

Editorial: *Education and Communications within the Circular Economy, the Internet of Things, and the Third Industrial Revolution. Challenges ahead the “Competency based”*

Education Model

It is well-known that education means life and civilization transmission, and in today's global economy a high-quality education is a prerequisite to success, because economic progress and educational achievement are inextricably linked. The economic higher education is truly challenged by designing effective educational experiences and preparing students accordingly to adapt to the fast changing information environment thanks to a more responsive, integrated, engaged and innovative approach ensuring the adequate skills and mentality. On the other hand, let us remember two noteworthy assumptions (which admittedly simplify the socioeconomic complexities and uncertainties) underlined in June 2009 by McKinsey & Company's representatives: “*educational achievement and attainment... are key drivers in hiring and are positively correlated with earnings; and labor markets will hire available workers with higher skills and education*”.ⁱ

In 2010 the new formed “*Ellen MacArthur Foundation*” (supported by a group of “Global Partners”: Kingfisher, Cisco, Philips, Unilever and Renault)ⁱⁱ stated the belief that: “*the circular economy provides a coherent framework for systems level re-design and as such offers us an opportunity to harness innovation and creativity to enable a positive, restorative economy.*” The overall project management was provided by McKinsey & Company, which developed the fact base and delivered the analytics for the “*Towards the Circular Economy*” reports that quantify the economic benefits of circular business models, and lay out pathways for action. According to McKinsey experts,ⁱⁱⁱ that world of the “take, make, and dispose” model of production (which has long relied on cheap resources in order to maintain growth and stability) ceased to exist. And the circular economy, as a regenerative economic model, would benefit business and society by restoring material, energy, and labor inputs and creating more value while breaking ingrained habits and eradicating waste throughout the various life cycles and uses of products and their components.

In March 2010, McKinsey's Michael Chui, Markus Löffler, and Roger Roberts stated^{iv} that now is the time for executives across all industries to structure their thoughts about the potential impact and opportunities likely to emerge from the *Internet of Things* (defined by Gartner as *the network of physical objects that contain embedded technology to communicate and interact with their internal states or the external environment*), highlighting the six distinct types of emerging applications which fall in two broad categories: information and analysis (*tracking behavior, enhanced situational awareness, sensor-driven decision analytics*); automation and control (*process optimization, optimized resource consumption, complex autonomous systems*). McKinsey's representatives showed that these big changes in information

patterns will have implications within companies, for organizational structures, and the way decisions are made, operations are managed, and processes are conceived.

Two years later, in March 2012, Jeremy Rifkin^v argued that: we are about to create a new economic paradigm that can completely reorient the way we think about business, the greatest economic revolution (a third industrial revolution, which is scaled, the European Union undertook, for example, to achieve a five-pillar infrastructure for this third revolution: renewable energy mandated, collection of energy in buildings, storage, a nervous system for the third industrial revolution, infrastructure for a new economy); can occur when a new energy revolution converge with a new revolution of communication (communication via Internet revolution is distributive, collaborative and creates side power); when the two revolutions merge, they can change the economic paradigm and even consciousness (due to the transition from ideological thinking to therapeutic thinking); in the last twenty-five years, we witnessed a very powerful communication revolution involving the personal computer and the Internet, hundreds of universities began to create programs that bring together different schools, with campuses already creating infrastructure of the third industrial revolution; we are all connected and there is an awareness of the biosphere; young people are thinking systemically.

In May 2013, Mathew Taylor^{vi} observes that in modern society the most effective model for change will involve defining leaders defining purposes that inspire, using means which achieved these goals by aligning with individual choices, with processes of change, being humanized by a culture which resonates with solidarity and mutual obligation. Taylor even resorted to a mechanical metaphor: the hierarchy sets the direction, individualism provides the engine and solidarity is offering the oil. Because, however, *beyond the dominant traditional ideas in education over the last fifteen - twenty years* (“national standards”, “freedom, diversity and competition in school”, necessary parts of the improvement engine, there is a clear need for collaboration. And when it comes to collaboration (which must allow more ambitious and progressive goals), *it is not what you do but how you do in order to get results*.

In June 2013, Markus Löffler and Andreas Tschiesner reconfirmed that the physical world is becoming a type of information system, and argued that in order to drive development *two competencies* must come together: “using what’s truly new about new technologies and finding people who can design robust algorithms to make the system user-friendly”. They also showed that a decisive role in new operating models will be played by the supply-chain integration, being essential to completely integrate all relevant information into the supply-chain.^{vii} A month later, on July 31, *Gartner* (the world’s leading information technology research and advisory company, founded in 1979 and headquartered in Stamford, Connecticut, USA^{viii}) stated that much of the differentiation and value of the *Internet of Things*^{ix} resides in the *data aggregation, data-processing and decision-making activities that take advantage of the data streams emanating from the device* (or the ability to remotely influence that device).

On October 2, 2013, Steven C. Ward, Professor of Sociology at Western Connecticut State University, USA (and author of the book “*Neoliberalism and the Global Restructuring of Knowledge and Education*”, Routledge Advances in Sociology, December 22, 2011), wrote a

challenging article entitled: “*A Machiavellian Guide to Destroying Public Universities in 12 Easy Steps*”^x. Professor Ward attracted our attention, for example, on the fact that “*spectacle and simulacrum trump substance*”, and on the effects of: << various “oversight instruments,” such as quality-assessment exercises, “outcome matrices,” or auditing mechanisms, to assure “transparency” and “accountability” to “stakeholders” >>; << “competency based” education model that allows students to bypass many of the traditional requirements of the university >>.

A month later, on November 16, 2013, Ronald W. Cox,^{xi} from Florida International University, while examining the politics and economics of the restructuring of public universities in the USA, highlighted that the marketization of university culture: “*encourages seeing students as consumers, and viewing the university brand through the prism of narrow market calculation; is evident everywhere on modern-day campuses, with a proliferation of corporate-university partnerships, corporate advertising, corporate underwriting of individual programs, and corporate or donor sponsorship of particular endowed chairs or faculty positions within particular sub-fields.*”

On Monday 3, March 2014, the *Times Higher Education* (THE), the United Kingdom’s leading publication in the field of higher education, brought to our attention another article of Professor Ward who “*imagines an Orwellian world of over-assessment*”.^{xii} In his subtle approach, Steven Ward is starting from the growing need for the universities to become more accountable to stakeholders, underlining the “solution” of expanding assessment beyond the usual areas of research and teaching into other areas of academic life...

THE also recommends the 11th annual higher education report published by the New Media Consortium (NMC) and produced in partnership with the EDUCAUSE Learning Initiative. The *NMC Horizon Report: 2014 Higher Education Edition*,^{xiii} officially launched on 3 February 2014, identified six “key trends” (growing ubiquity of social media; integration of online, hybrid, and collaborative learning; rise of data-driven learning and assessment; shift from students as consumers to students as creators; agile approaches to change; evolution of online learning) *that are accelerating the adoption of technology in higher education.*

It is known that the year 2013 marked two anniversaries with special historical resonance for higher economic education in Romania: celebration of 170 years since the pioneer of Romanian economics, Ion Ghica, delivered his first course of political economy; celebration of 100 years of economic institutionalization of higher education in Romania, the establishment of the Academy of High Commercial and Industrial Studies (AISCI), today the Bucharest Academy of Economic Studies. Within this remarkable academic historical framework hosted in November 2013 by the Aula Magna of the Bucharest University of Economic Studies, the **Association of Faculties of Economics in Romania, AFER**, launched the Volume with a great theme: “***Pages from the Romanian Economic Higher Education History, 1843-2013***”. This anniversary Volume expressed not only the true qualitative teamwork at the level of AFER, but also the fact that AFER: is a powerful forum for discussion of specific problems, identifying best practices in academic education and research dedicated to promoting national and international reference standards for higher economic education in Romania; has shown consistently strong

focus on providing graduates with updated knowledge and practical skills required in the modern workplace, and a framework for their continued development; has constantly stimulated the critical and creative thinking, the ability to find, to access, to evaluate and to use information in order to solve complex problems faced by entrepreneurs aware of the implications of the actions initiated and of the complex decisions in a competitive business environment specific to the relevant markets at the confluence of globalization and integration; is already proving a growing culture of assessment and measurement in education, research and innovation, putting a new emphasis on the economic contribution of higher education to economic and social life and the need to work multidisciplinary, interdisciplinary and trans disciplinary. We can state that after 10 years of active and responsible involvement of AFER we are in the situation of a growing culture of assessment and measurement in higher economic education, research and innovation in Romania, with a new emphasis on the economic contribution of higher education to economic and social life and the need to work in a multidisciplinary, interdisciplinary and transdisciplinary way.

As a member of the team that prepared, 14 years ago, the volume “*History of National Economy*” (vol. II)^{xiv}, having the pleasure of working with distinguished representatives of higher economic education in my country (and more recently, in 2011, having again this honor when preparing the volume “*Great European Economists*” indexed both in HOLLIS Classic catalogue of the Harvard University library, no. 013221078, and Chicago University library, no. 8838201: <http://lens.lib.uchicago.edu/?hrciid=%7Clibrary/marc/uc%7C8838201>),^{xv} and as a member of the team that prepared the Monograph “*Pages from the Romanian Economic Higher Education History, 1843-2013*”, it is my duty and honor to salute, in this context, the debate initiated at the level of the “platform” for an academic and civic dialog structured for a common understanding walking on the “***Path towards freedom. From sensory knowledge to trans-knowledge***”^{xvi} proposed – with wisdom, responsibility and commitment for the destiny of human society – by Professor Vasile Stănescu, Honorary Member of the Romanian Academy. As we walk on this road opened to everyone, management structures and organizational arrangements specific to economic higher education in our country allow natural contributions to the development of this „platform” for interdisciplinary, multidisciplinary and transdisciplinary dialogue, that also considers the following aspects: “*scientific research (superior form of socializing) is one of the determining factors of historical development, of the transition from industrial civilization to invisible civilization; the major paradox that dominates human society, putting face to face the amazing achievements of science with today ‘s state of the world; economics, as a social science, comes from the reality lived in the social, from the social reality, of social life; the concept of human action assumes the determining role of human in a horizon of particular reality: economic dimension, characterized by economic values regarded as values-means in considering the fulfillment of goal values and final values, in order to satisfy social-human and environmental needs; the economic factor, after the natural one, has a very special role in what concerns human civilization; active role of economic policy as superstructural element to the economic base comes from the fact that economic policy works in all spheres of*

social reproduction; we are witnessing an integrative education, multidisciplinary and interdisciplinary, of trans valuation of sciences, characteristic that became a constant characteristic in the process of scientific research, trans valuation that configures as a feature of a new paradigm of contemporary science; profound changes in the economic base carry with them the seeds of superstructural change (ideological, political, legal, philosophical) ... capitalism... recording a new phase, integrated, transnational and of consume, which drives the whole planet; interdisciplinarity, continuous education, the curricula of university disciplines are in a continuous dependency and interference... the report between interdisciplinarity and Education must therefore be reconsidered; integrative approach – theoretical and methodological – at the level of disciplines becomes not only necessary but also compulsory; the activity of human society is carried out within a complexity of plans: politic, economic and social/civilizational and cultural-spiritual/cognitive and emotional/in an internal environment and an external one/ but also in a cosmic environment, where the fundamental rule is the conservation of the living, amid rationality, order and harmony; globalization no longer appears as a superior form of socializing and generalization of democracy, but a hybrid between centralization and decentralization, integration (mixing) and fragmentation, opulence and starvation, protectionism and exploitation, between mega-development and backwardness, trans-knowledge and sensory knowledge, cyberspace and abacus; we are projected by events, waking up trapped in a continuous tension, with the spectrum of risks that float above us and shattered illusions; the public expressed aggressiveness occupies almost integrally the public space, tends to become a general feature of this space, with reverberations in people's personal lives; mediocrity and corruption, indifference to the common interest, of the public good, is a direct attack to competitiveness, degradation of opportunities and resources, promotion of personal interests; competition has taken a dramatic end, the fight being carried out between values and interests; memory decreased considerably, as well as remembering the makers of history, ancestors, and of major cultural and spiritual values; we easily say good-bye to the past... ignoring the given time and place, laws of evolution, ignoring, in fact, our own history ; we cannot look towards the future without preserving, honoring and valuing the memory of the past, as the only way for continuation; **there is a need for strategies and policies in all fields of activity, of a high professionalism and profound morality, of the restoration of the axiological scale, of models and reconsidering values.**”

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