

The Transfer and the Transferability of Critical Thinking Skills

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Asking ourselves why philosophers can perform the transfer is like asking why tailors have scissors whereas mechanics have spanners.

IF WE were to adopt a similar bet as the one that we owe to Pascal (who invited one to bet on the existence of God as one would have nothing to lose whether the bet proved right or wrong) we should bet that this capacity for critical thinking is transferable. And, similarly to Blaise Pascal, if we bet on the existence of transferability and we are proven wrong, we lose nothing but are left with a superior capacity which may be of help in *various* domains of our daily or scientific life. If, on the other hand, this capacity does exist, we have everything to gain from it, namely, a universal capacity which will enable us to approach all domains and to successfully reason in any of them.

If only it were as simple as that. But the authors who have studied this phenomenon are as divided with respect to their opinions on the matter as they differ when it comes to defining critical thinking. They discuss about degrees of transferability, and question what a domain really is so as to know what one is to refer to when one says that a capacity (irrespective of which that capacity might be) is transferable; what transferability means and whether it is a universal mechanism.

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All discussions spring from one of R. Ennis's articles published in 1989, "Critical Thinking and Subject Specificity: Clarification and Needed Research." Ennis himself begins with an exercise in critical thinking. In 1985, Ennis had defined critical thinking as that rational and reflexive thinking focused on deciding on what one is to think and on how one is to act. Likewise, critical thinking may be assimilated to other superior cognitive skills such as problem solving and metacognition. Ennis identifies four approaches to critical thinking: the general approach (abstract and concrete); the infusion approach; the immersion approach; the mixed approach.

The general approach is that approach which focuses on teaching critical thinking, on forming critical thinking apart from the specific content of subject matters. It has two variants; in its abstract form, one does not have to use a certain content, merely abiding by Logic through the use of variables (All As are Bs). These courses are also known as Informal Logic. In its concrete form, one uses as mere examples concrete situations pertaining to various domains. The purpose is to teach pupils how to think critically in non-school contexts (Ennis 1989, 4). Courses in critical thinking offered within the general framework might be held separately, as it is the case of courses in informal logic and in argumentation and critical thinking in universities.

Approaching the development of critical thinking *through infusion* presupposes the encouragement of students to think critically within each subject matter in which the general principles of critical thinking are explicitly formulated.

The immersion approach, on the other hand, is similar to discovery learning, as pupils are immersed in the respective domain without being specifically referred to the principles of critical thinking (Prawat 1991). Ennis mentions McPeck as being a representative of immersionism. What is important is that McPeck identifies himself as being a supporter of the immersion approach (although he does not seem very thrilled about the term itself), due to the fact that one may not expect psychological transferability if one does not know what it is that one desires transferred.

The mixed approach is a mixture between the general approach and one of the other two approaches presented above, immersionism or the infusion approach. As part of this approach, pupils participate in separate courses in critical thinking as well as in domain specific activities wherein the principles of critical thinking are applied. Ennis identifies with the mixed approach when he talks about the development/teaching of critical thinking.

Ennis organizes the four approaches into a table with the intention of conveying a synthetic image about the way in which one may relate to the teaching/development of critical thinking (Ennis 1989, 5).

Table 1. THE GENERAL, MIXED, INFUSION AND IMMERSION APPROACH TO CRITICAL THINKING

	Are the principles explicitly presented?	Does it use contents?	Does it use the contents of a standard domain?	Does it use the contents of a standard domain and other contents?
General-abstract (exclusively)	YES	NO	NO	NO
General-concrete	YES	YES	NO	PROBABLY BOTH
Mixed	YES	YES	NO	YES
Through infusion	YES	YES	YES	NO
Through immersion	NO	YES	YES	NO

Things become ambiguous when we start talking about subject matters, about a field of knowledge. How can we say that a certain domain is more favorable to the development of critical thinking than another when we do not yet know what a domain is. Moreover, Ennis claims that many of the subjects and topics existing in real life are not taught in schools, nor do they have an echo in the curriculum. Thus, we had better not support the idea of transfer and transferability if we do not know what is being transferred. Another frequently asked question is: if there are certain critical thinking skills related to certain domains and if these are not taught in schools, how is it that people apply critical thinking to those domains, but fail to apply it to other domains which they studied in school and in the case of which they have benefited from a certain training. That is, against McPeck, critical thinking skills are by no means trivial (Ennis 1990, 14), nor are they inherent to the behavior of an individual who has been trained to think critically.

The same type of argument is put forth by D. N. Perkins and G. Salomon (1989) who give the example of the chess player. Is it possible for a chess master to become an adviser on military or political matters? The answer must relate to whether the chess master can or cannot transfer what he knows from chess playing. The authors come up with the following answer: both yes and no. One has to minutely scrutinize the chess player—does he go by general principles of the ‘control the center—any center’ type, or is he rather led by contextualized principles such as ‘control the squares in the center’; how is his metacognition capacity—is he prone to making large, out of context transfers or is he but an intuitive chess player with extensive experience but with a restricted ability of reflection and generalization? Only after providing answers to all these questions can we anticipate whether the chess master may be a strategist in another domain. Even then, we may retain some doubts about it.

If Ennis is skeptical and urges for more research, McPeck states on the other hand that ‘thinking always comes down to thinking about something’ and that the phrases ‘to teach thinking’ or ‘teaching someone how to think’ are meaningless. Evans (1982) and Glaser (1984) have demonstrated through experimental research that the transfer of logic abilities is as problematic as any other transfer.

The polemic between Ennis and McPeck found its way in the *Educational Researcher* magazine as well as in a book, which McPeck edited in 1990, to which specialists with whom McPeck had debated on the matter, such as R. Paul or S. Norris, also contributed.

Ennis contradicts McPeck when the latter claims that thinking is always about something, which means that one cannot teach thinking outside a specific topic; if one says “All As are Bs, which amounts to saying that if something is not B that something is not A either,” where A and B are variables which may be replaced with any general term, this proposition is about A and B without being related to a certain domain or topic or object. Thus, says Ennis, one can teach and talk about a principle without relying on a certain content. McPeck briefly answers that it involves “an A and a B, therefore this thinking is about something.”

On the other hand, McPeck criticizes the standard approach to critical thinking maintaining that it is a universal and transferable capacity (1990a, 18). He states that if one is to consider formal logic as an example, which is the most prone to transferability, this is irrelevant for some domains in the sense that *its usage* is not an abstract capacity as the *domain* of formal logic is, but a part of what we call “rational thinking” in certain domains or disciplines.

Ennis’s answer is a nuanced one. He says that he does not fight “the transfer from one domain to another” if that “domain” is vague and if there are three forms in which the *specificity* of the domain is defined. Thus, any discussion about the transfer of critical thinking skills has to begin from the vision on specificity that we adopt.

R. Ennis claims that there are three basic versions concerning the specificity of a domain: an empirical, an epistemological and a conceptual one. For each variant involving the specificity of a domain critical thinking relates differently to the issue of its transferability.

In order to be able to transfer critical thinking skills when there is an empirical difference between the domains in question we have to:

1. Have background knowledge. Having such knowledge in a domain is essential if one wants to be able to think in that domain.

2. Have the capacity to transfer: (a) the simple transfer of critical thinking skills and dispositions from one domain to another is impossible; (b) anyway, the transfer becomes feasible if: (i) there is sufficient practice in several domains;

(ii) there is training concentrating on the transfer. If all these are valid, then the immersion approach, which does not render explicit the principles of critical thinking, does not suffice in Ennis's view because the transfer is enabled by one's focus on the principles and on one's knowledge of them.

3. Have overall instruction. It is less likely that any overall instruction in critical thinking is efficient in the sense that it renders critical thinking operational in several domains.

Epistemological specificity claims that credible arguments are domain dependent and that consequently critical thinking varies from one domain to another. Ennis claims having found in McPeck's writings three such principles that relate to the epistemological specificity of the domains:

1. Knowledge in the domain: in order to be able to think critically within one domain one has to have knowledge within that domain.

2. Interdisciplinary variability: good arguments are domain dependent; they may vary from one domain to another.

3. Full understanding of the domain: this is a necessary condition if one is to think critically within a domain.

Ennis proves that certain concepts are common to several disciplines and that the specificity of domains from this point of view is much vaguer than in the case of the other specificity criteria.

To sum up what we have said so far, there is a difference of philosophical vision between formalism (universalism), represented by Ennis (as well as by Siegel, Paul and Norris), and anti-formalism, represented by McPeck (who goes along the lines of Toulmin and Wittgenstein). McPeck thinks that the forms of critical thinking are in direct proportion with the topics, whereas Ennis believes that there is a general ability called critical thinking just as Logic is universal. McPeck does not even accept that Logic is the one which governs argumentation in specific domains, claiming that this falls under the authority of epistemology, of the way in which one provides and gathers domain-specific evidence. Hence his option for *a thinking that is natural, applied and contextualized* to objects of study or to topics of discussion.

In his book *Teaching Critical Thinking: Dialogue and Dialectic* McPeck admits that there is knowledge which may be transferred from one domain to another depending on its nature. He provides the following example: "understanding the fact that politicians are sensitive to the pressure of obtaining votes will have a greater transfer value than understanding the fact that a cat is lying on a mat" (McPeck 1990a, 15–16).

The following fact is interesting: McPeck shows where the mistake in the standard vision on critical thinking lies: there is confusion between "logical subsuming" and "psychological transfer." In other words, if a sum of logical prin-

principles is found in each domain and if the domains have to be subject to these principles, this does not mean that one has to infer that the transfer is done on the basis of these logical principles, because in its essence this transfer is psychological and not logical.

In other words, and we support McPeck's view, the fact that we accept the existence of domain organization according to logical principles (whatever that might mean), does not show that once we have managed to isolate these universal principles within a domain in which we are an expert, these principles will be automatically transferred to other domains and to daily life. There has to be a way to render particular to a domain all "principles," which do not seem to be as universal psychologically as they are theoretically and logically.

How do the authors characterize one another's view? McPeck (1990b) characterizes Ennis's view according to which there is a general capacity labeled critical thinking as a *naïve logical positivism*, whereas Richard Paul, a supporter of the existence of a general capacity for critical thinking, just like Ennis, blames McPeck for his "logical atomism" (McPeck, 1990a).

As Perkins and Salomon point out, the topic concerning the interaction between local and general knowledge is open to research, as they support the existence of this dichotomy.

The issue that our research raises is the following: if one's mind does not allow for a separation between "school knowledge," "museum knowledge," "cinema knowledge," and "Botanical Garden knowledge," then why don't we maintain reality as it is and try to develop critical thinking by integrating reality in the planning of integrated educational programs? This is, however, subject for further research.

Nevertheless, we cannot but be impressed with Robert Ennis' fine conceptual analysis and distinctions. Questions concerning the transferability of critical thinking skills also have to address the criteria of specificity of the empirical, epistemological and conceptual domains. We also have to agree with Ennis when he states that we need thorough research in order to decide on what is being transferred and on what exactly is much too specific to be transferred from one domain to another.

We must also agree with Ennis that the attempt to define the term "domain" is most challenging and that we cannot transcend the vagueness of this term and decide on the boundaries of a domain.

WE LEFT for the end the discussion about a special case i.e., an instantiation of critical thinking transfer: philosophers. How can they discuss with the same acuteness about almost anything? We might think that this is a success story of transfer. Actually, this may very well be precisely what

led scholars to claim that critical thinking is made up of universal principles that may be transferred from one domain to another. We believe this presupposition to be false. The philosophers' job is to focus on argumentation, on performing a critical exercise in anything. Philosophy is a domain requiring "content-free" reflection, and philosophers look for the principles and the argumentative make-up of any speech. One may not nurture the same expectations from any other individual who has not been trained accordingly and who does not have the necessary structural motivation to reflect, to find principles and to assess their strength. A specialist in a domain or a student who is studying a domain does not question the axioms of the discipline, nor does he ask questions about the empirical, conceptual and epistemological make-up of their domain. They do not actually know that there are such dimensions concerning the specifics of a discipline. They simply function within a space which they take for granted.

Asking ourselves why philosophers can perform the transfer is like asking why tailors have scissors whereas mechanics have spanners. It is because this is what they do and we cannot extrapolate this case of successful transfer to all domains. We therefore accept that there are certain principles which we can transfer, but which are few and which need to be checked through experimental research *cum grano salis*, through isolation. Only then can we state that there exist certain universal and trans-disciplinary principles of critical thinking. □

References

- Ennis, R. 1989. Critical Thinking and Subject Specificity: Clarification and Needed Research. *Educational Researcher* (Sage Publications) 18, 3: 4–10.
- . 1990. The Extent to Which Critical Thinking Is Subject-Specific: Further Clarification. *Educational Researcher* 19, 4: 13–16.
- Ennis, R. and E. Weir. 1985. *The Ennis-Weir Critical Thinking Essay Test: An Instrument for Teaching and Testing*. Pacific Grove, CA: Midwest Publications.
- Evans, J. 1982. *The Psychology of Deductive Reasoning*. London: Routledge & Kegan Paul.
- Glaser, R. 1984. Education and Knowledge: The Role of Knowledge. *American Psychologist* 39, 2: 93–104.
- McPeck, J. E. 1990a. *Teaching Critical Thinking: Dialogue and Dialectic*. New York–London: Routledge.
- . 1990b. Critical Thinking and Subject Specificity: A Reply to Ennis. *Educational Researcher* 19, 4: 10–12.
- Norris, S. P. and R. Ennis. 1989. *Evaluating Critical Thinking*. Pacific Grove, CA: Midwest.
- Paul, R. W. and G. M. Nosich. 1992. *A model for the national assessment of higher order thinking*. Santa Rosa, CA: Foundation for Critical Thinking.

- Perkins, D. N. and G. Salomon. 1989. Are Cognitive Skills Context-Bound? *Educational Researcher* 18, 1: 16–25.
- Prawat, R. S. 1991. The Value of Ideas: The Immersion Approach to the Development of Thinking. *Educational Researcher* 20, 2: 3–10.
- Toulmin, S. 1958. *The Uses of Argument*. Cambridge, MA: Cambridge University Press.
- Siegel, H. 1988. *Educating Reason: Rationality, Critical Thinking and Education*. New York–London: Routledge.
- Wittgenstein, L. 1953/2001. *Philosophical Investigations*. 3rd edition. Oxford: Blackwell Publishing.

Abstract

The Transfer and the Transferability of Critical Thinking Skills

The paper contends that if the capacity for critical thinking is transferable, this would enable us to approach all domains and to successfully reason in any of them. However, the issue of transferability remains just as divisive among specialists as the very definition of critical thinking. The author surveys the main current debates surrounding this topic, highlighting the fact that here is a difference of philosophical vision between formalism (universalism) represented by Ennis (as well as by Siegel, Paul and Norris), and anti-formalism, represented by McPeck (who goes along the lines of Toulmin and Wittgenstein). Considering the particular case of philosophers, the author concludes that the presupposition whereby critical thinking is made up of universal principles that may be transferred from one domain to another is false, and that there are only certain principles which we can transfer, which are few in number and which need to be checked through experimental research.

Keywords

critical thinking, skill transfer, transferability, cognitive skills