

Synergies Between Humanities, Science and Technology: A Transformative Understanding of the Humanities in the Twenty-First Century

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The 7th GUNi Higher Education in the World Report, entitled *Humanities and Higher Education: Synergies between Science, Technology and Humanities*, was launched in December 2019. It represented a two-year effort of 130 authors from thirty countries all over the world aimed at providing the academic community, policy makers and decision makers within higher education and wider society with a comprehensive analysis of the interrelations between humanities – as one of the key definers of the human condition – science and technology in higher education, as well as to offer some recommendations, guidelines and examples of good practices from different higher education communities, countries, regions and cultures.

The humanities are one of the key definers of the human condition, and they are in constant interaction with science and technology. It is not possible to conceive of the humanities as detached from science and technology, in the same way that it is not possible to conceive of science and technology as untied from the humanities, as all of them are part of human beings' activities. As a biological species, this is the main point distinguishing us from the nature of other animals. Clear proof that the humanities are key definers of the human condition is that they have been developed in one way or another by all human cultures and societies since antiquity, as a product of the reflexive and rational capacity of human beings and their need to understand and organise the environment in which they live. However, despite the fact that it is apparently much simpler to define the aims of science and technology as well as classify the distinct disciplines they include, the humanities are made up of a much more heterogeneous set of knowledge studying and reflecting the human condition in social, cultural and artistic terms, so their exact definition is complex. Moreover, which particular disciplines are included – such as philosophy, language, literature, history, human geography, cultural anthropology, law, politics, religion and all forms of the arts (visual, musical and performing), among others – is discussed.

A growing concern about the perception of the usefulness and need for the humanities today, especially in higher education systems, is becoming more and more evident. However, the humanities are, or should be, in interaction with science and technology, as products of the human mind contributing, or having to contribute, to human welfare. For this reason, this issue has not been addressed in an *endogamic* manner from the humanities themselves, as such analyses would not be helpful to progress and would only leave us stuck in the same situation, but also from the synergetic relationship with the other fields of knowledge, especially science and technology; and, with a very special focus on human 'cultures', in the plural, deliberately avoiding views from centralism and

cultural neo-colonialism. This is the only way to gain a clear picture of the current tensions and future challenges. Such an analysis is indispensable in a society that is increasingly more globalised and inter-, multi-, pluri- and transculturalised; although it will always be incomplete, given the immense cultural, social and, by extension, humanistic diversity.

Concern for the current and future state of the humanities often leads to positions that shift between two extremes: the catastrophic and the protectionist views, which are often exaggerated. There are sectors of society which foresee the end of the humanities in the imminent future. Others are committed to preserving them in a protectionist way. What we propose, as do many other sectors, is working for their reappraisal and transformation from a dynamical and holistic point of view. Protectionist and often nostalgic views tend to focus on defending and preserving the institutional and academic space and the epistemological division, whereby the knowledge that we have traditionally considered to pertain to the humanities is considered separate from other fields of knowledge. The catastrophic vision, on the other hand, puts the focus on what is being lost and warns of its ethical, political, social and cultural consequences, which directly affect social development, including the perception of society itself, relationships with other societies and the natural environment, and even between its members and with its own self. As science and technology are more goal-directed to knowing nature and solving problems, the end of humanism is directly associated with the loss of critical spirit, and hence with the loss of democratic quality or with a democracy under threat, and with a present in which a rise in authoritarian, dogmatic and even posthuman tendencies has been detected.

To avoid both protectionism and catastrophism, the two keywords that best describe our proposal are *reappraisal* and *transformation* within the aforementioned parameters of the interrelation with science and technology as elements that are also inseparable from the human condition, and avoiding the worldviews of cultural neo-colonialism. Many of the problems that affect the humanities are not exclusive to these disciplines. Hence the need to integrate perspectives and combine efforts and reflections to reappraise today's challenges in terms of research, teaching, the socialisation of knowledge and social commitment within the global university system. Thus, the humanities are seen as a series of dynamic and constantly changing activities that are part of the dispute and the production of meaning in our time, in reciprocal permeability with all other fields of knowledge, including, and very especially, science and technology.

Diagnosis

Our world and our societies are experiencing profound changes with important consequences for our futures. These changes are presenting transcendental challenges in terms of thinking and rethinking the meaning and value of human experience – and even of what it means to be human, as individuals and in relation to other people and with nature, now and in the future – and so we need to reflect critically and rationally, including from the perspective of human emotionality. The humanities, together with the sciences and technological innovations, must necessarily play their part as both drivers and critics within the framework of these transformations. Three main types of changes have been identified: (1) those related to environmental and climate issues; (2) those connected to scientific advances and technological developments; and (3) those associated with cultural and social aspects.

Environmental and Climate Issues

Environmental and climate issues radically call into question our relationship with the environment, in a single and shared biosphere, and therefore affect what we mean by 'life', including its development and even survival. The Western, scientific, technological and humanist tradition, which was exported around the world during the European colonialist era, has traditionally tended to trace a very clear border between human beings and the rest of nature, based on the view that nature was 'created' for the use and enjoyment of people. The theocentrism of the Middle Ages produced anthropocentrism, but the human experience is actually closely linked to its surroundings and the reciprocal relations established therein, and this has since led to the emergence of ecocentrism.

These are not the only cultural traditions to adopt that trend, but today's financial systems – not just capitalism but most especially liberalism and neoliberalism in any of its forms, as well as state-based collectivist systems – have appropriated it and exported it practically all around the world. However, the advances of recent decades in so many apparently diverse but interlinked fields, such as ecology, genetics, neuroscience, chemistry and physics, among others, and the growth of new philosophical and humanist schools of thought, especially but not only what are generically dubbed the 'Environmental Humanities', are producing a turning point in the conception of the relationship between people and nature. However, these new, heterogeneous conceptions are meeting major resistance from, on the one hand, social and cultural inertia due to customs and preconceptions and, on the other hand, the predominant political, economic and socio-cultural interests of the establishment. And also because of the biological imprint of the way the human brain works, which is more attentive to emotional inputs and responses than to rationality, making us more likely to make emotional rather than prudently calculated decisions, and which tend to be more grounded on individualistic or group immediacy and the pre-established actions of inherited customs than on long-term global reflection.

Scientific Advances and Technological Developments

Scientific advances and technological developments are having such a fast-moving effect on our lives, especially but not only those raised by the implications of digital transformation and advances in biomedicine and health care. The first factor of change, the digital revolution, is and will be decisive in most aspects of our lives, in the short, medium and long term. Having now been assimilated as an indisputable and irreversible reality, this universal presence of highly interconnected data, processes and devices in constant feedback with each other has only just begun and is already almost naturally ingrained in our younger generations. The repercussions in terms of everyday operations, the way we communicate and our privacy, to mention only a few of the many factors that will all undoubtedly be affected by or possibly affect the very concept of human dignity and experience, are having an impact that is unpredictable at this moment in time.

These issues require permanent debate, education and critical information and the adoption of measures to protect people from the many derived threats, beyond the obvious benefits that can also be deduced. Regarding the transformation or improvement of the living and survival conditions of human beings – partly also driven by the digital revolution, genomic research, personalised medicine and regenerative medicine, to cite just a few examples – there is need for a delicate and complex process of reflection on their scope, deployment and implications for ways of life, longevity, values, ethics and the defi-

nition of the very 'identity' of individuals, robots or cyborgs, with clear individual, social and planetary repercussions.

Further, the connection of science and technology with the economy – and the implications for politics, the media, power mechanisms and the socialisation of knowledge itself and of new technologies, i.e., ultimately for human beings' capacity for self-determination, for democracy and for people's freedom – compels us to synergistically resituate other areas of knowledge, such as the social sciences and humanities, at the heart of discourse and decision making.

Cultural and Social Aspects

Cultural and social aspects affect a global, postcolonial world which is highly interconnected but at the same time very fragmented and unequal. Humanism, as an ideological and cultural core of the humanities, is linked to the history of Eurocentric and patriarchal imperialism. Thus, the humanism that lies behind modern-day human sciences and political institutions is based on the way it is conceived by male, white, middle-class Europeans, and is imposed as hegemonic to every creed of human being, inside and outside of the geographic setting where it originated, and of which there have been many variants throughout the course of history in other geographic and cultural spheres.

However, in recent years, academic thought has shifted towards a critical view of this hegemony, especially in countries linked to a colonial past, and this is something that appraisal and transformation of the humanities must reflect, offering a rich and indispensable range of criticisms from the standpoints of gender, ethnicity, culture, politics, economic relations, and more. The question that we need to ask today, however, should look beyond these essential positions: If humanism has become a kind of imperialism or has been exploited by imperialism, can this be stopped? And what would its 'being stopped' actually mean? Or do we have no choice but to rid ourselves completely of the whole humanist legacy as it has been conceived until now, as techno-capitalism has already started to do with its so-called 'Fourth Industrial Revolution'?

However, the need for criticism of historic humanism and its universal models is not believed to erase our ability to associate ourselves with the shared background of human experience, which does not, in fact, date back to a single model. It is not a case of the Vitruvian Man or any other such abstraction, or of the cultural corpus of so-called dead white men. Human experience is our ability to share the fundamental experiences of life, which are transversal in all societies and cultures, such as death, love, friendship, commitment and collaboration, and also individualism, fear, sense of dignity and justice, care, and so on. A propositional analysis like this must therefore be appraised and taken into account.

Humanism and the European cultural legacy as a whole have not to be denied, but also need to be put in their place, i.e., in one place among others in the common destiny of humanity. This also implies the need to explore each other's legacies. It is not a question of continuing with the idea of juxtaposing cultures that the multicultural model has already exhausted, as a way to neutralise diversity and its tensions and reciprocities. Instead, it is more a case of taking a receptive, attentive role, including not only cultural otherness but also the tension and antagonism between ways of life, within the shared framework of human rights.

These are not sectorial changes. They are major transformations that affect the very meaning of what we mean by 'human' in relation to society or to societies and the life of

the planet as a whole. From these three clearly interrelated axes of change, the humanities have not to be conceived as a set of disciplines to preserve or conserve, but as a set of utilitarian and applicable activities, that we must continue to cultivate through relevant research, with goals and models as necessary and appropriate for tackling new challenges, in interrelation with other human knowledges contributing to humankind advances, i.e., science and technology. And this is in the good understanding that they are indispensable, for it is on them that the capacity to make sense and value out of human experience depends, especially in times of change, and this needs to be done in commitment to dignity, equality and the reciprocity of these values.

Epistemological, Cultural and Philosophical Considerations

We are the heirs of a dualised and disciplined culture. Over the course of the last two centuries, probably driven by the particularities and specificities of the methods and objectives of scientific research and technological and humanistic development, 'scientific and technological' activity have been split apart from 'humanistic' activity, and education has been organised on the strict basis of this partition. For decades, several authors (C. P. Snow, I. Prigogine, I. Stengers, E. O. Wilson, F. Fernández Buey, etc.) have warned of the problems derived from this epistemological situation. Its effects are felt in all fields, as the humanities and the sciences tend to ignore, and sometimes even reject, each other, and are consequently impoverished. If making advances in an epistemology based on common problems and shared solutions in which all angles of human knowledge are involved is wanted, as opposed to disciplinary compartmentalisation, the first thing we need to address and discuss is the curricular and disciplinary organisation of our primary, secondary and higher education institutions.

Different programmes for educational change are already under way, but they tend to focus more on didactic methodologies than on epistemological change, which is a more profound and hence also more complex affair. It is very hard to imagine an integrated university system, where problems are tackled from different practices and languages, if our starting point is a kind of education in which children's familiarity with different types of language ends before the age of sixteen. When the general social perception is that the humanities 'are of no use for anything' or that the sciences are 'too technical' and 'have no concern for society's problems', or that the arts imagined in their broad sense (visual, musical and performing) are 'mere entertainment', these are the symptoms of a division that neutralises every area of knowledge and produces highly restricted perspectives of their potential.

In this context, treating the humanities in relation to science and technology means, first of all, imagining other configurations of the relationships between fields of knowledge. It is not a case of linking them as separate realities, but of precisely questioning their strict Cartesian separation, and of working specifically to reverse the process from the foundations. This implies going beyond the paradigm of inter- and transdisciplinarity. What we need to do today is not only to cross or join disciplines, but also to redefine their separation and search for synergies. In other words, the knowledge map must be redrawn, not to mix areas, but to allow and facilitate their indispensable synergies, and encourage them to flourish.

What is needed is a knowledge ecosystem where the connections between languages and knowledge, and between the questions and practices of knowledge, are living and dynamic, respectful and cooperative, without depending on new branches that only reach

in a single direction. This epistemological challenge, namely to turn academic disciplines into a living ecosystem of knowledge without them losing their functional and research specificities, has many concrete implications: (1) redefinition of the vision, mission and goals of the respective institutions; (2) comparative work based on existing models or models that are undergoing experimentation in different countries or socio-cultural environments; and (3) overcoming the obstacle of the specialisation and sectorisation of 'scientific-technological' and 'humanistic-artistic' languages in order to conceive collective, reciprocal work processes.

The humanities are nothing in themselves if we do not put their different activities and ways of teaching and learning in relation to the current limits of the humanist tradition and their future challenges. Right now, the strongest philosophical, aesthetic, technological and other schools of thought have made a stand either for or against humanism. Higher education must find ways to gather and trigger these discussions in the field of teaching and scientific research, beyond its circles of specialists. It is not just about having knowledge of them, but also of being able to spark discussion on the ethical, social and political consequences of these issues in academic spheres, together with their legal, scientific, technical and economic implications.

The humanities in general and philosophy in particular must acquire the capacity and also the will to welcome the advances that science and its present methods can contribute, for example through knowledge of the way the brain works with regard to such topics as ethics, empathy, tribalism, and others. Other technological issues such as robotics and artificial intelligence, or increased human capacities, condition and must be reflected in the future of philosophy and humanistic thinking.

Political and Economic Considerations

The political systems of each country, the legacy of their own traditions or those born out of revolution, are a fundamental element when it comes to evaluating the state of the humanities in their education systems. To a large extent, laws on education and in the field of culture condition the day-to-day work of teachers, creators and researchers. It is not just a problem of public funding, but also one of orientation and goals, and of political priorities and institutional appraisal, which could range from curricular affairs to aspects of operations and promotion.

A fundamental question that needs to be posed is what kind of culture does each country want in the global context, on the understanding that the response and the way this is done will depend on social, political and economic development, and consequently also the individual development of its members, including those related to other cultural, political and economic models, and with the natural environment. In the struggle between democracy and dictatorships of the twentieth century, for example, the humanities played a role in creating more democratic subjects (critical, thoughtful and willing to enter dialogue) or otherwise more obedient (dogmatic) subjects. This role is also still very much apparent today. It was also evident in the tension between communism and capitalism, which was played out as a major cultural battle. And it is also the case with the current clash between the liberal and social economy, the unlimited spending of resources and sustainability, homogenising or integrating globalisation, and so on.

Right now, in political and economic terms, but in close interaction with the environment and education, we are faced by a global scenario that involves three major issues: (1) the birth or return of authoritarianism, in old and new forms; (2) the multifaceted

and widespread nature of war, and (3) the climate emergency as a factor that is questioning the world's entire financial and production system. All this, moreover, is shrouded by the growing difficulty of distinguishing between truthful and proven information – always with an element of subjectivity depending on who is transmitting this information, but that is nonetheless essentially verifiable – and ‘fake news’, which so quickly spreads across global social networks. Some laws on education and culture only seem to attribute the humanities a testimonial and apparently ever-more residual role. Others, however, treat the humanities as a corrector or firewall against the evil that is so irretrievably caused from other sectors and practices. However, beyond these two opposing extremes, the humanities must be neither a residual heritage that needs to be protected, nor a drug or a remedy to counter the devastating effects of other areas of society. On the contrary, the humanities must be part of making sense of human existence and our shared experience and, therefore, of the political and social lives of contemporary societies, within them, between them and in their relationship with the natural environment.

One of the many aspects to be taken into account in the cultural development and advancement of societies is the socialisation of knowledge at all levels: humanistic, artistic, scientific and technological. It is not easy for the members of a society to have a say in equal rights or to be able to make decisions that affect the whole – such as, for example, those related to reducing the impact of climate change or that have to do with ethical issues, such as the use of big data or the application of genetic biomedicine – if they do not understand the basic scientific and technological facts and their humanist connotations, or at least have access to the right kind of knowledge, to assess for themselves the implications and consequences. Most advances in all fields of humanistic and scientific knowledge happen within academic institutions or through people who are directly linked to them, in the same way that art tends to move in certain cultural circles and technological progress is the main driver of industry. In the former case, for example, scientific advances are also communicated via academia, which has very well-established rules to guarantee the originality and reliability of those advances, including the use of technical language that avoids ambiguities but is also unfamiliar to anyone who is not a specialist in that particular field. What is more, use of these communication channels has traditionally been limited almost exclusively to the members of academia, given their highly technical nature and the fact they must be paid for.

In this regard there are two very important processes of change that need to be considered: the fundamental role of scientific, humanistic, artistic and technological divulgation and dissemination; and the method for academic communication of findings, which is shifting from a closed system, one that due to the high costs can almost only be accessed by the members of academia, to an Open Science model, whereby findings in any field of knowledge, including publications, data, software, and so forth, and their dissemination, are accessible at all levels of amateur or professional research.

Regarding economic issues, in any debate or analysis of the humanities, the issue of funding is almost always a central one. The public system for funding the humanities and culture has been developed in the most prosperous Western societies over the course of the last century through the public education system and a cultural system based on museums, libraries, academies, auditoriums, and so forth, as well as through the promotion of the activities associated to them (publishing, artistic production, exhibitions, subsidies, etc.), although there are other ideologies of a more neoliberal nature where it is felt that at least some cultural manifestations should be self-sustaining.

There are many questions to ask on this matter, all of them necessary, but also difficult to answer, if the aim is to recover the value of the humanities and research on humanistic matters for human experience, and also in relation to advances in science and technology. For example, when it is commonly stated that the humanities are not profitable enough, what is really being said? What exactly is this referring to? For whom and in terms of what parameters of profitability? Are there other parameters? Are there other economic models for the promotion of the humanities? Indeed, there is a current of authors who have prioritised the defence of the non-profitable or useless nature of humanistic knowledge. However, how far can this duality between what is 'profitable' and what is not be maintained in mercantile terms? By comparison, how much science is profitable and in which of its aspects? This is also a highly controversial point in terms of the basic scientific research that is mainly done at public centres with public funding.

In many economic and political systems, science is very much funded through public resources, on the understanding that at least some aspects of that research may be applicable in the future. In other systems, much of the basic scientific research is funded through public or private foundations that are financially supported by private donations. In all cases, however, in order to be granted funding, applicants are asked to reflect on possible future applications and also, and this is a very important point, on the socialisation of this knowledge, through dissemination, and how it might end up having a favourable affect in one way or another on social development. In the context of the humanities, we therefore need to redefine the concept of 'profit'.

Based on all this, considering the humanities to be 'unprofitable' means having a highly limited perspective of the bonds between universities and the socio-economic system that surrounds them and finances them, and reflects a Cartesian system that is exclusive in the way that it classifies scientific-technological and humanistic aspects. If the humanities are to be part of the fabric of higher education and interact dynamically and synergistically with other fields of knowledge, the concept of profitability takes on a new dimension. Indeed, the interdisciplinary component of potential workplaces will play a central role in the humanities, which will lend meaning and content to many new kinds of activities, both professional and those focused on culture and leisure, all of them necessary for a dignified and dignifying life.

Social and Environmental Considerations

The way in which the humanities are taught, shared and disseminated has much to do with the cultural idiosyncrasy of each society, including religious factors, with their history and with the relationships they establish and have established with other peoples, with their types of economy, with the environmental needs around them, and also with any possible social and gender inequalities, both locally and globally. Access to culture or cultures in general has always been a factor of social exclusion or inclusion and of the way societies are shaped, including the relationships between their members (equality, hierarchy, exclusion in certain areas, and so on). But beyond this, the different relationships that can be established when it comes to critical tools and individual and collective autonomy are the main elements that contribute to a fairer and more egalitarian society. We live in a world and in societies where inequalities have always existed on every level – socio-cultural, economic, gender inequalities, and so forth.

Although some of these inequalities have gradually been quelled, as in the case of the abolition of slavery, the path towards gender equality and different family units, universal

education and health care and so on, the fact is that there is still major variability between cultures and different political and social systems, and this has become especially apparent in terms of access to information and globalisation. However, globalisation fosters other types of inequalities, not only between people in the same territory but also between territories, which can lead to neo-colonial situations. And given how easily it can be distributed, information (which can also generate 'fake news') can also help to boost or hinder the processes of achieving equalities.

Despite all this, or perhaps because of all this, there is also the perception of new and growing inequalities, such as new and old forms of illiteracy (humanistic illiteracy, scientific illiteracy, technological illiteracy, digital illiteracy), which can increase the social vulnerability of certain schoolchildren. Likewise, the mobility of global populations, through massive and rapid migrations, and which is often the result of those inequalities, but which far from solving them instead often increases them, often makes this situation even more linguistically, culturally, socially, politically and legally complex. If the humanities are about the way we shape and make sense of the human experience in terms of dignity, both individually and most especially in a collective sense, then it is essential for them to include an assessment of the current conditions for equality.

In this regard there is a need for the humanities to analyse the very concept of 'equality', to prevent it from becoming contradictory to our commitment to diversity and reciprocity between cultures and ways of life. The extent to which technology, and especially communications, can help ensure that this concept of equality does not contradict diversity or reciprocity, and make sure that it does not work in the opposite direction through, for example, fake news, has also to be analysed by the humanities. Similarly, knowledge of the scientific method as a means to acquire knowledge, which by definition excludes the concept of authority whereby one discovery or theory prevails over any others that might be contradictory, can help us on the path towards human equality and dignity, while maintaining diversity and reciprocity between cultures and ways of life.

Advances in various scientific disciplines such as ecology, genetics, neuroscience, chemistry and physics, among others, and new philosophical and humanistic ideas other than what are generically known as environmental humanities, were a turning point in our conception of the relationship between people and nature, albeit against strong resistance from the prevailing political, economic and socio-cultural preconceptions and interests.

Educational and Institutional Considerations

In general, education systems in much of the modern world, especially in secondary school and higher education, have a globalised tendency to prioritise the resolute, adaptive and competitive aspects of learning, with a growing vocational focus. This has even affected the way we work in humanities departments, adapting all knowledge and research activities to goals, methodologies and (currently digital) instruments that are often based on criteria alien to the activity's own needs. The problem-solving and critical questioning involved in humanistic activity, which seeks to trigger the critical, evaluative and creative dimensions of the relationships between what we do, what we learn and what we know, are sidelined from education at too young an age.

In a relatively similar fashion, there is often a tendency in science to try to explain scientific knowledge and theories in a finalistic manner, to solve specific problems rather than employ dynamic processes involving the gradual and critical extension of knowledge, which is often obtained *per se*. And these require the application of the scientific method

in some of its forms, such as experimental or the hypothetical-deductive, and of reflection, also as procedures to predict and prevent problems.

On an educational level, all learning, whether of concepts (regardless of whether these are humanistic, scientific or technological), of skills (procedural learning) or of attitudes (inclusiveness, respect, critical and reflective assessment situations, dialogue-seeking to resolve conflicts, empowerment of one's own life history, etc.), is stored as memories in the brain in the form of patterns of neural connections. An education that synergistically and harmoniously integrates the humanities and science through thought, reasoning and emotions will help to generate more plural and pensive human minds. If education stops teaching students to think and evaluate what we do and what we know by themselves and with others, and focuses only on the zoom without a wide-angle view, it is no longer education and instead becomes schooling, programming or indoctrination. Thus, one of the key questions which we need to ask is what curricula favour this dimension of learning brings, and how education methodologies should be focused in order to promote cross-cutting knowledge and growth.

At the institutional level, there is a general feeling of the regression or residualisation of humanities departments at many universities and higher education centres around the world, as well as humanistic approaches in other areas, which are viewed as accessories or optional. In many countries, a shift or transfer of humanistic activities has been observed. While the humanities are leaving universities, they are spreading into other types of cultural entity or institution. Similarly, there is also an excessive mood of mercantilist technical professionalisation in the scientific and technological departments of many universities and higher education centres, which puts limits on a more global vision.

One of the issues to be resolved is the assessment of multi-/inter-/transdisciplinary research. In terms of academic and research policies, this kind of research is held in increasingly high esteem at the conceptual level. Indeed, mankind's greatest advances, in any area, usually happen in the borderlands between disciplines, where the weaknesses of one become the strengths of the other, and vice versa. However, in order to apply for funding, to stand for academic positions or even to justify the curriculum, the system is cordoned off into impermeable areas of knowledge that work in the opposite direction, i.e., they clearly foster monothematic specialisation above transversality.

Education centres are responding in a variety of different ways. Some simply react by inertia or mimicry, depending on the setting and what leading education institutions are doing in their respective fields. Others respond with the utmost immediacy, for example by creating degree courses that are very tightly bound to the needs of the labour market. The current tendency to specialisation from the first year, and to the continuous creation of master's degrees in line with scientific and technological trends as they appear, does not help to build bridges, although some of these courses do pool these areas, as in the cases of bioengineering or studies that combine environmental issues with social and territorial planning. Many science, engineering and architecture courses, for example, have made major efforts to progressively introduce aspects related initially with ecology and then with sustainability, and more recently with values and ethics in the research and exercise of professions. Clarification of the missions and visions of universities, along with the creation of codes of ethics in different university activities, has helped to change the flat and, apparently, neutral scenario of science and work at university in general.

What would be the most appropriate science and education policies to integrate the humanities, science and technology into higher education systems nationwide, and what success stories could be used as benchmarks, is a crucial issue to be analysed critically.

Thus, analysis and reflection on the kind of future we all want for society should guide us in the exploration and implementation of a higher education that, without losing the necessary specialisation, opens its horizons towards the synergies offered by different fields of knowledge. This chapter hopes to contribute to that.

Proposals

The shared questioning that has come out of the 7th GUNi Higher Education in the World Report, entitled *Humanities and Higher Education: Synergies between Science, Technology and Humanities*, has led to three general considerations that merit being emphasised. First, that in most of the opinions gathered the humanities are no longer viewed only as a series of disciplines but as a way of addressing and understanding human experience in all its manifestations. Their existence and focus conditions the conception of the general paradigm of knowledge that we are developing in other areas and disciplines of knowledge. So, it is not a case of working out how we can keep a place for subjects like literature, history, philosophy, art, and so forth, but of how we can guarantee and accompany sufficiently consistent education in all these fields, and how this can have an impact on the knowledge system as a whole.

This means, secondly, that the question of the place of the humanities in the system has led us to the need to rethink everything. This means that the report, as a whole, may sometimes have too abstract or general a tone. We should make it clear that this is not because we have avoided being too specific, but because the specific problems we face today have to do with the rules of play that are determining the global higher education system as a whole. Changing just one part is the start of changing everything.

Thirdly, despite the differences in local political, cultural, economic and other contexts, the higher education system appears to be far more similar around the world than we thought, both in terms of its problems and of the solutions being tested. This is something we have seen as the different contributions arrived and which is reaffirmed when the full report is read, to quite a startling extent. This speaks to us of a system that despite being institutionally heterogeneous, nationally diverse and economically very unequal, is today a global system in which changes spread very quickly and have an immediate effect on the specific ways in which each place works. The danger of this is that any trend soon becomes strong and apparently irreversible. The positive side of this is that if we properly coordinate the focus of critical debate and its follow-up, then the drive for major change will also catch on quickly.