APPLYING POPPERIAN DIDACTICS

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Abstract

University students often suffer unnecessarily during their studies - mainly due to traditional impositions which have little to do with intellectual and professional growth. Encouraging judicious critical thinking may help alleviate this. Training students in rational critical thinking before they begin the prescribed curriculum brings astonishing results, leading to quick, rational and enjoyable studies. Students quickly grasp that knowledge evolves and textbooks may be questioned; they develop independent critical thinking that results in very good final results. The challenge, therefore, is to convince teachers to apply critical rationalism.

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Introduction

Rather than reviewing Karl Popper's philosophy, I would like to highlight one relatively neglected aspect: the application of critical rationalism to didactic, more specifically to academic didactic, as an alternative to traditional unidirectional, dogmatic, authoritarian and often unpleasant teaching.[1] What follows is a mixture of history, philosophy and personal experience: I shall outline some historical roots of our university teaching, Popper's philosophy-related answer, and exemplify how it can work in the classroom, rendering studies more enjoyable and efficient.

Popper was interested in pedagogy mainly at the beginning of his career, as a high school teacher in Vienna. He wrote a couple of articles but soon turned his attention to philosophy, regarding pedagogy, rightly or wrongly, as subject to logic and epistemology. In his 1974 intellectual autobiography, however, reminiscing about his university studies, he made a well-known statement:

> I dreamt of one day founding a school in which young people could learn without boredom, and would be stimulated to pose problems and discuss them; a school in which no unwanted answers to unasked questions would have to be listened to; in which one did not study for the sake of passing examinations. (Popper 1976: 40)

[1] There are some excellent works dealing with critical rational in teaching. Among them: Bartley's *Unfathomed Knowledge* (1984) relates, rightly or wrongly, knowledge to material wealth, arguing how badly universities administer it. Perkinson's *Teacher's without Goals* (1993) is a short, lucid manifesto in favour of rational critical teaching of evolving knowledge, criticizing the "modern" teaching of allegedly accumulative knowledge. Agassi's delightful "Dissertation without Tears" ridicules the traditional perfectionist practice of writing university dissertations and advocates a more rational and enjoyable way of writing. Finally, Swann's article in this book offers a concise theoretical basis. These and other welcome agendas should be put into practice.

The statement is short, but the wisdom behind it is endless, and I imagine everybody who has been a student agrees with it. Why is it, then, so difficult, if not impossible, to apply it to higher education?

Unidirectional transmission of knowledge

The extent to which a university such as that dreamt of by Popper remains a utopia became vividly clear to me when, after many years overseas, I joined the University of Chieti, in central Italy. Most Italian universities are state universities, and even those called "private universities" join them to form a system of mass higher education that is strictly regulated by law and bureaucracy. Within this context, the state University of Chieti - named after Gabriele d'Annunzio, the superb modern Italian writer - makes a praiseworthy effort to render, whenever possible, some of the shortcomings more bearable. It offers a green campus, elegant buildings, modern teaching facilities and much good will from dedicated faculty and tutors. I nevertheless soon became aware that the exchange of knowledge between my students and myself barely had anything to do with the things I was trying to teach: the students seemed almost exclusively interested in passing exams. It is really only during exams, which in Italian universities are oral, that I have the opportunity for some intellectual exchange with my students. If a student looks for me during the teaching term it is usually to ask for details concerning the exams. Students who come to lectures do so above all to learn what will be asked in the exam. This calls to mind another passage of Popper's, in *Open Society*:

> Instead of encouraging the student to devote himself to his studies for the sake of studying, instead of encouraging in him a real love for his subject for inquiry, he is encouraged to study for the sake of his personal career; he is led to acquire only such knowledge as is serviceable in getting him over the hurdles which he must clear for the sake of his advancement. In other words, even in the field of science, our methods of selection are based upon an appeal to personal ambition of a somewhat crude form (Popper 1966: 135).

Italian universities made me realize to what extent all this can be fostered by a centralized system. Curiously enough, a semi-official expression current in universities is "*portare un testo*" ("to carry a textbook"). It denotes the practice of carrying a textbook to the exam both physically and metaphorically. Physically, because students are implicitly advised to show the examiner that they own the textbook, i.e. that they materially own a piece of knowledge. Metaphorically, to show that they carry the contents of the textbook in their head, i.e. they know it by heart and are ready to recite or pour it for the examiner. It is as if they carried a bucket and poured its contents into the examiner's bucket; the extent to which they manage to fill the examiner's bucket determines their grade. This calls to mind Popper's metaphor of the mind as a bucket, portraying the mind as a passive receptor in his *Theory of Objective Knowledge*. In formulating it, Popper was influenced by the Würzburg School of Psychology led by Ostwald Külpe, that attempted to refute sensationalism and undermine associationism, all features of the traditional empirical learning theory of Locke and Hume.[2] Amazingly, the jargon term "to carry" ("*portare"*) has developed independently of Popper. Popper's teachings have, as a matter of fact, been unofficially banned for decades from Italian universities which – through a mechanism which is beyond my understanding – have been ruled for many years since World War II by an overwhelming majority of communists, cornering a minority of Catholics. Neither are very fond of Popper. Today, fortunately, Italian universities are no longer politicized, Popper's philosophy is welcome, and the general standard has considerably improved. This points out some of their many positive aspects which include, among others, intellectual flexibility.

However, the majority of students, all over the world, continue to suffer during their studies, and the university establishment does not do much to alleviate this suffering. What is most excruciating of all is to walk through the university libraries and corridors during the exam period and see exhausted students, with red eyes and desperate expressions, highlighting paragraphs of textbooks to learn by heart. No wonder exams can turn into a tragicomic recitation with many

[2] As Berkson and Wettersten argue, drawing attention to the contribution of twentieth century psychological debate in Central Europe involving psychologists such as Ostwald Külpe and Otto Seltz (Berkson and Wettersten 1984).

unwanted answers to unasked questions. Not being a drama teacher, I get the mortifying feeling that I am mentoring parrots rather than young intellectuals, with the difference that parrots do not forget the stuff immediately afterwards.

Must intellectual growth necessarily become a torment?

From my own experience, both as a student and as a teacher, if one applies rational criticism, studies can become enjoyable. Why, than, is it so difficult to change such an obviously anti-intellectual system? Popper succeeded in pinpointing just how deep the historical roots of the problem are - reaching back to the dawn of western civilization.

The historical background

The roots of our modern university system can be traced back to pre-Socratic time. In the second half of the 5th century B.C., Athens and other parts of Greece saw the appearance of the sophists, itinerant teachers who were paid to teach rhetoric as a game and a persuasive art. At the end of that same century, Socrates, who belonged to the same tradition but is said to have disapproved of its practices for ethical reasons, introduced his method of inquiry and growth based on dialectic**.** It is essentially a dialogue wherein two (or even more) interlocutors discuss an issue and attempt, through questions and answers, to lead their counterpart into a contradiction.

Socrates endeavored to develop virtues rather than teach truths and the way he suggested it be put into practice is an exciting experience. Despite this fact, his method was not very successful. It was soon flanked by his best-known pupil, Plato, the founder of what can be considered the earliest western academic institution: the Academy.

We know little concerning Plato's early Academy. In the *Republic*, however, Plato presents a detailed educational program aimed at

training leaders. This is done more by unidirectional teaching of "truth" than through dialectic. Dialectic is formally given utmost importance but, as far as the process of learning is concerned, it is implicitly relegated more to the secondary, preparatory role of refuting deceptions. In the seventh book of the *Republic*, Plato portrays his best-known piece, the allegory of the cave. He depicts prisoners chained in a cave, who can only see shadows on the walls and thus do not realise how wrong their existence is.

What would occur if one of the chained individuals were released from his bondage, left the cave and were enlightened by truth? He would realise, says Plato, how miserable his previous existence had been and would want to return to the cave and free his former fellow prisoners from their bondage.

As I was rereading the Platonic text, I saw both myself as a student and my present students metaphorically chained inside the cave. I, too, suffered as much as they did without really knowing why, not being able to imagine a world of studies without suffering. When I registered at university I considered myself, just as so many other students do, an ignorant caveman acquainted only with shadows, and I was convinced that at the university some enlightened academics would grace me with true knowledge. I was ready to do anything they said, even if this meant sacrifice and suffering. I would also never dare to contradict them, even on those occasions when what they were saying seemed absurd to me. Whenever I failed to understand what my teachers were saying I automatically blamed what I believed to be inexperience or foolishness on my part.

Plato's pupil, Aristotle, the most famous collector of knowledge in history and the founder of the celebrated Lyceum, added another milestone to the basis of the modern University. According to Aristotle, one can discuss many issues except some evident truths. A similar approach was adopted by another schooling tradition at the basis of universities, the monotheistic one, beginning with ancient Jewish institutions of learning, in which one could discuss everything except the word of God as written in the Bible. As the Spanish, fifteenth-century Jewish scholar Hasdai Crescas pointed out in the earliest, devastating critique of Aristotle, there is a difference be-

tween divine truth and philosophical truth. Yet either way, Aristotelian philosophy and theology, whether Jewish, Christian or Muslim, are dogmatic and therefore not always the best allies of science. Questioning them may even occasionally lead one to the stake.

Dogmatism, however, is the line of thinking adopted by universities. Moreover, universities were founded as corporations of teachers and students in medieval cities. Corporations can be vital in encouraging a certain type of activity but once they have reached their goal they tend to become closed societies that hamper progress, as beautifully depicted in another allegorical work, Orwell's *Animal Farm*. In fact, despite the arguments of some nostalgic historians, science developed primarily outside the universities.

The French revolution, in the wake of the Enlightenment, secularized the university - but not its way of thinking. Textbooks replaced the Bible but the sacredness remained and the related authoritarianism went on causing suffering.

To me, such tension is unbearable, although I was always astonished to see how some of my fellow students made their way through the process. They diligently learned every single detail of a textbook by heart; they embellished what they learned with expressions taken from trendy publications in lectures at scholarly meetings, to the delight of the who's who in the field, and swiftly climbed the academic ladder. Popper's pupil, Joseph Agassi, uses a variation on an expression by Thomas Kuhn to label them "super-normal" students. A super-normal student is a student on the way to becoming a normal scientist. For Popper, the normal scientist "is a person one ought to be sorry for"…he "has been taught badly." (Popper 1970: 53)[3]

Applying Popperian Didactics

[3] This comment, by the way, was made directly to Kuhn in an International Colloquium in the Philosophy of Science that was held on July 11-17, 1965 at Bedford College, London. Popper was replying to Kuhn's criticism for having undervalued the importance of "normal science."

In his *Open Society*, Popper went to the root of the problem by giving an implicitly revolutionary interpretation of Plato's cave allegory. Before Popper, surviving in the cave was regarded as erroneous, and the light shining outside was regarded as right. Are we certain, he asks, that that "light" is genuine? Is the world outside the cave the real good and are the shadows so evil? Who gives "light" a certificate of authenticity? Can one perhaps get precious information from a shadow, too?

Popper's challenge is remarkable; with it in mind, I attempted an experiment. To teach students to think and work critically and rationally, i.e. instead of teaching them the stuff, teaching them how to learn and evaluate the stuff. The analogy is that of the telephone book. One does not need to learn a telephone book by heart to find a number. It is enough to know how the telephone book is arranged and the alphabetical order.

I established a series of introductory lectures dealing with open questions such as what is science, how knowledge grows, what is a university and how one should study rationally.[4] This meant encouraging the students to speak up during the lectures and assuring them that nothing they said, as long as it was said respectfully, would be used against them. The university, I claim, unlike the real world, should be the incubator in which one can make mistakes without being punished. On the contrary, making a mistake offers a golden opportunity for teachers and students to take advantage of criticism and grow.

I teach students, *inter alia*, elementary procedures such as reading and evaluating a book or a textbook. Academics, who are used to writing book reviews, are able to get to know the contents of a book in a short time, but do not teach their students this secret art. I also

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[4] As Henry Perkinson pointed out to me, these are what Popper, in chapter 11 of his *Open Society*, calls "essentialist questions" and should be of no concern to science. One should, rather, ask what science should look like, what the function of science or of a university should be, or what universities are for. Didactically, however, proposing these questions may play a helpful role for students, since they are familiar with these types of questions and presenting them as open avoids the main danger of giving "essentialist" answers.

teach them how to overcome the fear of writing a paper.[5] The idea is that they become independent, intellectually honest and responsible.

In the beginning, I was fully aware that I was committing a heresy, and in fact I got mixed reactions. But the students were enthusiastic, they crowded my lectures and seemed to begin to enjoy studying and learning how to criticise. Instead of unidirectional transmission of the curriculum, I tried to focus on major problems and their context and encouraged students to attempt an answer. This raised their interest, led to open debates, drew further questions from the students themselves and encouraged them to seek for answers in the literature, thereby increasing the course efficiency. They mastered the curriculum relatively quickly and, at the end, obtained remarkable results as they were examined by commissions that were by no means Popperian. To my surprise, I was encouraged to carry on.

Since then I have been holding lectures all over the country, trying to teach students how to avoid suffering. The repeated complaint is: university professors, in general, are not cooperative. Indeed, it is not an easy task for former super-normal students, even for those who sincerely declare themselves as Popperian, to encourage students to be active and independent. Yet, at the beginning of the twenty-first century and in an age of technology and science, it is the duty of the philosophical leadership to make an effort to open the university. Popper argues convincingly that the open society is the most appropriate one for science. The university is still a rather closed society and this is the basis for tension and suffering. Whether we like it or not, today we live in a globalized world which is a product of the open society; it offers terrific challenges and the university must cope with them. At the beginning of the third millennium we are flooded with data, and one of the main tasks of studies, academic in particular, should be to learn how to filter it critically and reasonably, rather than to collect it.

I suggest applying Popper's idea of gradual social engineering, i.e., trying to improve the university in small steps. The main avenue is not to excel but to try to minimize the damage. I do not suggest turn-

[5] Much in the wake of (Agassi 1999).

ing upside down an institution that, through many centuries, has, after all, developed many praiseworthy aspects. Rather, I hope that ongoing independent initiatives in different countries join efforts. I also take the liberty of suggesting, in general, that university colleagues begin by trying to teach the use of critical rationalism. The advantages are invaluable for all of us.

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