

Critical Thinking

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This article draws extensively upon Siegel 2003 and Bailin and Siegel 2003.

Critical thinking enjoys a preeminent position among the many educational aims and ideals advocated by educators and educational theorists today. It has enjoyed this status since the earliest days of philosophical thinking about education, at least in the Western tradition originating in Greece nearly 2500 years ago. Although the expression 'critical thinking' is relatively new, the underlying ideal it names – often expressed in terms of the cultivation of reason or the fostering of rationality – has been regarded as a fundamental educational ideal by most of the historically significant philosophers of that tradition who turned their attention to education. No other proposed aim of education – caring, civic-mindedness, community, creativity, happiness, knowledge, obedience to authority, social solidarity, spiritual fulfillment, the fulfillment of potential, etc. – has enjoyed the virtually unanimous endorsement of historically important philosophers of education that critical thinking, reason, and rationality have (Siegel, 2003).

In contemporary discussions (e.g., Nussbaum, 1997; Siegel, 1988, 1997), critical thinking continues to be defended by many as an important educational aim or ideal. Unlike some historical predecessors, contemporary advocates of the ideal do not understand reason as a special psychological faculty; in defending rationality, they do not align themselves with the historical movement known as continental rationalism, according to which knowledge is based on the perception or intuition afforded by such a faculty. What then, exactly, is that underlying ideal? How is the ideal of critical thinking to be understood?

Critical Thinking: What Is It?

Key aspects of critical thinking, as currently advocated by contemporary theorists, include (1) the claim that the notion is essentially normative in character and (2) the claim that critical thinking involves two distinct components: both (a) skills or abilities of reason assessment and (b) the dispositions to engage in and be guided by such assessments. These are discussed in turn next.

Normativity

Advocates of efforts to foster critical thinking in schools sometimes conceive it narrowly, in terms of imparting

skills which will enable students to function adequately in their jobs, and in so doing to be economically productive. More often, however, proponents of the educational aim of critical thinking have in mind a broader view of critical thinking as more or less equivalent to the ideal of rationality.

So understood, critical thinking is a sort of good thinking. Therefore, the notion of critical thinking is fundamentally a normative one, thus distinguishing this understanding of critical thinking from those, common in psychology, which treat the notion as descriptive, identifying particular psychological processes (Bailin *et al.*, 1999). To characterize a given episode of thinking as critical is to judge that it meets relevant standards or criteria of acceptability, and is thus appropriately thought of as good. Most extant philosophical accounts of critical thinking, in addition to the account by Bailin *et al.*, emphasize such criteria. Robert H. Ennis, for example, defines critical thinking as "reasonable reflective thinking that is focused on deciding what to believe and do" (Ennis, 1987: 10), and offers a detailed list of abilities, skills, and dispositions which thinking (and thinkers) must manifest if it is (they are) to qualify as critical. Matthew Lipman defines critical thinking as thinking that facilitates judgment because it relies on criteria, is self-correcting and is sensitive to context (Lipman, 1991). Richard Paul analyses critical thinking in terms of the ability and disposition to critically evaluate beliefs, their underlying assumptions, and the worldviews in which they are embedded (Paul, 1990). Harvey Siegel characterizes the critical thinker as one who is "appropriately moved by reasons" (Siegel, 1988: 23), and emphasizes the critical thinker's mastery of epistemic criteria which reasons must meet in order to be rightly judged to be good reasons, that is, reasons that justify beliefs, claims, judgments, and actions. Other authors, including John McPeck (1981, 1990), similarly emphasize this normative dimension of the concept. While these authors' accounts of critical thinking differ in many respects, and have their own emphases, they are nevertheless agreed on its essentially normative character (Bailin and Siegel, 2003).

Skills/Abilities and Dispositions

While some early treatments of critical thinking defined it only in terms of particular skills – for example, Ennis' early

definition of it as “the correct assessing of statements” (Ennis, 1962: 83) – almost all more recent philosophical discussion of it (including Ennis’ more recent discussions) regards critical thinking as involving both (1) skills or abilities of reason assessment and (2) a cluster of dispositions, habits of mind, and character traits, sometimes referred to collectively as the critical spirit (Siegel, 1988). According to the advocates of this broader conception of critical thinking, education should have as a fundamental aim the fostering in students of (1) the ability to reason well, that is, to construct and evaluate the various arguments, and the reasons/premises and inferences of which they are composed, which have been or can be offered in support or criticism of candidate beliefs, judgments, and actions; and (2) the disposition or inclination to be guided by reasons so evaluated, that is, actually to believe, judge, and act in accordance with the results of such reasoned evaluations. Students (and people generally) are rational, or reasonable, or critical thinkers, to the extent that they believe, judge, and act on the basis of (competently evaluated) reasons. Thus, being a critical thinker is a matter of degree. To regard critical thinking as a fundamental educational aim or ideal is to hold that the fostering in students of the ability to reason well and the disposition to be guided by reasons is of central educational importance. These two aspects of the ideal deserve further comment.

The reason assessment component

Thinking is critical just to the extent that it manifests and reflects due attention to, concern for, and competence in assessing the probative strength of relevant reasons. In this respect, critical thinking can be understood as the educational cognate (Siegel, 1988: 32) of rationality, since both rational thinking and critical thinking are coextensive with the relevance of reasons (Scheffler, 1965: 107). Beliefs, judgments, and actions are rational just to the extent that the believer/actor has good reasons for so believing, judging, or acting; consequently, being able to think critically involves the ability to ascertain the epistemic or evidential goodness of candidate reasons. Consequently, a central task involved in educating for critical thinking is that of fostering in students the ability to assess the probative strength of reasons.

Any such account of critical thinking needs to be supplemented by an account of the constitution of good reasons which the proponent of the ideal is obliged to provide. How do we determine the degree to which a proposed reason for some belief, judgment, or action is a good or forceful one? What are the guidelines, or principles, in accordance with which the goodness of candidate reasons are to be ascertained? What is the nature of such principles? How are they themselves justified? Related questions arise concerning the criteria by which the goodness of candidate reasons is determined. How are these criteria chosen, and

who chooses them? How are they themselves justified – and indeed, can they be justified, even in principle, in a non-circular or question-begging way? What is the source of their epistemic authority? Are they absolute or relative? Are they really epistemic or rather political, constituting tools of power and oppression? These questions and others like them are epistemological in nature; they call for a general account of the relationship between a putative reason and the belief, judgment, or action for which it is a reason. Such an epistemological account will have to grapple with deep questions concerning the nature of epistemic justification, the relationship between justification and truth (and so the nature of truth), the relativity (or absoluteness) of principles of reason evaluation, and so forth. In this sense, the educational ideals of reason and rationality depend, for their own articulation and justification, on an adequately articulated and defended underlying epistemology. (For further discussion see Bailin, 1992, 1995, 1998; Siegel, 1988, 1989, 1997, 1998.) This also supplies a reason for thinking that epistemology should itself be taught in schools (Siegel, 2008).

The critical spirit

Having the ability to determine the goodness, or probative force, of candidate reasons for belief, judgment, or action may be necessary, but cannot be sufficient, for critical thinking, since a given thinker may have the ability but not (or not systematically or routinely) use it. Accordingly, most theorists of critical thinking argue that, along with the skill or ability to assess the probative force of reasons, critical thinkers must also have relevant dispositions. The primary dispositions are those of valuing good reasoning and its fruits, and of seeking reasons, assessing them, and governing beliefs and actions in accordance with the results of such assessment. In addition, most theorists outline a subset of dispositions or traits which are also necessary for critical thinking, including open-mindedness, fair-mindedness, independent-mindedness, intellectual modesty and humility, an inquiring attitude, and respect for others in group inquiry and deliberation (Bailin *et al.*, 1999; Hare, 1979, 1985). This two-component conception of critical thinking – according to which critical thinking encompasses both a reason-assessment component and a dispositional, critical-spirit component – is endorsed by most theorists.

The second aspect of the ideal – the disposition or inclination actually to be guided by the results of the reasoned evaluation of reasons – has broader philosophical implications. Here, the ideal recommends not simply the fostering of skills or abilities of reason assessment, but also the fostering of a wide range of attitudes, habits of mind, and character traits, thought to be characteristic of the rational or reasonable person (Scheffler, 1989; Siegel, 1988). This extends the ideal beyond the bounds of the

cognitive, for, so understood, the ideal is one of a certain sort of person. In advocating the fostering of particular dispositions, attitudes, and character traits, as well as of particular skills and abilities, the proponent of this educational aim denies the legitimacy, or at least the educational relevance, of any sharp distinction between the cognitive and the affective, or the rational and the emotional. The ideal calls for the fostering of certain skills and abilities, and for the fostering of a certain sort of character. It is thus a general ideal of a certain sort of person, which sort of person it is the task of education to help to create. This aspect of the educational ideal of rationality aligns it with the complementary ideal of autonomy, since a rational person will – at least ideally – also be an autonomous one, capable of judging for himself/herself the justifiedness of candidate beliefs and the legitimacy of candidate values.

Critical Thinking as a Fundamental Educational Ideal

As noted above, the cultivation of reason has been regarded by many philosophers of education in the Western tradition as a fundamental aim, and overriding ideal, of education. Today, the fostering of critical thinking (and so rationality) is often regarded in the same way. To so regard it is to hold that educational activities ought to be designed and conducted in such a way that the construction and evaluation of reasons (in accordance with relevant criteria) are paramount, throughout the curriculum. As Israel Scheffler puts the point:

Critical thought is of the first importance in the conception and organization of educational activities (Scheffler, 1989: 1).

Rationality ... is a matter of *reasons*, and to take it as a fundamental educational ideal is to make as pervasive as possible the free and critical quest for reasons, in all realms of study (Scheffler, 1989: 62, emphasis in original).

The fundamental trait to be encouraged is that of reasonableness. ... In training our students to reason we train them to be critical (1989: 142, 143).

To so take it is to regard the fostering of the abilities and dispositions of critical thinking in students as the prime educational directive, of central importance to the design and implementation of curriculum and educational policy. It is to hold that educational activities should be designed and conducted in such a way that the construction and evaluation of reasons (in accordance with relevant criteria) are paramount, throughout the curriculum. This is not to say that other aims and ideals might not also be of serious importance, but that none outranks the

primary obligation of educational efforts and institutions to foster critical thinking (Siegel, 1988: 136–137).

Justification of the Ideal

Why should the fostering of critical thinking be thought to be so important? There are at least four reasons for thinking so. First, and most importantly, striving to foster critical thinking in students is the only way in which students are treated with respect as persons. The moral requirement to treat students with respect as persons requires that we strive to enable them to think for themselves, competently and well, rather than to deny them the fundamental ability to determine for themselves, to the greatest extent possible, the contours of their own minds and lives. Acknowledging them as persons of equal moral worth requires that we treat students as independent centers of consciousness, with needs and interests not less important than our own, who are at least in principle capable of determining for themselves how best to live and who to be. As educators, treating them with respect involves striving to enable them to judge such matters for themselves. Doing so competently requires judging in accordance with the criteria governing critical thinking. Consequently, treating students with respect requires fostering in them the abilities and dispositions of critical thinking.

A second reason for regarding critical thinking as a fundamental educational ideal involves education's generally recognized task of preparing students for adulthood. Such preparation cannot properly be conceived in terms of preparing students for preconceived roles; rather, it must be understood to involve student self-sufficiency and self-direction. In this, the place of critical thinking is manifest. A third reason for regarding the fostering of critical thinking as a central aim of education is the role it plays in the rational traditions, which have always been at the center of educational activities and efforts – mathematics, science, literature, art, history, etc. All these traditions incorporate and rely upon critical thinking; mastering or becoming initiated into the former both requires, and is basic to the fostering and enhancement of, the latter. A fourth reason involves the place of careful analysis, good thinking, and reasoned deliberation in democratic life. To the extent that we value democracy, we must be committed to the fostering of the abilities and dispositions of critical thinking, for democracy can flourish just to the extent that its citizenry is sufficiently critical (Siegel, 1988, ch. 3).

These four reasons have been spelled out at greater length by several authors (e.g., Bailin, 1998; Robertson, 1995, 1999). They are sufficiently powerful to justify regarding critical thinking as a fundamental educational

ideal. Efforts to foster critical thinking aim at the promotion of independent thinking, personal autonomy, and reasoned judgment in thought and action; these particular aims are themselves in keeping with broader conceptions of knowledge, reasons, and persons: for example, that all knowledge is fallible, that it is possible to objectively evaluate the goodness of reasons, and that personal autonomy is an important value (Bailin, 1998: 204). These aims, and the broader conceptions in terms of which they are grounded, are philosophically contentious; it is no surprise, then, that they – and the educational ideal of critical thinking itself – have been challenged.

Criticisms of the Ideal

There are many extant criticisms and thoughtful critics of the ideal of critical thinking. Critics charge that critical thinking:

1. privileges the values and practices of dominant groups in society and devalues those of groups traditionally lacking in power;
2. privileges rational, linear thought over intuition;
3. is aggressive and confrontational rather than collegial and collaborative;
4. neglects or downplays emotions;
5. deals in abstraction and devalues lived experience and concrete particularity;
6. is individualistic and privileges personal autonomy over community and relationship; and
7. presupposes the possibility of objectivity and thus does not recognize an individual's situatedness (for details, discussion and references, see Bailin, 1995; Bailin and Siegel, 2003).

These criticisms, often made from feminist and/or post-modernist perspectives, must in the end be considered on their own merits. However, it is of considerable comfort to friends of the ideal that there is a general reply available to all attempts to reject the ideal, one that appears to be effective against them all, and which is manifested in the discussions of each of the specific critiques considered above. This reply, if successful, establishes the impossibility of rationally rejecting reason – and so preserves the legitimacy of regarding its cultivation as an educational ideal. This discussion concludes by rehearsing the reply and assessing its effectiveness.

Suppose that one wishes to reject the ideal of reason. One can reject it without thought or argument – indeed, one can reject it without ever recognizing or addressing the question of whether it should be rejected – or one can reject it on the basis of some reasoned challenge to it (e.g., that it fosters patriarchy, aids and abets oppression, depends upon a problematic individualism, rests on an inadequate conception of objectivity, or whatever). In the

former case, one's rejection does not threaten the legitimacy of the ideal, since no challenge is made. It is the latter, philosophical sort of rejection that genuinely challenges the ideal's cogency.

However, if such a challenge is made, it will be forceful, and successful, just to the extent that it is based upon good reasons for rejecting the ideal. The challenger is arguing, in effect, that there is good reason to reject the ideal of reason. Any such argument against reason, if successful, will itself be an instance of its successful application or execution. That is, the reasoned rejection of the ideal is itself an instance of being guided by it. In this sense, the ideal appears to be safe from successful challenge: any successful challenge will have to rely upon it; any challenge which does not cannot succeed. While challenges to the ideal might succeed in refining our understanding of it, none can succeed in overthrowing it. Thus, the ideal cannot be successfully challenged.

Transcendental arguments like this one are notoriously controversial philosophically; I cannot provide a general defense of them here. However, I should note that the argument does not prove too much. It does not suggest that other ideals are not important. Nor does it suggest that people cannot live contrary to it – although that they can (and do) does nothing to challenge the legitimacy of the ideal, or the claim that they ought to be guided by it. The argument obviously will not be persuasive to one who rejects reason, but offers no argument against it. But such an argument-less rejection fails as a critique, since it offers no criticism of the ideal or argument in favor of its rejection.

The proponent of rationality and its cultivation must, to be consistent, regard challenges to it as centrally important, and must regard the obligation to take such challenges seriously as integral to rationality itself. Insofar, deep criticisms of the ideal, and reasoned consideration of both its praiseworthy characteristics and its indefensible ones, are exactly what the ideal itself recommends. Whether the ideal survives extant criticisms will always be, in some sense, an open question; such criticisms may well succeed in altering our understanding of it. Nevertheless, there is a limit beyond which any proposed criticism of rationality cannot go without undermining itself. In so far, the ideal of rationality (at least in some formulation of it) cannot be coherently rejected (Siegel, 1996, 1997, ch. 5, Epilogue; 2003).

This self-justifying feature of rationality might itself be thought to provide some reason for regarding its cultivation as desirable. However, the main purpose served by the fundamental reply just rehearsed is not that of justifying the ideal directly – that task is more directly performed by the four reasons (respect, preparation for adulthood, initiation into the rational traditions, and democratic life) offered in favor of the ideal above. Rather, the main purpose is to make plain just how difficult it is to challenge the

ideal. Once the unchallengability of reason is clear, the desirability of its cultivation – on the basis of those four reasons (and quite possibly others as well) – is manifest.

Bibliography

- Bailin, S. (1992). Culture, democracy and the university. *Interchange* 23(1), 63–69.
- Bailin, S. (1995). Is critical thinking biased? Clarifications and implications. *Educational Theory* 45(2), 191–197.
- Bailin, S. (1998). Education, knowledge and critical thinking. In Carr, D. (ed.) *Education, Knowledge and Truth: Beyond the Postmodern Impasse*, pp 204–220. London: Routledge.
- Bailin, S., Case, R., Coombs, J. R., and Daniels, L. B. (1999). Conceptualizing critical thinking. *Journal of Curriculum Studies* 31, 285–302.
- Bailin, S. and Siegel, H. (2003). Critical thinking. In Blake, N., Smeyers, P., Smith, R., and Standish, P. (eds.) *The Blackwell Guide to the Philosophy of Education*, pp 181–193. Oxford: Blackwell.
- Ennis, R. H. (1982). A concept of critical thinking. *Harvard Educational Review* 32(1), 81–111.
- Ennis, R. H. (1987). A taxonomy of critical thinking dispositions and abilities. In Boykoff-Baron, J. and Sternberg, R. J. (eds.) *Teaching Thinking Skills: Theory and Practice*, pp 9–26. New York: W. H. Freeman.
- Hare, W. (1979). *Open-Mindedness and Education*. Kingston: McGill-Queen's University Press.
- Hare, W. (1985). *In Defense of Open-Mindedness*. Kingston: McGill-Queen's University Press.
- Lipman, M. (1991). *Thinking in Education*. Cambridge: Cambridge University Press.
- McPeck, J. E. (1981). *Critical Thinking and Education*. New York: St. Martin's Press.
- McPeck, J. E. (1990). *Teaching Critical Thinking*. New York: Routledge.
- Nussbaum, M. (1997). *Cultivating Humanity: A Classical Defense of Reform in Liberal Education*. Cambridge, MA: Harvard University Press.
- Paul, R. (1990). *Critical Thinking: What Every Person Needs to Survive in a Rapidly Changing World*, Binker, A. J. A. (ed.). Rohnert Park, CA: Center for Critical Thinking and Moral Critique.
- Robertson, E. (1995). Reconceiving reason. In Kohli, W. (ed.) *Critical Conversations in Philosophy of Education*, pp 116–126. New York: Routledge.
- Robertson, E. (1999). The value of reason: Why not a sardine can opener? In Curren, R. (ed.) *Philosophy of Education 1999*, pp 1–14. Urbana, IL: Philosophy of Education Society.
- Scheffler, I. (1965). *Conditions of Knowledge*. Chicago, IL: Scott Foresman.
- Scheffler, I. (1989). *Reason and Teaching* (first published by Routledge and Kegan Paul, 1973). Indianapolis, IN: Hackett.
- Siegel, H. (1988). *Educating Reason: Rationality, Critical Thinking, and Education*. London: Routledge.
- Siegel, H. (1989). Epistemology, critical thinking, and critical thinking pedagogy. *Argumentation* 3, 127–140.
- Siegel, H. (1996). Reason and rationality. In Chambliss, J. J. (ed.) *Philosophy of Education: An Encyclopedia*, pp 536–539. New York: Garland Publishing.
- Siegel, H. (1997). *Rationality Redeemed?: Further Dialogues on an Educational Ideal*. New York: Routledge.
- Siegel, H. (1998). Knowledge, truth and education. In Carr, D. (ed.) *Education, Knowledge and Truth: Beyond the Postmodern Impasse*, pp 19–36. London: Routledge.
- Siegel, H. (2003). Cultivating reason. In Curren, R. (ed.) *A Companion to the Philosophy of Education*, pp 305–317. Oxford: Blackwell.
- Siegel, H. (2008). Why teach epistemology in schools? In Hand, M. and Winstanley, C. (eds.) *Philosophy in Schools*, pp 78–84. London: Continuum.

Further Reading

- Bailin, S. (1987). Critical and creative thinking. *Informal Logic* 9(1), 23–30.
- Bailin, S. (1990). Argument criticism as creative. In Trapp, R. and Schuetz, J. (eds.) *Perspectives on Argumentation: Essays in Honor of Wayne Brockriede*, pp 232–240. Prospect Heights, IL: Waveland Press.
- Burbules, N. C. (1991). The virtues of reasonableness. In Buchmann, M. and Floden, R. E. (eds.) *Philosophy of Education 1991: Proceedings of the Forty-Seventh Annual Meeting of the Philosophy of Education Society*, pp 215–224. Normal, IL: Philosophy of Education Society.
- Burbules, N. C. (1995). Reasonable doubt: Toward a postmodern defense of reason as an educational aim. In Kohli, W. (ed.) *Critical Conversations in Philosophy of Education*, pp 82–102. New York: Routledge.
- Ennis, R. H. (1996). *Critical Thinking*. Upper Saddle River, NJ: Prentice-Hall.
- Ennis, R. H. (1998). Is critical thinking culturally biased? *Teaching Philosophy* 21, 15–33.
- Hare, W. (1987). Russell's contribution to philosophy of education. *Russell* 7, 25–41.
- Hare, W. (1995). Content and criticism: The aims of schooling. *Journal of Philosophy of Education* 29(1), 47–60.
- Kohli, W. (1995). Educating for emancipatory rationality. In Kohli, W. (ed.) *Critical Conversations in Philosophy of Education*, pp 103–115. New York: Routledge.
- Martin, J. R. (1992). Critical thinking for a humane world. In Norris, S. P. (ed.) *The Generalizability of Critical Thinking*, pp 163–180. New York: Teachers College Press.
- McClennan, J. E. Jr (1999). Keep hope alive. In Curren, R. (ed.) *Philosophy of Education 1999*, pp 19–21. Urbana, IL: Philosophy of Education Society.
- Norris, S. P. (ed.) (1992). *The Generalizability of Critical Thinking*. New York: Teachers College Press.
- Scheffler, I. (1960). *The Language of Education*. Springfield, IL: Charles C. Thomas.
- Scheffler, I. (1991). *In Praise of the Cognitive Emotions*. New York: Routledge.
- Siegel, H. (1992). Education and the fostering of rationality. In Talaska, R. A. (ed.) *Critical Reasoning in Contemporary Culture*, pp 89–112. Albany, NY: State University of New York Press.
- Siegel, H. (1999). What (good) are thinking dispositions? *Educational Theory* 49(2), 207–221.
- Talaska, R. A. (ed.) (1992). *Critical Reasoning in Contemporary Culture*. Albany, NY: State University of New York Press.
- Thompson, A. (1999). Who thinks like this? In Curren, R. (ed.) *Philosophy of Education 1999*, pp 15–18. Urbana, IL: Philosophy of Education Society.

