



ALMA MATER STUDIORUM  
UNIVERSITÀ DI BOLOGNA

## Education and Research

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Education and research have walked hand in hand from ancient times, because their roots are inextricably intertwined with the original concept itself of the university. Over their long history, western universities have witnessed dramatic changes in terms of habits and lifestyles, but the relationship of mutual support and stimulation between those two fundamental missions has practically remained unaltered. When the medieval *dominus magister* taught the works of Aristotle, he did so by reading the text aloud and commenting on it with the help of his *glossae*, the marginal annotations he had affixed to the manuscript: in other words, in that moment he was sharing with his pupils the fruits of his research in a particular field of study and revealed a world that was not quite the world as such, but a vision of it as understood by the *auctoritates* of classical antiquity.

If we fast-forward now to our own times, we should remember that in between there was Galileo, and that from that moment onwards the whole matter of education changed, along with its organization, its style, the reasons for pursuing it and its relationship with society at large. What has not substantially altered, however, is the intellectual approach of the professor who cultivates young minds by communicating the results of his research.

We have many reason to be pleased for this welcome continuity of purpose between research and education. We have far less reason, however, for complacency about all the repetitive rhetoric we produce, celebrating the indissoluble marriage between higher education and research without ever analysing the terms of the deal, or acknowledging the worldly temptations that threaten to compromise that union.

Stating, for example, that broad support should be provided to strengthen the link between research and education might also be considered as a meaningless intention if not accompanied by a precise indication of the goals, once accepted that the main role of universities is to provide high quality intellectual training adequate to meet the evolving needs of society.



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The most meaningful and effective way of transmitting knowledge involves communicating a sense of the effort behind every new discovery, but also the joy of that discovery, the debt that it owes to its precursors, and also the collective and cumulative nature of new knowledge, as well as its intrinsically provisional and problematic status. Teaching in higher education needs this frame of reference to give historical depth to the process of knowledge transfer and to avoid generating a sterile form of learning, devoid of history, mysteriously extracted from unknown sources and thus experienced as an authoritarian imposition.

To this end, we have to say that the methods employed in scientific research are naturally suited to the creation of a hospitable environment in which the presentation of knowledge does not lose sight of its problematic and transitory nature and which gets young people acquainted with the need to continuously monitor our endeavours by a spirit of intellectual criticism.

It is, after all, on this fundamental requirement that the marriage between education and research is based – a marriage that thus far has enjoyed a special privilege of indissolubility, permitting it to emerge unscathed from the revolutions of history and the corrosions of time.

However, the world in which we find ourselves living today (and which we have built, perhaps without altogether wishing to) is no longer that of Aristotle but rather that of Heraclitus: “we never step in the same river twice.” The modern world has chosen as its defining icon the process of constant change and continual transformation. All our institutions, even those with the deepest historical roots (like our universities), are being shaken to the core by this state of flux, which now makes peremptory demands and expects instant responses.

Paradoxically, this high-speed evolution process seems destined to force all the various cultures of the world to change in a uniform manner. From this point of view, globalization appears to be synonymous with homogenization: a phenomenon well expressed by the concept of a *flat world*,<sup>1</sup> so successful in recent years, although it conceals serious social concerns about the unfair share throughout the world of the benefits produced by the growth of the global economy. *En passant*, I do not think, for example, that the 1.2 billion people still living on less than 1 dollar a day are enthusiastic about the idea of living in a *flat world*, nor probably are the entire

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<sup>1</sup> Thomas L. Friedman, *The World Is Flat: A Brief History of the Twenty-First Century*, 2005.



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societies progressively marginalized by the growing *digital gap*. Progress has no ears for the “cries of the wounded,” as Williams James would say.<sup>2</sup>

### **Atomization of knowledge**

The balance between education and research is also changing, for many and different reasons, both external and internal to the world of education and research.

This effect is strictly influenced by the process of progressive fragmentation of knowledge. The need imposed by the research economy to confine the field of investigation has progressively weakened the connections between the disciplinary areas, favouring their fragmentation into ever smaller specialties and – what is definitely more worrying – the erection of previously unknown barriers between them. The immediate impact on teaching has been the atomization of knowledge or even, as has been alleged, its “balkanization”. Then, within the universities, traditional intra-institutional connections have been upset, or even demolished, and many stable points of reference to universal values have been progressively dismissed.

Hence the first fundamental threat to the traditional balance between teaching and research stems from within the university world itself, resulting in students being profoundly disorientated and left alone to make the arduous attempt to link the branches of knowledge, to combine them, to find some harmonization principles, as well as to identify the priorities.

### **Adaptativity problems**

A second threat comes from the outside. I am referring to the demand for education and research to adapt continuously to the evolution of the economy, to provide prompt responses to its multifaceted demands in the context of a borderless market, and to follow automatically the latest recipes suggested by that market. Universities have to resist the pressure for this over-adaptation of education and research to economic needs, being aware that adapting totally to the ephemeral forms of the *hic et nunc* (the “here and now”) would rapidly kill the intrinsic creative value of university culture. In other words, it would be a short-sighted plan that we would soon regret.

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<sup>2</sup> William James, “*The Moral Philosopher and the Moral Life*,” Intern. J. of Ethics, Vol. 1, No. 3 (Apr., 1891), p. 350.



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On this subject, Edgar Morin writes that “*always, in life and in history, an over-adaptation to the given data was never a sign of vitality, but of senescence and death, due to the loss of the inventive and creative substance.*”<sup>3</sup>

The threat is insidious because it strikes right at the heart of the bond between education and research by foregrounding or even giving exclusive consideration to the technical skills required to run the knowledge-based economy, thereby assigning to the universities the role of developing such immediately applicable skills, while deeming research to be far too costly and risky an enterprise to be entrusted to those bizarre and scarcely controllable institutions that are our universities.

This poses a dilemma for those of us who work within the university system: how can we respond to society’s unrelenting need for vocational training, adapting and reforming our organisational and working methods to meet the needs of modern reality without losing our orientation towards general education and the meta-professional goals that this can inspire?

Basically, through this problematic relationship with society, universities experience the hedgehog dilemma. We know that, during cold weather, hedgehogs seek to become close to one another in order to share their body heat – not too close, however, to avoid hurting one another with their sharp quills. The problem is finding the optimum distance and this is a task that the universities have to carry out in solitude, solely assisted by their own perception of the future and by their inner coherence.

## **Prospective education**

Scientific research is the cradle of the new disciplines. It is the window open on the future through which universities investigate the world round the corner, trying to get information on the possible upcoming educational needs of society. Universities have been successful whenever they have anticipated the new educational needs of the society, but this pro-active outlook implies an everyday familiarity with the long-term research.

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<sup>3</sup> Edgar Morin, *De la réforme de l’Université*.



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It follows that institutions only devoted to teaching run the risk of remaining disconnected with respect to the advancement of science and, consequently, of mechanically repeating a formula conceived elsewhere, without capturing its real meaning and so without being able to fit it into the concrete social situation in which they are operating.

### **The third mission**

A further argument in favour of maintaining a tight connection between education and research comes from the new responsibilities that the pressure for innovation has assigned to universities: among them, knowledge transfer – the so-called *third mission* – which requires special communication skills together with a first-hand mastery of the subject, mainly when knowledge transfer is addressed to SMIs.

It too often happens, for example, that, due to a rough knowledge of the scientific scenario relating to a specific subject, some permanent educational initiatives or knowledge-transfer attempts are set up in the absence of a rigorous design procedure aimed at guaranteeing the most cooperative match between contents and communication tools.

### **Need of creativity**

Finally, I would like to offer a special reason, quite new in the historical evolution of universities, which further reinforces the link between education and research.

The global knowledge-based economy has imposed the conviction, practically as a tenet, that the ability to compete and prosper will depend less and less on trade in goods and services or on flows of capital and investment and increasingly on the ability to attract, retain and develop creative people. You will certainly have recognized these statements<sup>4</sup> by one of the main authors of current times, Richard Florida.

### **Safeguarding the Critical Spirit**

Continuous adaptation to the changing demands of a knowledge-based economy calls for the giving of a freer rein not only to creativity but also to flexibility, which is, in

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<sup>4</sup> Richard Florida, *Rise of the Creative Class*.



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fact, just an operative declination of the former. Universities know that, to a significant degree, even creativity can be cultivated and that one of the most fertile environments for this is the research community.

So, if the key element in global competition is shifting toward the competition for creative people, a unique role for traditional higher education institutions stands out, as creative innovation stems from a ground fertilized by critical thinking. Creativity finds its very roots in the practice of free and critical thinking which, in its turn, is the source itself of modern European thought: the awareness of the problematic nature of knowledge. Ortega y Gasset once said that *“science consists in substituting a knowledge, that appeared almost certain, with a theory: that is, with something problematic.”*

Young generations can be trained to think in a creative way, but this can only happen where creative thinking attempts on a daily basis to make out the world’s complexity, where creating hypotheses and then submitting them to the scrutiny of critical thinking is a natural habit and where, in short, free research is the top priority.



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## **New comers in the educational market**

Should we believe that this strategic task can be entrusted to corporate or virtual universities? Should we believe that virtual universities, with their intrinsic lack of dialogue with students, or that corporate universities, with their strong dependence on the job-related approach, will be able to give the sack to the traditional university? I think we may be allowed to doubt it.

Here are the reasons why these new actors on the educational scene are unlikely to dislodge the traditional universities, which will then be expected for a long time ahead to keep in the focus of an economy where knowledge is the main engine of growth.

## **The future of the traditional universities**

To protect the strategic resource of creativity, our society, already so largely controlled by the instrumental thought, must maintain its intellectual autonomy, its freedom of research, its awareness of the problematic nature of knowledge and the primacy of ethical over utilitarian reasoning: those things which are, as a whole, the true *raison d'être* of the university.

Is it a tough job? Admittedly, it is. But not impossible, however, let alone useless. No individual effort is useless, if it is true that, according to Paul Valéry, Sisyphus was actually only developing his muscles.<sup>5</sup>

We have to watch over our universities to avoid the risk that an excessive orientation towards business gradually deprives them of their long-term research projects, which would simply mean of the source of their identity and of the unique equipment necessary to recharge their cultural batteries and to conceive the prospective education we have token about.

The challenge we are facing today is to convince our researchers to refuse easy money coming from outside or badly-addressed research funding and to help them, on the other hand, to build real research projects with high and wide scope. This will help us making big steps ahead of the current state-of-art in each discipline.

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<sup>5</sup> Attributed to Paul Valéry but also to Roger Caillois.



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In summary, here universities are faced with a strategic challenge: not to swap university-type research for industry-type research. This does not mean that our Research Agendas should be constructed with no roots in reality, but neither does it mean that economic contingencies should be allowed to completely overwhelm our strategic choices.

In conclusion, it is a strategic goal to preserve a tight link between education and research – especially with the long-term one – in order to safeguard the historical and unique pro-active character of the university education, to protect the need of critical spirit in a society so prone to the homologation and to stimulate the creativity in the young generation as the most efficient antidote against the homologation threat.

We can not forget that this marriage has lasted for centuries and has been extraordinarily prolific, if is true that from the birth of the modern era to the present day, the majority of historical innovations have originated at universities. Some years ago, in an entertaining paradox, Hilary Putnam sated that even the battle of Stalingrad was really a clash between left-wing and right-wing Hegelians.

I am confident on the ability of universities to face up to these new challenges. Does this trust derive from an overestimation of the university merits? It may be, but then let me recall those Shakespeare's words, "*'tis an ill cook that cannot lick his own fingers*"<sup>6</sup>.

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<sup>6</sup> W. Shakespeare, *Romeo and Juliet*, IV,2.