

Editorial

Cómo citar: Maldonado, C. (2019).
Education: a conspicuous case of rebellion
in science. *Praxis Pedagógica*, 19(24),
1-8. <http://dx.doi.org/10.26620/uniminuto.praxis.19.24.2019.1-8>

ISSN: 0124-1494

eISSN: 2590-8200

Editorial: Corporación Universitaria
Minuto de Dios - UNIMINUTO

Recibido: 16 de abril de 2019

Aceptado: 10 de mayo de 2019

Publicado: 5 de junio de 2019

Conflict of interests: the authors have stated
that there are no interests in competition.

Education: a conspicuous case of rebellion in science

La educación: un caso conspicuo de rebelión en la ciencia

Educação: um caso conspícuo de rebelião na ciência

Science in general, unlike politics, is not based on consensus and majorities. What feeds scientific research and gives it its dynamism are, on the contrary, debates, disagreements, disputes, arguments and counterarguments, evidence and rebuttals. For this reason, science in general needs the conditions of democracy to function properly, and, as a by-product, it further perpetuates those very conditions. Unfortunately, science is currently suffering from a noticeable lack of these fundamental democratic conditions.

Perhaps the best *conditio sine qua non* for science is education. A science policy runs contemporaneous and in parallel to an education policy. However, from a structural standpoint, an education policy only contains a science policy as a sub-category.

It is safe to say, education may properly be viewed as a conspicuous case of rebellion in science.

If we are to follow from the tradition that the origin of Western education was borne out of the framework of the Greek *paideia*, whose epitome is the maieutics of Socrates, then we need to slow down a bit. Maieutics, in its appearance or

Carlos Eduardo Maldonado
<http://orcid.org/0000-0002-9262-8879>
Universidad El Bosque
maldonadocarlos@unbosque.edu.co
Colombia



structure, consists in the art of asking questions after which the student discovers by himself the new knowledge. But in its depth, and in its dynamics, maieutics is part and parcel with irony and sarcasm. This is not an inquisitive question, but playful and cheerful. Irony and sarcasm ignite the spark of learning.

The exercise of education consists in a permanent questioning, not in repetition and memory. The freedom to question is the central condition for any science, and the backbone of all democracies. This includes the ability to debate authority and engage in serious discussions with only those who base their findings in objective argumentation and experiments, for example. Since Aristotle, this objective stance on acquisition of new information through the scientific method has been thwarted by authority, time and again.

This method of questioning Socrates called the “Maieutic method”. The truth is that students only become more intelligent when they are taught by intelligent teachers, i.e. those who accept and promote being critical. Any lowering of this standard leads to perilous consequences.

Notably, the maieutic method was accompanied by irony and sarcasm, although both terms have shifted greatly in meaning in their modern form. Nevertheless, the original spirit remains: it involves the capacity to laugh, to laugh intelligently, and to thwart *ad hoc* arguments, constructed falsely or arbitrarily. Learning should be a delight (We should not forget that the word “homework” originally comes from “the assignment of the laborer”, day after day, reducing thus the assignments of school and university to a mechani. If not a stupid task).

Today we live in a magnificent world, which has been designated by three different names: the information society, the knowledge society, the network society. In such a world, for the first time in history, no one teaches anyone anything. We live in an immensely rich world - rich in data and information. The information is available and is within everyone’s reach in practical format.

For the first time in human history, the citizen has the potential to learn endlessly on their own terms, unless

restrictions are set by an authoritarian ruler. Children can grow up to know more than their parents, the patient can be more informed than the doctor, and the student can edify the teacher. Today learning is ubiquitous, e.g.: the existence of “learning communities”, constantly emerging pedagogical methodologies, deconstructing old knowledge to be replaced by new knowledge, etc. This represents an authentic cultural and civilizational revolution.

Importantly, one fact that has been sufficiently highlighted by biology in general, and the theory of evolution in particular, is that not all organisms learn – not all species are capable of learning. Learning is a truly complex matter. Those organisms and species that fail to learn - usually because they have specialized a great deal - become endemic, become endangered and eventually die off. The same thing happens, *a fortiori*, in the sphere of society, culture and history. There are individuals, even groups, that fail or refuse to learn; there are even societies and cultures that do not learn well or fast enough. The result is predictable.

Learning is certainly radically different from indoctrination. It implies a critical spirit, and the most difficult of human conditions: to develop one’s own criteria. The ability to learn on one’s own terms is a feature of a free society; otherwise we just have people with knowledge that is fed to them.

Such indoctrination inculcates a sense of belonging, loyalty, fidelity and other similar characteristics and demands, giving rise to expressions like *Póngase la camiseta* “Put on your shirt!”, and *Hay que pedalear juntos!* (Colombian political slogans). A careful reading of the history of the mafia shows that loyalty and fidelity, as well as the sense of belonging, are, properly speaking, mafia mental structures. It seems that the morality of our time is mafia, because it punishes its own criterion: independence, autonomy, freedom.

Having your own judgment is a difficult issue in times when people are used to being told what to do and what not to do. It is precisely for this reason that the importance of education must be stressed a thousand times over.

The exercise of good education is that of lifelong learning: students learn, teachers learn, society as a whole learns. But you have to be willing to learn. And, it is human nature to want to learn – something new in a new language. Apathy for education is contempt for the lack of novelty and innovation in content and forms of learning. Whenever people see new things, they engage perfectly with the process: with the group, with the teacher, with the contents developed. Thus, the burden of proof falls on the education system, not on the students, in any manner whatsoever.

It is true that around the world the education system struggles with high dropout rates. These are independent of the socio-economic stratum, independent of society, and in short, independent of geography. It is not that students do not want to continue in colleges and universities, it is that universities and colleges have not evolved properly to include this forgotten batch of “lost causes”. The guilty parties are all of its members: rectors, deans, directors, professors, administrative staff.

Joy is the essence of life. No one does anything with pleasure if he does not do it to completion. And no one learns anything new if it is out of obligation. The joy of living seems to have been lost, and life seems to be an inertial movement: to work, to marry, to have children, to pay debts, and, to put it bleakly, to die, at the end of the day.

The most important and by far the most decisive goals of education is to regain the *joie de vivre* – the will to live. A life with desire and joy is a life with plentiful horizons, and thus, endless possibilities.

There seems to be an atmosphere of uneasiness and of deep discomfort in the culture – one of ennui and neglect – which translates into indifference, distance, indolence, selfishness and insensitivity. Rebellion in science is nothing but the joy of existence. No one else can be truly rebellious unless they are filled with the will to live, with optimism that things can be achieved, with a sense of humanity towards nature and others. The rebel is an optimistic being; otherwise they are filled instead with anger and deep pain, which often have dire consequences.

Students should have dreams, and yes, to dream the impossible. To be able to see the forest for the trees, find the needle in the haystack are deeply rewarding discoveries. It is quintessential to a joyous life to assume one's own destiny, even if this involves making many mistakes along the way – this is to know true freedom.

Therefore, in this line of thought, we can say that science is on the same plane as the arts: sensitivity must be able to sprout and express itself freely, not contain it. But along this plane, it is not exactly the emotions that surface first, but rather the passions. An optimistic life is a passionate life, and a life with dreams is a passionate life. Passion can reoccupy classrooms, laboratories, hallways, sports fields, and the atmosphere of education. In short, an objective education allows people to discover the joy they carry within, that which allows them to act for themselves. Such an education is a magnificent act of subversion and rebellion.

The greatest joys often do not spark laughter or applause, but fill one with optimism, especially in terms of discovering the boundless ability to learn in this modern era. Nothing is off limits.

No one teaches *anyone anything anymore* today. This is the essence of the method practiced by Socrates: the one they condemned because it taught freedom in an increasingly mediocre and standardized world. True ethics is not taught: it is learned by example. The example is always the best teacher, but the example never preaches, nor does it recite homilies. The example speaks the subtle language of life, and so we know what a good life is, and what it is to know how to live.

Education must be able to develop knowledgeable people. However, it must also be able to form intelligent people. Good education seeks transparency and light, and therefore moves away from opacity and darkness, in every sense of the word. A free person does not fear words, but uses them with grace and with joy, always.

However, the greatest approach in the world of education involves pointing, i.e. in pointing towards wisdom. It is there where education takes place, and where science finds its true home.

Good education is always the most demanding: that which does not adjust to mediocrity or shortcuts, which does not make concessions and which does not negotiate learning or freedom. Good education forms a free people, and a rebellious one, to boot. Like Socrates in classical Greece; like Jesus of Nazareth in the middle of the Sanhedrin and the Roman Empire; like Siddhartha Gautama surrounded by wealth and opulence, for example ... and there are many other cases.

Insubordination, freedom, one's own criteria, rejection of authority, a healthy amount of sensitivity and intelligence, and kindness and rebellion: these all combine to make life good, and as result make good people. And good people are always cheerful people, people who do not succumb to pessimism, people who know that the worst of futures will always be preferable to the best of pasts simply because there is a future. This joy always derives from the indeterminacy of a horizon that exists or that emerges before the unsuspecting gaze.

However, the most difficult part of the learning process is to unlearn what has been learned. This is actually, to date, much more than an expression, a language, rather than an effective reality. To unlearn what has been learned means a radical change of attitude, a true turning point in a life story. The most radical of all ruptures.

Of course, in order to learn you have to unlearn what you have learned, and novelty and innovation must be embraced. The truth is that people, businessmen, administrators and the government cannot get the word "innovation" out of their mouths, but they panic when it comes to actual change.

One way to solve a problem is to innovate. But the best way to innovate is by solving problems. So the two are not mutually exclusive. This points to problem-based learning, a common theme in education today.

Science is not about solving problems. That is what, in another context, an author like Th. Kuhn calls "normal science", which is intended to normalize people. On the contrary, science consists of conceiving, identifying and looking for problems: in short, to problematize the world and reality, to problematize the *status quo*, notably. That is why it is so difficult to practice

science, and exactly why science has become an exception to the norm in countries like ours, not the rule.

When one identifies relevant, formulates, and conceives relevant problems: the subject is clear. It is therefore completely different from the so-called “the research question”. A question is asked; a problem is conceived. A question is answered; a problem is solved. Two perfectly distinct things. It seems that through the pervasiveness of the so-called “research question” model, students and young researchers are stifled in their problem-solving abilities.

Education is the pantry where all these actions, situations, attitudes, circumstances begin and develop. An education for science, an education for the arts.

Many scientists throughout history have emerged onto the scene as incarnations of a rebellious bent. Recently, from Planck to Einstein, from Mendel to Dobzhansky, from Feynman to Kauffman, to name but a few. Advancement in knowledge is indeed possible, and advancement in knowledge means better comprehension of the world and nature, and therefore also better living conditions. But advancement in knowledge is impossible in a society that compels conformism, obedience, and compliance. Rebellion is the mitochondrial nucleus of the advance in knowledge. But this rebellion is learned in school, in college, in college.

Good education begets joy. However, joy cannot be taught. It can only be learned by example. In other words, education is a magnificent process of mimesis, contagion, coexistence, while at the same time nourishing independence and autonomy. With such a system in place, a better world may be possible; not to mention a better life.

Referencias bibliográficas

Barzun, J. (2002). *The House of Intellect*. New York: Perennial Classics.

Dyson, F. (2008). *The rebellious scientist*. Madrid: Debate.

Engineers, J. (2014). *The mediocre man*. Bogotá: Pan-American.

Luri Medrano, G. (1998). *The trial against Socrates. Socrates and the transposition of Socratism*. Foreword by C. García Gual. Madrid: Trotta.

Odifreddi, P. (2010). *Praise for impertinence or how science and mathematics can confront the prejudices of politics and religion*. Barcelona: RBA.

Ordine, N. (2015). *The usefulness of the useless. Manifiesto*. Barcelona: Cliff.

Vlastos, G. (1991). *Socrates. Ironist and Moral Philosopher*. Ithaca, New York: Cornell University Press.