

Critical thinking

Critical thinking is the analysis of available facts, evidence, observations, and arguments to form a judgment. The subject is complex; several different definitions exist, which generally include the rational, skeptical, and unbiased analysis or evaluation of factual evidence. Critical thinking is self-directed, self-disciplined, self-monitored, and self-corrective thinking. It presupposes assent to rigorous standards of excellence and mindful command of their use. It entails effective communication and problem-solving abilities as well as a commitment to overcome native egocentrism and sociocentrism. Critical thinking is the ability to think clearly and rationally about what to do or what to believe. It includes the ability to engage in reflective and independent thinking.

Critical Thinking is the process of using and assessing reasons to evaluate statements, assumptions, and arguments in ordinary situations. The goal of this process is to help us have good beliefs, where good means that our beliefs meet certain goals of thought, such as truth, usefulness, or rationality. Critical thinking is widely regarded as a species of informal logic, although critical thinking makes use of some formal methods. In contrast with formal reasoning processes that are largely restricted to deductive methods decision theory, logic, statistics—the process of critical thinking allows a wide range of reasoning methods, including formal and informal logic, linguistic analysis, experimental methods of the sciences, historical and textual methods, and philosophical methods, such as Socratic questioning and reasoning by counterexample.

The goals of critical thinking are also more diverse than those of formal reasoning systems. While formal methods focus on deductive validity and truth, critical thinkers may evaluate a statement's truth, its usefulness, its religious value, its aesthetic value, or its rhetorical value. Because critical thinking arose primarily from the Anglo-American philosophical tradition (also known as analytic philosophy), contemporary critical thinking is largely concerned with a statement's truth. But some thinkers, such as Aristotle (in *Rhetoric*) give substantial attention to rhetorical value.

The primary subject matter of critical thinking is the proper use and goals of a range of reasoning methods, how they are applied in a

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variety of social contexts, and errors in reasoning. This article also discusses the scope and virtues of critical thinking. Someone with critical thinking skills is able to do the following:

- understand the logical connections between ideas
- identify, construct and evaluate arguments
- detect inconsistencies and common mistakes in reasoning
- solve problems systematically
- identify the relevance and importance of ideas
- reflect on the justification of one's own beliefs and values

Critical thinking is not a matter of accumulating information. A person with a good memory and who knows a lot of facts is not necessarily good at critical thinking. A critical thinker is able to deduce consequences from what he knows, and he knows how to make use of information to solve problems, and to seek relevant sources of information to inform himself.

Critical thinking should not be confused with being argumentative or being critical of other people. Although critical thinking skills can be used in exposing fallacies and bad reasoning, critical thinking can also play an important role in cooperative reasoning and constructive tasks. Critical thinking can help us acquire knowledge, improve our theories, and strengthen arguments. We can use critical thinking to enhance work processes and improve social institutions.

Some people believe that critical thinking hinders creativity because it requires following the rules of logic and rationality, but creativity might require breaking rules. This is a misconception. Critical thinking is quite compatible with thinking "out-of-the-box", challenging consensus and pursuing less popular approaches. If anything, critical thinking is an essential part of creativity because we need critical thinking to evaluate and improve our creative ideas.

Critical thinking teaches you how to raise and identify fundamental questions and problems in the community. It will teach you to reformulate these problems clearly and precisely. It will teach you how to gather and assess relevant information, develop reasoned conclusions and solutions, testing them against relevant criterion and standards. It teaches

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you how to be open minded to alternative system of thought, recognize and assess your own assumptions, implications and practical consequences, how to communicate effectively with others in figuring out solutions to complex problems.

Critical thinking is what university is all about. University is not only about teaching students with facts. It's about teaching students to think- think critically. This chapter will introduce you the skills and dispositions you need to become an independent, self-directed thinker and learner. But you'll only get out of this course what you put into it. Becoming a critical thinker is hard work. Becoming a master thinker means toning up your mental muscles and acquiring habits of careful, disciplined thinking. This requires effort, and practice. Critical thinking is an adventure. Becoming mentally fit is hard work. But in the end you'll be a smarter, stronger, more confident thinker. Let us consider, more specifically, what you can expect to gain from a course in critical thinking.

When they first enter university, students are sometimes surprised to discover that university education seem less interested in how beliefs are acquired than they are in whether those beliefs can withstand critical scrutiny. The question is not much about what you know, but how you acquire what you know and whether your ideas stands critical examination.

In university, the focus is on higher-order thinking: the active, intelligent evaluation of ideas and information. For this reason critical thinking plays a vital role in universities. In a critical thinking chapter, students learn a variety of skills that can greatly improve their classroom performance. These skills include:

- Understanding the arguments and beliefs of others
- Critically evaluating those arguments and beliefs
- Developing and defending one's own well-supported arguments and beliefs

Let us look briefly at each of these three skills:

To succeed in university, you must, of course, be able to understand the material you are studying. A course in critical thinking cannot make inherently difficult material easy to grasp, but critical thinking does teach a variety of skills that, with practice, can significantly improve your

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ability to understand the arguments and issues discussed in your college textbooks and classes.

In addition, critical thinking can help you critically evaluate what you are learning in class. During your university career, your instructors will often ask you to discuss critically some argument or idea introduced in class. Critical thinking teaches a wide range of strategies and skills that can greatly improve your ability to engage in such critical evaluation.

You will also be asked to develop your own arguments on particular topics or issues. In moral and civic education class, for example, you might be asked to write a paper addressing the issue of whether ethnic federalism is good or bad. To write such a paper successfully, you must do more than simply find and assess relevant arguments and information. You must also be able to marshal arguments and evidence in a way that convincingly supports your view. The systematic training provided in a course in critical thinking can greatly improve that skill as well.

Critical thinking is a transferable thinking skill. These skills will be taught in ways that expressly aim to facilitate their transfer to other subjects and contexts. If you learn how to structure argument, judge the credibility of sources or make a reasonable decision by the methods of critical thinking for instance, it will not be difficult to see how to do these things in many other contexts such as in class rooms and personal life; this is the sense in which the skills we teach in this text are transferable.

Critical thinking is valuable in many contexts outside the classroom. Let us look briefly at three ways in which this is the case. First, critical thinking can help us avoid making foolish personal decisions. All of us have at one time or another made decisions about what profession to choose, what relationships to enter into, what personal behavior to develop, and the like that we later realized were seriously misguided or irrational. Critical thinking can help us avoid such mistakes by teaching us to think about important life decisions more carefully, clearly, and logically.

Second, critical thinking plays a vital role in promoting democratic processes. In democracy, it is the people who have the ultimate say over who governs and for what purposes. Citizens should vote, should

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evaluate different public policies, and collectively determine their fate and et cetera. It is vital, therefore, that citizens' decisions be as informed and as rational as possible. Many of today's most serious societal problems – environmental destruction, poverty, ethnic conflicts, decaying the morality of societies, high level of corruption, violating basic human rights, displacement, to mention just a few – have largely been caused by poor critical thinking.

Third, critical thinking is worth studying for its own sake, simply for the personal enrichment it can bring to our lives. One of the most basic truths of the human condition is that most people, most of the time, believe what they are told. Throughout most of recorded history, people accepted without question that the earth was the centre of the universe, that demons cause disease that slavery was just, and that women are inferior to men. Critical thinking, honestly and courageously pursued can help free us from the unexamined assumptions and biases of our upbringing and our society. It lets us step back from the prevailing customs and ideologies of our culture and ask, "This is what I've been taught, but is it true? In short, critical thinking allows us to lead self-directed, "examined" lives. Such personal liberation is, as the word itself implies, the ultimate goal of education. Whatever other benefits it brings, education can have no greater reward.

n the term critical thinking, the word critic and implies a critique; it identifies the intellectual capacity and the means "of judging", "of judgement", "for judging", and of being "able to discern". The intellectual roots of critical thinking are as ancient as its etymology, traceable, ultimately, to the teaching practice and vision of Socrates 2,500 years ago who discovered by a method of probing questioning that people could not rationally justify their confident claims to knowledge.

The importance of critical thinking

Critical thinking is a domain-general thinking skill. The ability to think clearly and rationally is important whatever we choose to do. If you work in education, research, finance, management or the legal profession, then critical thinking is obviously important. But critical thinking skills are not restricted to a particular subject area. Being able to think well and solve problems systematically is an asset for any career.

Improving Our Thinking Skills

Theory

If we want to think correctly, we need to follow the correct rules of reasoning. Knowledge of theory includes knowledge of these rules. These are the basic principles of critical thinking, such as the laws of logic, and the methods of scientific reasoning, etc.

Also, it would be useful to know something about what not to do if we want to reason correctly. This means we should have some basic knowledge of the mistakes that people make. First, this requires some knowledge of typical fallacies. Second, psychologists have discovered persistent biases and limitations in human reasoning. An awareness of these empirical findings will alert us to potential problems.

Practice

However, merely knowing the principles that distinguish good and bad reasoning is not enough. We might study in the classroom about how to swim, and learn about the basic theory, such as the fact that one should not breathe underwater. But unless we can apply such theoretical knowledge through constant practice, we might not actually be able to swim.

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Similarly, to be good at critical thinking skills it is necessary to internalize the theoretical principles so that we can actually apply them in daily life. There are at least two ways to do this. One is to perform lots of quality exercises. These exercises don't just include practicing in the classroom or receiving tutorials; they also include engaging in discussions and debates with other people in our daily lives, where the principles of critical thinking can be applied. The second method is to think more deeply about the principles that we have acquired. In the human mind, memory and understanding are acquired through making connections between ideas.

Attitudes

Good critical thinking skills require more than just knowledge and practice. Persistent practice can bring about improvements only if one has the right kind of motivation and attitude. The following attitudes are not uncommon, but they are obstacles to critical thinking:

- I prefer being given the correct answers rather than figuring them out myself.
- I don't like to think a lot about my decisions as I rely only on gut feelings.
- I don't usually review the mistakes I have made.
- I don't like to be criticized.

To improve our thinking we have to recognize the importance of reflecting on the reasons for belief and action. We should also be willing to engage in debate, break old habits, and deal with linguistic complexities and abstract concepts.

The California Critical Thinking Disposition Inventory is a psychological test that is used to measure whether people are disposed to think critically. It measures the seven different thinking habits listed below, and it is useful to ask ourselves to what extent they describe the way we think:

- Truth-Seeking—Do you try to understand how things really are? Are you interested in finding out the truth?
- Open-Mindedness—How receptive are you to new ideas, even when you do not intuitively agree with them? Do you give new concepts a fair hearing?

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- Analyticity—Do you try to understand the reasons behind things? Do you act impulsively or do you evaluate the pros and cons of your decisions?

- Systematicity—Are you systematic in your thinking? Do you break down a complex problem into parts?

- Confidence in Reasoning—Do you always defer to other people? How confident are you in your own judgment? Do you have reasons for your confidence? Do you have a way to evaluate your own thinking?

- Inquisitiveness—Are you curious about unfamiliar topics and resolving complicated problems? Will you chase down an answer until you find it?

- Maturity of Judgment—Do you jump to conclusions? Do you try to see things from different perspectives? Do you take other people's experiences into account?

Finally, psychologists have discovered over the years that human reasoning can be easily affected by a variety of cognitive biases. For example, people tend to be over-confident of their abilities and focus too much on evidence that supports their pre-existing opinions. We should be alert to these biases in our attitudes towards our own thinking.

Critical thinking is very important in the new knowledge economy. The global knowledge economy is driven by information and technology. One has to be able to deal with changes quickly and effectively. The new economy places increasing demands on flexible intellectual skills, and the ability to analyse information and integrate diverse sources of knowledge in solving problems. Good critical thinking promotes such thinking skills, and is very important in the fast-changing workplace.

Critical thinking enhances language and presentation skills. Thinking clearly and systematically can improve the way we express our ideas. In learning how to analyse the logical structure of texts, critical thinking also improves comprehension abilities.

Critical thinking promotes creativity. To come up with a creative solution to a problem involves not just having new ideas. It must also be the case that the new ideas being generated are useful and relevant to

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the task at hand. Critical thinking plays a crucial role in evaluating new ideas, selecting the best ones and modifying them if necessary

Critical thinking is crucial for self-reflection. In order to live a meaningful life and to structure our lives accordingly, we need to justify and reflect on our values and decisions. Critical thinking provides the tools for this process of self-evaluation.

Good critical thinking is the foundation of science and democracy. Science requires the critical use of reason in experimentation and theory confirmation. The proper functioning of a liberal democracy requires citizens who can think critically about social issues to inform their judgments about proper governance and to overcome biases and prejudice.

Critical thinking Is Universal. Critical thinking is a domain-general thinking skill. What does this mean? It means that no matter what path or profession you pursue, these skills will always be relevant and will always be beneficial to your success. They are not specific to any field.

Crucial For The Economy. Our future depends on technology, information, and innovation. Critical thinking is needed for our fast-growing economies, to solve problems as quickly and as effectively as possible.

Critical thinking improves Language & Presentation Skills. In order to best express ourselves, we need to know how to think clearly and systematically — meaning practice critical thinking! Critical thinking also means knowing how to break down texts, and in turn, improve our ability to comprehend.

Critical thinking promotes Creativity. By practicing critical thinking, we are allowing ourselves not only to solve problems but also to come up with new and creative ideas to do so. Critical thinking allows us to analyze these ideas and adjust them accordingly.

Critical thinking is important For Self-Reflection. Without critical thinking, how can we really live a meaningful life? We need this skill to self-reflect and justify our ways of life and opinions. Critical thinking provides us with the tools to evaluate ourselves in the way that we need to.

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Critical thinking is the Basis of Science & Democracy. In order to have a democracy and to prove scientific facts, we need critical thinking in the world. Theories must be backed up with knowledge. In order for a society to effectively function, its citizens need to establish opinions about what's right and wrong (by using critical thinking).

Defining Critical Thinking

Critical thinking is a rich concept that has been developing throughout the past 2,500 years. The term "critical thinking" has its roots in the mid-late 20th century. Below, we offer overlapping definitions which together form a substantive and trans-disciplinary conception of critical thinking.

What is critical thinking? There are many definitions. Ennis (2016) lists 14 philosophically oriented scholarly definitions and three dictionary definitions. Following Rawls (1971), who distinguished his conception of justice from a utilitarian conception but regarded them as rival conceptions of the same concept, Ennis maintains that the 17 definitions are different conceptions of the same concept. Rawls articulated the shared concept of justice as a characteristic set of principles for assigning basic rights and duties and for determining... the proper distribution of the benefits and burdens of social cooperation.

Bailin et al. (1999b) claim that, if one considers what sorts of thinking an educator would take not to be critical thinking and what sorts to be critical thinking, one can conclude that educators typically understand critical thinking to have at least three features.

- It is done for the purpose of making up one's mind about what to believe or do.
- The person engaging in the thinking is trying to fulfill standards of adequacy and accuracy appropriate to the thinking.
- The thinking fulfills the relevant standards to some threshold level.

One could sum up the core concept that involves these three features by saying that critical thinking is careful goal-directed thinking. This core concept seems to apply to all the examples of critical thinking described in the previous section. As for the non-examples, their exclusion depends on construing careful thinking as excluding jumping