

What is Critical Thinking?

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From Kansas to Kazakhstan, from Michigan to Macedonia, school teachers and university professors are seeking to encourage critical thinking among their students. We know that critical thinking is a good thing, a skill that will enable us to better cope with the demands of the 21st century, and give us an important perspective on much of what we learn about and do.

But what *is* critical thinking? I hear the question from teachers just beginning to experiment with new pedagogical approaches, as well as from students and teachers who have been working in critical thinking classrooms for a long time. The term is difficult to define, because it includes so many skills, activities and values. What are we talking about when we talk about critical thinking?

The literature about critical thinking offers many definitions of the term, not all of them in harmony. Because we seek a description that speaks to teachers from elementary school to university, within varying cultural settings, a very flexible definition may be necessary. Despite the diversity of educational contexts that readers of this journal find themselves in, I believe we can develop a definition of critical thinking that will move our conversation forward.

Before we try to define the term, let's consider some kinds of thinking that are not critical thinking. Probably we can agree that mere memorizing is not critical thinking. Memorization is an important mental ability, one that all learners need; but it is quite a different skill from critical thinking.

When we realize that machines such as computers also have memories – better memories than almost all people have – we know that memorization by itself is not adequate thinking. Yet for many traditional teachers, memory is the most highly valued kind of thinking in school, and many tests and examinations probe only for the extent of a student's memory. Those of us interested in critical thinking are searching for something more complex.

Another type of thinking that is different from critical thinking is the mental task of comprehending ideas. Again, this is an important school skill. In a science or maths classroom, or in a history or literature classroom, there are times when students need to work hard to comprehend what the teacher or the text is saying. Comprehension, especially of difficult material, is a complex mental operation.

For example, when a student works to comprehend a Shakespeare sonnet, or struggles to wrap her mind around the Extreme Value Theorem in calculus, the student is engaged in a complex intellectual task, but in the first efforts to comprehend the material, the student is not yet a critical thinker.

Some teachers would argue that genuine comprehension always requires critical thought, because the learner must translate someone else's ideas into his or her own language and mental construct. Yet, when we work to comprehend someone else's thinking, the first phase of our thought is passive: we are receiving what someone else has already thought. Rather than creating something new and individual, we are accepting what someone else has already created.

It is not until the newly understood ideas are tested, evaluated, expanded, and applied that the student engages in critical thinking. I believe that both memorization

of facts and comprehension of concepts are necessary preliminary activities for critical thinking. But by themselves they do not constitute critical thinking.

A third kind of thinking that is different from critical thinking is creative or intuitive thinking. Athletes, artists and musicians all use their minds in complex ways; but when they perform at a high level, their thinking is rarely self-conscious. They are not conscious of their own thought processes.

Consider a professional athlete, such as the great Czech hockey star, Jaromir Jagr (who wears the number 68 on his uniform, to commemorate the events of the Prague Spring of 1968). When he is about to make a shot at the goal, does he consider: "Is now the right moment? What other ways of considering the situation might I find? How would other great players consider this moment? Would Wayne Gretsky shoot now, or would he wait? Would he pass the puck to another player, or would he take the shot himself?"

If Jagr's thought processes were this deliberate and self-conscious, he would never score a goal. Although his decision to wear the number 68 on his jersey is an example of critical thinking, his decision about when to fire the puck is not. Likewise, artists and musicians use complex mental operations that are not wholly conscious or deliberate. Their intuitive thinking is valuable, certainly, but it is not critical.

So how can we define critical thinking? I offer a five-point definition of the term.

First: critical thinking is independent thinking.

In a critical thinking classroom, each person forms his or her own ideas, values and beliefs. No one can think critically for you. Critical thinking is work that you can do only for yourself. Therefore, individual ownership of thinking in the classroom is a precondition for critical thinking. Students must feel the freedom to think for themselves, to decide complex questions for themselves.

Let me offer an example to illustrate this point. Some years ago I taught American Literature in a university in Slovakia. My students there held a great deal of information in their heads about many American writers. They especially knew a great deal about Walt Whitman. They knew when he was born and when he died. They knew the titles of all his important works. They knew his position in literary history - who influenced him and whose work was in turn influenced by his. They knew the major themes of his poetry. They could recite the opening lines of his famous "Song of Myself".

But they had never actually read the poetry. All of their knowledge was drawn from the lectures of an earlier professor - someone who had read the poems and told his students what to think. When I put the actual poems of Walt Whitman before my students, they needed to learn new skills to be able to read the works for themselves and to form their own opinions about his work.

Critical thinking is not necessarily original thinking, since it is possible for a person to adopt an idea or belief from another person and still feel it wholly to be their own. We find pleasure and power in the sentence "I agree with you", and of course the critical thinker will sometimes find himself in agreement with others.

After my students in the Slovak university had themselves read Whitman's work and reflected on it and discussed it with others, they sometimes agreed with critics whose published work they read, or with their classmates, or even with their former professor. But it was crucial that each thinker should decide for himself or

herself, that each should think independently. Independent thinking is the first, and perhaps the most important, quality of critical thinking.

Second: information is the starting point for critical thinking, not the end point.

Students need to know a great deal before they are motivated and able to think for themselves. We sometimes say "You can't think with an empty head." In order to develop complex thoughts, we need a good deal of "raw material" - facts, ideas, texts, theories, data, concepts.

Sometimes my students in the American university seem to have the opposite problem to students in Slovakia - they seem not to remember enough of their previous learning, and each new writer, each new poem seems something wholly new. I need to work with them to develop mental road maps and frameworks of knowledge and depths of factual information so that they can apply their critical skills in productive ways. I do not argue that critical thinking is a substitute for traditional learning of facts, but neither do I want to say that simply learning the facts is adequate.

Our work involves more kinds of work than teaching critical thinking: we also teach students to comprehend and retain information of many kinds. Teaching critical thinking is one responsibility, among several others, of the teacher.

Students of every age, from the first grade to the university, can think critically, because all of them already have rich life experiences and deep resources of prior knowledge. As they learn more, they are able to become more sophisticated thinkers, but even very young children are capable of independent, critical thinking (as those of us who have children know very personally). Critical thinking is the work that students and teachers and writers and scientists actually do with the facts that they have learned. Critical thinking takes traditional learning and makes it personal, meaningful, useful and permanent.

Third: critical thinking begins with questions, with problems to be solved.

Human beings have a basic curiosity towards the world. We see something new, and we want to know about it. We see an interesting place, and we are curious to go there. The philosopher and chemist Michael Polanyi notes that "As far down the scale of life as worms and even perhaps amoebas, we meet a general alertness of animals, not directed towards specific satisfaction, but merely exploring what is there: an urge to achieve intellectual control over the situations confronting them" (quoted in Meyers, p. 41). Curiosity, then, is a basic characteristic of life. We are more accustomed to seeing it in young elementary school children than in students in the secondary school or university, and that is a sad indication of the result of most schooling on young minds.

Yet authentic learning at every level is marked by the urge to solve problems and to answer questions that arise from the learners' own interests and needs. John Bean says "part of the difficulty of teaching critical thinking, therefore, is awakening students to the existence of problems all around them" (p. 2).

The Brazilian educator Paulo Freire argues that we need to replace traditional education, or "banking" education, in which teachers make "deposits" in the minds of students, with "problem posing" education, in which students grapple with significant problems from the world around them. Students learn best, he argues, when they identify genuine problems in their own experience - problems of

economics, social structure, and political power – and use the resources of the classroom and the school to investigate solutions. Because of his insistence on the analysis of oppressive power and his conviction that education can liberate students from this oppression, Freire’s work is called “liberatory pedagogy”.

The American philosopher of education John Dewey suggests that critical thinking begins with students’ engagement with a problem. “The most significant question which can be asked about any situation or experience proposed to induce learning is what quality of problem it involves” (p. 182). According to Dewey, problems stimulate our students’ natural curiosity and encourage critical thinking. “Only by wrestling with the conditions of the problem at hand, seeking and finding his own way out, does [the student] think” (p. 188).

The work of the teacher, then, in preparing for class is to identify the problems of students, and as they become increasingly oriented to this new way of beginning to investigate ideas, to help students formulate their own problems. Critical thinking pedagogy becomes a purposeful and productive activity, not simply “school work”, as students engage in the practical intellectual work of formulating solutions to the problems they face in the world. As students gather data, analyze texts, consider alternative points of view, and brainstorm possibilities, they are seeking solutions to the problems that concern them.

The Canadian professor Ralph H. Johnson defines critical thinking as “a particular kind of activity of mind which enables its possessor to arrive at sound judgment about something proposed to him for action or belief” (p. 1). Johnson’s definition stresses the role of critical thinking in deciding questions, in solving problems.

Fourth: critical thinking seeks reasoned arguments.

Critical thinkers develop their own solutions to problems, and they support those solutions with good arguments and convincing reasons. They recognize that more than one possible solution exists, and therefore they work to demonstrate why their preferred solution is logical and practical.

An argument consists of four basic elements. First, the argument makes a *claim*. This claim (also called a thesis, or main idea, or central position) is the heart of the argument, the one most important idea of the thinker. The claim is supported by a series of *reasons*. Each of the reasons, in turn, is supported by *evidence*. The evidence can be statistical data, textual details, personal experience, or other kinds of evidence recognized as legitimate by the audience. Underlying the claim, reasons, and evidence is the fourth element of argument: the *warrant*. The warrant is the underlying belief or assumption that the speaker or writer shares with the audience, the assumption that justifies the entire argument.

For example, a writer might argue that graffiti artists have a right to paint their signs on public buildings (claim), because their signs are statements of their personal belief (a reason) and because sometimes graffiti is aesthetically pleasing (another reason). The writer would then offer evidence, perhaps a statement from the country’s constitution about the right of free speech, or from a political philosopher who states that each human being has a right to express himself or herself, and the writer might include samples of graffiti that have artistic merit. Underlying this argument would be the warrant or assumption that free speech is an especially important human right.

Often, good arguments also acknowledge that other competing arguments exist (counter arguments), and the thinker will concede or refute these opposing views. An argument is always made stronger by acknowledging that other views are possible. For example, our defender of the rights of graffiti artists would strengthen his argument by acknowledging that property owners also have rights that should be protected, and that some compromise might be achieved between the rights of the artist and the rights of the person who owns the building that becomes that artist's "canvas".

By creating such arguments, critical thinkers challenge the authority of texts, traditions, and majorities, and resist manipulation. This emphasis on using reason to make complex decisions about actions or values is at the heart of many definitions of critical thinking. Robert Ennis, for example, defines critical thinking as "reasonably deciding what to do or believe" (quoted in Johnson, p. 1).

Fifth and finally: critical thinking is social thinking.

Ideas are tested and improved as they are shared with others. The philosopher Hannah Arendt says "for excellence, the presence of others is always necessary." As we discuss, read, debate and disagree, and enjoy the give and take of ideas, we engage in a process of deepening and refining our own positions.

Teachers of critical thinking, therefore, employ a number of classroom strategies that encourage thinking in the presence of others, including group work, debates, discussion, and the publication of student writing in a variety of forms. Although the first element of my definition of critical thinking stresses the importance of independence in thinking, this final point emphasizes the social dimensions of critical thinking, because the critical thinker finally works in a community of others, engaged in tasks larger than the construction of the self.

Critical thinking teachers therefore work to nurture the attitudes that facilitate the productive exchange of ideas, attitudes such as tolerance, careful listening to others, and assuming responsibility for one's own positions. In all of these ways, teachers of critical thinking strive to bring learning inside the classroom closer together with life beyond the classroom. Because teachers ultimately work to create an ideal society, they strive to make classroom life a mirror image or reflection of life beyond the classroom, and helping students become critical thinkers is one step in attaining larger social and cultural goals.

According to this definition, critical thinking can be realized in many school activities, but I would argue that writing offers the greatest promise, for teachers and students alike. Writing forces students to be active. Writing makes their thinking visible and accessible. Writing is independent thinking, and it requires the writer to employ his or her existing knowledge. When students write, they construct reasoned arguments for their positions. Good writing seeks to solve problems and provide answers for readers. Writing is an inherently social activity, because the writer is always conscious of the presence of the reader.

Writing is hard work for students, the hardest work they do. Of course, requiring students to write also creates more work for teachers; but because the results of student writing are so important, many teachers consider the additional work to be worthwhile. Teachers can coach students in their work, creating a process of brainstorming, writing, revising, editing, and publishing, and thereby teach them how to do this difficult work effectively.

Students themselves come to value this work when they know that their teacher really cares about what they say, and when they have opportunities to share their work with classmates, parents, and other members of the community. For all of these reasons, I believe that writing is the strongest tool for teaching critical thinking.

The challenge I face in my own teaching is turning this definition of critical thinking into practical, daily classroom habits. As a teacher engaged in the process of transforming my pedagogy from traditional, curriculum-centred education to progressive education, focused on the needs of my students and of my society, I am always searching for ways to organize the work my students and I do in the classroom. My hope is that this work will help to produce citizens of my community who are well informed and better able to contribute their ideas, their energies, and their lives to the betterment of our world.

References

- Arendt, H. (1977). *Thinking*. New York: Harcourt Brace Jovanovich.
- Bean, J. (1996). *Engaging Ideas: The Professor's Guide to Integrating Writing, Critical Thinking, and Active Learning in the Classroom*. San Francisco: Jossey-Bass.
- Dewey, J. (1916). *Education and Democracy*. New York: Macmillan.
- Freire, P. (1972). *Pedagogy of the Oppressed*. New York: Academic Press.
- Johnson, R. H. (1985, September–October). Some observations about teaching critical thinking. *CT News, Critical Thinking Project, California State University, Sacramento*, 4, 1.
- Meyers, C. (1986). *Teaching Students to Think Critically: A Guide for Faculty in All Disciplines*. San Francisco: Jossey-Bass.

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