S-10 to S-26) and micro-skills (S-27 to S-35)**.

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<sup>15</sup> P. NORRIS, Stephen et H. ENNIS, Robert. *Evaluating Critical Thinking*, Pacific Grove, CA: Midwest Publications Critical Thinking Press, 1989, p. 12.

**List of 35 critical thinking strategies  
(Paul, Binker, Martin and Adamson, 1989)**

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**Affective Strategies**

- S-1 thinking independently
- S-2 developing insight into egocentricity or sociocentricity
- S-3 exercising fairmindedness
- S-4 exploring thoughts underlying feelings and feelings underlying thoughts
- S-5 developing intellectual humility and suspending judgment
- S-6 developing intellectual courage
- S-7 developing intellectual good faith or integrity
- S-8 developing intellectual perseverance
- S-9 developing confidence in reason

**Cognitive Strategies - Macro-Abilities**

- S-10 refining generalizations and avoiding oversimplifications
- S-11 comparing analogous situations: transferring insights to new contexts
- S-12 developing one's perspective: creating or exploring beliefs, arguments, or theories
- S-13 clarifying issues, conclusions, or beliefs
- S-14 clarifying and analyzing the meanings of words or phrases
- S-15 developing criteria for evaluation: clarifying values and standards
- S-16 evaluating the credibility of sources of information
- S-17 questioning deeply: raising and pursuing root or significant questions
- S-18 analyzing or evaluating arguments, interpretations, beliefs, or theories
- S-19 generating or assessing solutions
- S-20 analyzing or evaluating actions or policies
- S-21 reading critically: clarifying or critiquing texts
- S-22 listening critically: the art of silent dialogue
- S-23 making interdisciplinary connections
- S-24 practicing Socratic discussion: clarifying and questioning beliefs, theories, or perspectives
- S-25 reasoning dialogically: comparing perspectives, interpretations, or theories
- S-26 reasoning dialectically: evaluating perspectives, interpretations, or theories

## Cognitive Strategies - Micro-Skills

- S-27 comparing and contrasting ideals with actual practice
  - S-28 thinking precisely about thinking: using critical vocabulary
  - S-29 noting significant similarities and differences
  - S-30 examining or evaluating assumptions
  - S-31 distinguishing relevant from irrelevant facts
  - S-32 making plausible inferences, predictions, or interpretations
  - S-33 giving reasons and evaluating evidence and alleged facts
  - S-34 recognizing contradictions
  - S-35 exploring implications and consequences
- 

### Affective strategies

Affective strategies refer to **traits of mind, predispositions to critical thinking** and what motivates an individual to think critically. For example, to exercise intellectual humility entails having a consciousness of the limits of one's knowledge, being sensitive to bias and prejudice of one's viewpoint. To exercise intellectual perseverance refers to the need to use intellectual insights and truths in spite of difficulties, obstacles and frustrations to achieve deeper understanding or insight. In fact, Paul (1992) believes **there are seven interdependent intellectual traits of mind that need to be cultivated to become a true critical thinker**: intellectual humility, intellectual courage, intellectual empathy, intellectual integrity, intellectual perseverance, faith in reason and an intellectual sense of justice. According to Paul, these traits are applicable in all domains or modes of knowledge and it is **better to develop them all at the same time**. To become aware of the limits of our knowledge, we need the courage to admit our own ignorance and prejudices. To discover our own prejudices requires being able to reason within points of view different from our own. And to do so, we must have intellectual perseverance and it cannot be without our faith in reason.

### Cognitive strategies

When it comes to cognitive strategies, the authors distinguish macro-abilities from micro-skills. **Micro-skills are the most elementary skills of critical thinking** such as noting significant similarities and differences, examining or evaluating assumptions, distinguishing relevant from irrelevant facts. **Macro-abilities are cognitive processes that orchestrate micro-skills** such as evaluating the credibility of sources of information; analyzing or evaluating arguments, interpretations, beliefs or theories; making interdisciplinary connections. For example, learning to play the piano illustrates the **interrelationship of both levels of cognitive strategies**. Learning to play scales on the piano and to read notes (micro-skills) are elementary skills which come into play when creating a piece of music (macro-ability). For example, making inferences and recognizing contradictions are micro-skills which can be integrated in a more complex process

such as evaluating the credibility of sources of information or generating solutions (macro-abilities). **We can say that both levels of cognitive strategies are interdependent and that affective strategies support the implementation of cognitive strategies.**

### Matthew Lipman's model

#### *Proposed definition*

Lipman (1991) defines critical thinking as “thinking that (1) facilitates judgment because it (2) relies on criteria, (3) is self corrective and (4) is sensitive to context”. You will find below a short introduction to each element of the definition.

#### **1. Judgments result from critical thinking**

We can summarize Lipman's thinking as follows: all judgments have a kernel of reasoning and all reasoning has judgement as their natural fruition. This shortcut conveys the idea that **if school must cultivate judgment, then it must strengthen reasoning.**

#### **2. Critical thinking relies on criteria**

Criteria are rules utilized in making objective judgments and to establish thinking on strong foundations. Critical thinking is cognitive accountability i.e. feeling an obligation to supply reasons for stated opinions. According to Lipman, if schools want to develop critical thinking in students, then they **must teach them to recognize and criticize criteria.**

#### **3. Critical thinking is self corrective**

The other characteristic of critical thinking is the ability to self-correct one's own thinking by discovering weaknesses and rectifying them. It is therefore important to **reflect on our thinking and correct our methods and procedures.**

#### **4. Critical thinking is sensitive to context**

Critical thinking takes into account **special circumstances** when applying rules upon real-life cases or when transitioning from theory to practice. Thinking that is sensitive to context involves recognition of many aspects: exceptional or irregular circumstances, special limitations and overall configurations such as a remark in the light of discourse.

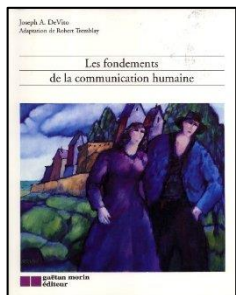
#### *A community of inquiry*

Lipman believes that a “community of inquiry” approach is the best way to strengthen reasoning and judgment in school for any kind of inquiry, whether scientific or non-scientific. Students listen to one another, build on each other's ideas, challenge one another to supply reasons for otherwise unsupported opinions, assist each other in drawing inferences from what has been said, and seek to identify one another's assumptions. For Lipman, **a community of inquiry is characterized by dialogue, guided by logic and reasoning.**



- See also **LIPMAN, Matthew**. *À l'école de la pensée. Enseigner une pensée holistique*. Bruxelles: De Boeck. 2<sup>e</sup> édition 2011. (Available at the CDC, class number [788087](#)).

## Links between critical thinking and communication



**DEVITO, Joseph A., et Robert TREMBLAY**. *Les fondements de la communication humaine*. Boucherville (Québec) : gaëtan morin éditeur. 1993<sup>16</sup>

\*This book might be available at your college's library.

This textbook written by Joseph A. DeVito and adapted by Robert Tremblay shows how to develop communication skills through cultural awareness. It is also a **well organized program to develop critical thinking which involves specific skills and attitudes**. According to the authors, critical thinking is defined as follows: "Critical thinking involves the ability to raise powerful questions about what's being read, viewed or listened." (Adams and Hamm, 1990).

**What links can we establish between critical thinking and communication?** Here is a list of what the authors propose:

### Communication attitudes in relation to critical thinking

1. The will to analyze one's self as a critical thinker and communicator.
2. The tendency to observe one's behaviour and the behaviour of others.
3. The disposition to draw conclusions only after gathering sufficient information.
4. The desire to establish links between a subject matter and everyday communication.
5. The determination to be well informed regarding communication.
6. The desire to analyze and assess ideas instead of simply accepting them because they appear in a textbook or because a professor expressed them.
7. The disposition to modify one's way of communicating and even one's way of thinking.

### Communication skills in relation to critical thinking

1. To reflect on communication critically.
2. To evaluate one's perceptions critically.
3. To listen critically.
4. To decode and encode verbal messages critically.
5. To decode and encode non-verbal messages critically.
6. To evaluate and use interpersonal communication strategies critically.
7. To analyze any interpersonal conflict critically.
8. To analyze all problems critically.
9. To evaluate information critically.
10. To evaluate any attempt at persuasion critically.

<sup>16</sup> Original version : Joseph A. DeVito (1993), *Essentials of Human Communication*, HarperCollins College Publishers.

## **About the author**

Jacques Boisvert started teaching psychology in 1974 at Cégep Saint-Jean-sur-Richelieu. He holds a master's degree in psychology from Université de Montréal and a doctorate in education from Université du Québec à Montréal. His research conducted at the college level during the 1990's and the 2000's includes three studies on the development of critical thinking, as well as a study on social models for college success among male students enrolled in Social science and a comparative study of male and female students enrolled in Social science and their motivation at school. Half of his forty publications and close to thirty of his papers are devoted to the development of critical thinking. In 2008, he received the Teaching Excellence Award from the Association of Canadian Community Colleges. In 2008, Jacques Boisvert retired and he now provides consultation services within his field of expertise such as updating and creating psychology courses for Cégep à distance.