

Opinion Page: *Between Scientism and Relativism: Epistemic Competence as an Important Aim in Science and Philosophy Education*

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Steven Pinker recently contributed an opinion page to the monthly [HPS&ST](#) note, warning against the dangers of an intellectual war on science. He identifies the educational system to be an important battleground in that war, criticizing US-American university liberal-arts curricula for poisoning students against science rather than instilling in them an appreciation for science as a major human achievement. In Pinker's view, the clash between humanities and science is a disaster not only for science and for society but also for the humanities themselves which, due to their lack of a progressive agenda, face an increasing loss of importance. He therefore advocates a consilience of the humanities with science from which "both sides would win".

A consilience of humanities and science indeed is an urgent task. This applies particularly to the educational context. We recently proposed an interdisciplinary approach on science and philosophy education (for further publications on the issue see references in the RISTAL-paper linked above). Our approach takes into account both the necessity to inform philosophy education by the findings and methods of empirical science and to alter science education by the application of philosophical insights and standards of reflection.

We believe that discussions of societal controversies should play an important role in secondary and higher education. This is so, because school and university are perhaps the only places where young people can be initiated to the practice of empathetic and rational discourse with peers whose backgrounds are quite different from their own. The above-mentioned war on science, which in fact is a struggle for sovereignty in interpreting the scope and limits of scientific insight, the role of science in society and especially the relevance of

scientific knowledge in the area of societal decision-making, seems to be one of the most pressing controversial issues of today. It therefore appears necessary that all students at the upper level of secondary education should develop an informed view on the dispute sketched above. However, the controversy on the scope and limits of science needs to be addressed in an appropriate manner. We assert that this cannot be done in separated subjects but requires an interdisciplinary approach.

The problem in current science education is that philosophy of science either is largely absent (as it is the case at least in Germany) or is dominated by concepts which seem to imply (or, at least can easily be understood as) predominantly pessimistic views on science. In both cases the controversy is covered up. This may cause negative effects. At least there are empirical findings indicating that both lead to naïve views: naïve-optimistic if philosophy is omitted and naïve-pessimistic if reflection is reduced to a social-constructivist approach to science.

In philosophy education, at least in countries like Germany, Italy or Spain, we can observe a still too dominant engagement in the teaching of “the great philosophers”. As the hermeneutic orientation continues to prevail, the findings and methods of modern science are utilized (or even noticed) only rarely, if ever. Instead, a profound prejudice against letting scientific knowledge inform philosophical discourse is widespread. Confronted with the claim that philosophy must integrate the findings of the sciences to fulfill the standards of problem-based, lifeworld-oriented and learner-centered lessons, teachers and teacher educators usually respond in the same way: “But then we will lose our subject”. While these resistances and the underlying concept of Philosophy need to be investigated in greater detail, the *metaphilosophical* answer seems to be far less controversial. Philosophy education that ignores current scientific knowledge and corresponding controversies around science not only runs the risk of losing life-world relevance, it also runs the risk of becoming poor philosophy.

We therefore claim that there is a strong need both for philosophically informed reflection on science in science education and for scientifically informed discourse in philosophy education. An adequate treatment of the issue sketched above requires both an interdisciplinary approach in science and philosophy education and it requires interdisciplinary lessons in school.

We propose that *epistemic competence*, the ability to understand and critically reflect on aspects of the methods, results, history and relevance of scientific knowledge in relation to other forms of knowledge, should be a goal of science education as well as philosophy education. We explore what kind of skills, knowledge and dispositions a person should learn in order to master this ability. For example, an epistemically competent person should be aware and should accept that reflection on science requires some tolerance of ambiguity, that “scientifically proven” does not mean “true for evermore”, that both in science and in philosophy indeterminacies (and aporia) sometimes are unavoidable, and that controversy as well as rationality are indispensable principles.

It is important to note that some prerequisites are a matter of course in philosophy education, but they are alien to science education, and vice versa. The principle of controversy for example, which is essential to world-view issues, is fundamental in philosophy education, but it is largely unknown in science education. In philosophy education, on the other hand, the discussion of the principle of controversy often neglects to include descriptive empirical findings. Often engaging in normative considerations, philosophers and philosophy teachers either are blind to the need to include and reflect upon empirical evidence, or they simply

don't know how to go about it (with the exception of applied ethics and empirically informed metaethics, up to a certain degree). And indeed only those who work in the area of philosophy of science are familiar with the various questions and problems of the sciences. However, philosophers of science do not represent the majority of the philosophical community.

But there is another, relatively recent, philosophical discipline that focuses on the role of scientific knowledge: Social Epistemology. New research in this field has brought a broader focus on the age-old question "What is a competent knower?", by discussing issues like the role of scientific experts, the epistemic effects of social interactions on beliefs, and various other aspects that address the role of scientific knowledge in belief-building contexts. Democratic societies are dependent on the participation of competent knowers in social decision-making processes to an ever greater extent. To strengthen the individuals' autonomy means to strengthen their epistemic competence. We believe that this goal is best and most efficiently put into practice in an interdisciplinary way.

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