

## **Employability**

**Knowledge, Skills and Abilities  
for the "Glocal" World**

Edited by  
Fernando Salvetti, Michele La Rosa,  
Barbara Bertagni

*Writings by:*

Licia Allegretta, Davide Arcidiacono,  
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Emma Garavaglia, Silvia Ghiselli, Claudia Girotti,  
Luca Giustiniano, Lidia Greco, Emanuela Ingusci,  
Michele La Rosa, Aurora Luna Santos-Olmo,  
Alfonso Molina, Ivana Pais, Luca Pesenti,  
Fernando Salvetti, Sophie Salvetti, Chiara Succi,  
Daniele Zaccaria, Domenico Zungri

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What boosts a person's employability in today's networked, liquid and "glocal" world? We are experiencing increasingly global interconnections, associated with some growing local and localized differentiations, as well as living a continuing transformation organized around information technologies - that is changing the way we produce, consume, behave, manage, communicate and think.

In such a scenario, which are the key-competencies to be honed in order to foster our employability? How to empower people? Which education and training approaches are the most effective? Why e-REAL - Enhanced Reality Lab - is becoming a cornerstone?

The present volume is aimed at sharing paradigms, practices, case-studies and outputs from applied research.

**Fernando Salvetti**, a founder of LKN-Logosnet, deals with emerging scenarios and trends, international and cross-cultural communication, visual thinking, new media in education, immersive learning and e-experiences. He is known for his workshops where he advises professional and business people, as well as graduate and post-graduate students.

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# Employability. Knowledge, Skills and Abilities for the “Glocal” World: Foreword

*Fernando Salvetti\**, *Michele La Rosa\*\**, *Barbara Bertagni\*\*\**

Employability refers to a person’s capability for gaining and maintaining employment. So, it refers to a set of achievements – skills, know-how and personal attributes – that make people more likely to gain, or change, employment and to be successful in their chosen occupations, which benefits themselves, the workforce, the community and the economy. For individuals, employability depends on the knowledge, skills and abilities they possess. And it means the capacity and capability of gaining and maintaining productive work over the period of one’s working life. Employability also refers to contextual aspects relating to the institutional environment that the social actor is part of – and which the same has contributed to create.

Addressing the issue of employability means venturing into complex and transversal territory, one that involves a multiplicity of players and factors. In this volume, the point of reference is predominantly composed of knowledge, skills and abilities for the “glocal” world. Consequently, one of the keynotes is skills. One way to increase employability is to make room for (much) more work during training and (much) more training at work. Better still, by closely intertwining one with the other. Employability therefore has multiple dimensions which imply a close relationship between the individual and the collective sphere. Their interweaving allows for an analytic framework to be built, one that is characterized by

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the presence of a variety of elements. These elements refer to the social actor's personal characteristics – age, gender, level of qualifications, individual life paths, their career path to date, training and education – which are determinants in establishing his or hers potential in the job market – elements that nevertheless must be integrated with aspects of social origin, family, socioeconomic and cultural background.

What factors affect employability in the today's *networked* and “*glocal*” world? Information is becoming totally digitalized, and therefore interactive, transportable, accessible in many ways. The social and the working lives are becoming more and more *liquid*. We are experiencing increasingly global interconnections, associated with some increasingly local and localized differentiations, as well as living a continuing transformation organized around information technologies – that is changing the way we produce, consume, behave, manage, inform and think.

Dealing with employability requires pretty fluid categories to understand the versatile realities of the multiple worlds we live in. Integration and fragmentation, globalization and localization are complementary processes. The more the process of economic globalization deepens, the more the interpenetration of production and management networks expands across borders, and the links become closer between the conditions of the labour force in different countries – placed at different levels of wages and social protection (when existing) – but decreasingly distinct in terms of skills and know-how needed to preserve the employability. In brief, “*glocalization*” is the new world's disorder we've to deal with.

The technological and managerial transformation of labour, and of production's relationships, is among the main levers by which the “*glocal*”, *liquid* and *networked* world is affecting society at large and workers at pretty every level. In such a scenario, some competencies and capacities are very relevant in order to have employability aligned and fine-tuned with the labour world. Even if there is not a unified global labour market, highly skilled labour is taking the form of a “*glocal*” and interdependent market, though large masses of unskilled emigrants are showing the other side of the moon – quite dark.

What are the key-competencies and capacities to be honed in order to foster people's employability? – Language literacy (at least bilingual, better multilingual), interpersonal communication skills, information technology and math literacy and much more besides systems thinking, ability to deal with uncertainty and multiple information sources, proactivity, multitasking orientation, emotional and social intelligence. Last but not least, the ability to deal with diversity, cross-cultural sensitivity and openness – or some tolerance with the several forms of diversity that we're challenged to deal with in our *glocal*, *liquid* and *networked* world.

The use of the word competence in the context of knowledge and know-how has long been a subject of debate. This is because it is a concept with blurred edges, which not surprisingly is used to express the ambivalence of cultural changes regarding the trend related with learning on the stage – instead of teaching. A trend that, in reference to socio-productive systems, is part of the transition from Fordism to post-Fordism and the consequent crisis in the traditional categories used to define employment in all its ramifications (trades, professions, etc.).

The concept of competence (and its articulations: meta-competences, strategic competence, etc.) represents a possible link between the characteristics of current socio-economic contexts and the world of education, with a view not only to adapting to the needs of the economic sphere, but to the promotion of people. It is a dynamic perspective that endorses not only the analysis of the “stock” that a person is able to store through participating in one or more learning experiences, but also the analysis of learning flows, which are not necessarily linear as they are the result of alternating between moments of creativity, consolidation and re-elaboration, through which individuals experiment and act with reflective skills capable of de-structuring and restructuring the stimuli from the environment, in a process of genuine “co-construction”. It is only through interpersonal construction that relevant knowledge can be acquired, through communication processes and mutual adjustments – and not solely on the basis of “platforms” with given, static and a priori definitions, or of knowledge considered in platonically basic and universalistic terms.

The verb ‘to form’ in its widest etymological definition means to shape, to mold someone into a desired shape and to educate through teaching. The training process is reminiscent of education: guiding someone, leading them and showing them a way, using a set of activities, projects, interventions and processes that are intentionally aimed at facilitating the continuous and lifelong process of learning in an organized manner, with the final objective of acquiring skills, abilities and knowledge, and the consequent capability to use, manipulate and produce/create them, as well as the ability to acquire and develop skills for work and while working.

In this perspective, reflecting on training and education is not so much about dwelling on content (individual knowledge, disciplines), but on the way a person prepares – and with how much ease – for learning. Therefore, the traditional (and restrictive) view of education when training people to do specific activities, even when dealing specifically with professionalization, represents an inadequate paradigm for the levels of complexity that characterize most of today’s society, in which we see a lack of urgency in the organization of politics, economics and culture within the borders of nation states. The national context, spatially defined by solid borders, has long defined a radius of action; a horizon that has

a particularly significant meaning for people, one that is consistent with the public action. In this perspective, education and training were tools that were gradually revised to suit the changing social conditions they were part of, with the purpose of socializing individuals within contexts made by the same national border – sufficiently cohesive from an institutional, symbolic, value-related and economics viewpoint – and targeting the individual internalization of the skills and abilities needed to live, by adapting, in their social environment.

On the contrary, the current historical period is increasingly characterized by a marked disconnection between subjective experience and the organization of a typically state-run society. Today cognitive and spatial maps of social life tend to be without borders, increasingly going beyond the national dimension to make room for new structures and flows: economic and financial systems are organized on a world-wide scale, amplifying global interdependencies in terms of consequences and effects – relaxing territorial entrenchments and social and political reference points within national boundaries. Even governments and supranational administrations that preside over various spheres of activity operate with increasingly “de-territorialized” strategies, highlighting connections and cognitive constraints, and involving the use of specialized knowledge that transcends national borders. As well as ideas, information and cultures, supported by online technologies, now “travel” and contaminate the entire planet.

At the same time, global is contrasting with local and in many areas we are witnessing a growing phenomenon of re-localization and micro-fragmentation: for example, dynamics of exclusion and social conflict aimed at the stigma and exclusion of what is considered to be “different”, or demands for the socio-political recognition of small local countries through requests for the recognition of dialects as official languages – also trying to acquire written consolidation (through grammar and dictionaries). Furthermore, today the individual claims to his or her uniqueness and singularity, to simultaneously belonging to processes and interaction networks – however different they may be. The increased mobility of people, goods, capital and technology across national and continental borders, is accompanied by the valorization of intermediate sized territories (regions, districts, etc.) with their own form of development and related human capital requirements that have certain characteristics.

Within the “*glocal*” world, cognitive expectations are related to the idea that individuals are able to learn and change, namely they are able to become different and create diversity. In fact, despite the identification and stabilization of cognitive expectations being socially constructed, the allocation of skills and capabilities invests the single person, giving rise to social inclusion processes that reward not so much compliance

with rules and regulations, but cognitive performance related to individual intelligence. This is amplified by the process in which the disappearance and reconfiguration of traditional belongings (community, family, professional, etc.) and the related sense of security and stability are increasingly replaced by an appreciation of autonomy and diversity in making choices, as a basis for the formation of individual identities. Individuals, increasingly stripped of their traditional affiliations, tend to become more responsible for their life's choices (education, social behaviors, careers, economic investments, political positions, behaviors with effects on health and disease). That which characterizes the “*glocal*” world can therefore be understood as the transition from a society of shared rules to a society of individualized risks, from a society based on expectations of continuity and stability to a society of disjointed change.

These transformations have obvious repercussions on people's professional prospects, in the evolution of a service and production system within a global knowledge economy. Until recently, there was a system of fairly standard jobs and professions, characterized by well-defined skills and equally well-established training systems aimed at transferring knowledge and at creating citizens with a relatively homogeneous common lexicon, in a national state with a well-defined identity. Today, however, the concept of learning is the nucleus around which the structure of training revolves, at any level, seen from a perspective that emphasizes its constructive character: people are committed to developing their own abilities, becoming ever and ever aware of their own points of view, through the continuous organization and reorganization of their knowledge – a process in which the person plays an active role, with particular emphasis on the way they learn and generate learning. Knowledge is not the result of a passive transmission of information, but the product of personal and inter-personal exchange; knowledge is constructed within the context of a person's actions and, in this sense, is inevitably “situated”: it develops in dialogic and interpersonal terms, through forms of collaboration and social negotiation.

How to empower people and their key-competencies and capacities? How to communicate and deal successfully with them? How to improve the employment prospects of people? Economic stagnation in many countries, as well as the high youth unemployment worldwide, have contributed to a growing sense that traditional education and training models no longer create a pathway for the majority to reach their hopes and aspirations. Quality is often poor; the outcomes are uncertain and scarcely measurable: what education and training offer is often disconnected from the needs of the “real world”. In order to empower people, their skills and capacities, it is necessary to implement training strategies aimed at enabling people to make use of macro-concepts: that is to say of concepts,

and concept maps or diagrams, that make it possible to understand the concept on more levels, taking into account the many nuances and ambiguities – without arbitrary and univocal simplifications. In other words, we need to train people to have a general aptitude for identifying and dealing with problems, as well as meta-cognitive abilities allowing them to make connections between pieces of knowledge. There are several particularly effective strategies for doing this: “dialogic” thinking that allows the complexity of the world to remain as such (without dividing it into rigid self-referencing sections); “recursive” thinking aimed at understanding systemic dynamics and the circular process of reality; “holographic” thinking by which we can enrich parts of our knowledge with the whole, and the whole with parts of it. The holographic approach is itself linked to the recursive approach, which in turn is linked to the dialogic approach: therefore, a task that is a priority for the trainer is understanding the different dimensions of reality, encompassing them as a whole and facing the complexity that binds unity and multiplicity and vice versa – stimulating the development of “general intelligence” capable of addressing the complex and “glocal”.

Today, more than ever, the construction and transmission of pure “content related” competencies, focused on specialized technical knowledge, needs to be combined and integrated with a second type of skill set that we can define as “cross” or “meta”. Competencies that cannot be articulated in a static body of knowledge or restricted in a disciplined way, but which are transversal, capable of stimulating the formation of a mindset open to complexity, lifelong learning, reflexivity, self-awareness about the personal cognitive styles, openness with questioning of one’s epistemological assumptions. Therefore, developing “meta” skills also means acquiring the ability to reflexively select and manage specific skills that are useful to one’s social adaptation just as technical and specialized skills. Consequently, “meta” competences can facilitate one’s ability to adapt and re-adapt to the evolving dynamics of a complex context – fostering employability.

A place where to reach those results today is e-REAL, an acronym that stands for enhanced – or augmented – reality lab: a place where to experience challenging situations in a small group setting, engaging all participants simultaneously on different levels: with peers, thematic experts, and learning facilitators, both on-site, and remotely. e-REAL is a lab based on visual thinking and knowledge visualization, facilitated by enhanced (or augmented) reality tools. It is a highly interactive and face-to-face lab that promotes proactive data and information research (everything is available, but learners have to actively look for it) – allowing also knowledge sharing with remote teams, and integrating training on soft skills with those that are technical and specialized. By utilizing e-REAL, a myriad of skills are

fostered: behavioral and cognitive, as well as metacognitive skills. Finally, technical skills are also honed, because it is mainly by fostering technical and job-related skills that soft-skills are developed as well.

Innovations based on visual thinking and immersive learning, such as e-REAL, as well as some other augmented reality tools, advances in tablet technology and mobile applications, wearable devices, multimedia libraries, are successful in order to upgrading people knowledge, skills and abilities. Visual thinking, digital technologies, and knowledge visualization are transforming the way in which people learn, by opening up new opportunities for immersive training, as well as serious gaming. Similar to being immersed within a videogame, people are challenged by facing real cases within complex scenarios that present a “more than real” wealth of information – this occurs while the many levels of the situation are made available simultaneously.

The present volume is aimed at sharing paradigms, practices, case-studies and outputs from applied research.



# **First Part**

## **Employability**



# **Rethinking employability: New managerial competencies in a global labour market**

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## **1. Introduction**

To say it with Bauman, globalization does not imply cultural unification but rather «the global markets of commercial goods and information make the selective absorption unavoidable» (Bauman, 1998a, p. 43). Such a ‘selective absorption’ has a major impact on the individual capability to access and being active in the labour market. To this extent also the individuals’ capability – and chances – to gain and maintaining, or changing employment are becoming more and more ‘liquid’. Such ‘liquidity’ is not only referred to the uncertainty that the global downturn has spread on the labour markets since 2008. It is instead more related to the evidence that the business world is becoming more and more global, being exposed to ambiguous pressures of local responsiveness and global unification, or standardization. As McLuhan (1962) foresaw, although he did not have the chance to live long enough to see the advent of Internet, the pervasiveness of electronic media is unifying and ‘re-tribalizing’ the human race, in a ‘village’ which is becoming more and more ‘global’.

In this setting, dealing with employability requires sufficiently fluid categories to understand the versatile realities of the multiple worlds we live (Bertagni, La Rosa, and Salvetti, 2010). Such fluidity interests both the supply and the demand side of employability, affecting individual candidates as well as any kind of employer (i.e. companies, firms, public administrations, and non-governmental organizations - NGOs).

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Over the last 30 years the globalization of markets and industries has fundamentally changed the competitive conditions (Wieserma and Bowen, 2008; Ghemawat, 2010). Accordingly, companies struggle with many controversies of the liquid, digitized and networked world in which they operate, being pragmatically conscious that «integration and fragmentation, globalization and territorialisation are mutually complementary processes; more precisely, two sides of the same process» (Bauman, 1998a, p. 42).

Additionally, the progressive globalization and the contiguity of the labour markets are affecting also those companies that have been reluctant to any form of explicit internationalization, pushing the need for the adoption of a more cross-cultural oriented mindset (Hofstede, 2010). The overall scenario is completed by other concurrent and non-independent emerging phenomena like the green economy (Lubin and Esty, 2010), the ageing of the population (Coleman, 1993; Strack, Baier and Fahlander, 2008), the diffusion of corporate social responsibility (CSR) (Campbell, 2007; Maon, Lindgreen and Swaen, 2008; Angus-Leppan, Metcalf and Benn, 2009), brain drains and skill shortages (Dychwald, Morison and Erickson, 2006), the shrinking of the population size in many advanced countries (Spiezza, 2002).

The paper reports some evidence from a wide research project conducted by a major Italian business school investigating what companies wanted from its MBA graduates, seen as prospective *glocal* managers (Bauman, 1998b; Bertagni and Salvetti, 2010). The research project was mainly run in years 2010-12, involving more than 200 top managers. It ended with two triangulation follow-ups in 2014. The project followed a grounded theory approach and included both qualitative and quantitative methods.

The paper starts with a literature review on the subject of competencies and skills as pillars of employability (Par. 2). Par. 3 describes the research design and the methodology, whereas Par. 4 describes the main findings. Par. 5 presents the discussion and conclusion.

## **2. Literature review**

Although the term employability is used in a variety of context with a wide range of meanings, this paper considers it as the individual ability to be employed. Such construct is dynamic in nature, covering the individual capability to gain initial employment, to maintain it and make transitions between jobs and roles, or to obtain a new employment (Hillage and Pollard, 1998). Employability rules transactions in labour markets, being a key goal for individuals, as well as for employers to foster in workforces (Rothwell and Arnold, 2005).

The link between globalization and employability can be investigated via the consideration that «the facts of contemporary history are also facts about the success and failure of individual men and women (...) Neither the life of an individual nor the history of a society can be understood without understanding both» (Mills, 1959, p. 3). In fact, as the related construct of career, employability takes place at the «intersection of societal history and individual biography» (Grandjean, 1981, p. 1057) linking micro- and macro-frames of references (Schein, 1978). It is then central to understanding how individuals, institutions and society interact (Hughes, 1937; Hughes, 1958; Mills, 1959; Barley, 1989). Having companies, labour unions and individuals different points of reference, cognitive schemes and final expected outcomes, investigations on employability requires the combination of different theoretical languages, allowing communication between various discourses (Gunz and Mayrhofer, 2011). Hence, a comprehensive understanding of employability requires theoretical frameworks spanning different levels of social complexity. The following two paragraphs will summarize the effects of globalization and liquidity on both companies and individuals. The subsequent research questions will be also drawn.

### *2.1. (Re-) acting to liquid social and working environments*

In a world that is becoming more and more glocal, networked and digitized organizations have to face liquid environments (Baumann, 1998a). The theme of reacting to mutable environments is not new to the managerial literature. Following Burton and Obel (1998, 2004), organizations are exposed to: a) uncertainty of changes in the environment, b) complexity, meant as conditions to face and their interdependencies, c) equivocality, that involves ‘what to watch’ in the environment. Several contributions from the contingency-theory have effectively showed how organizations can react when facing uncertainty through the adoption of more “organic” management systems (Burns and Stalker, 1961), complexity via internal differentiation (Lawrence and Lorsch, 1967) or by planning systems (Emery and Trist, 1965). Consistently, several studies have also demonstrated that the development of situations of ‘fits’ with external environment will yield better performance than will misfits (Doty, Glick and Huber, 1993; Burton, Lauridsen and Obel, 2002).

The search for fit can be seen as a process resulting in changes in products or services and on internal organization design. Organizations that respond more appropriately to environmental changes will, in the long term, be more effective. Nevertheless, in contemporary, liquid environments the concept static fit is becoming anachronistic. In fact, organiza-

tions are asked to change rapidly, reacting to external shocks by searching new tactics and strategies, rather than trying to restore previous settings. In turn, they have to shift from *adaptability* and *static fit* to *maneuverability* and overall *dynamic fit* (Burton and Obel, 2013; Nissen, 2014).

Liquidity hits both the products and services, and the labour markets. On the one hand, companies try to survive through innovation and more effective marketing and manufacturing strategies. On the other hand, they need to hire personnel that are able to grow over time, as they want to increase their strategic and organizational maneuverability. Employability lies then at the interception of what the companies seek (labour demand) and what the labour market is able to offer (labour supply). In such a game, business schools play a crucial role, being the ‘incubator’ and the ‘provider’ of such competencies.

## 2.2. *Employability: individual, organizational and external attributes*

The individual attributes of employability include the repertoire of knowledge and skills he or she can offer to an employer, as well as her/his mastery of career management and ability in job search (Rothwell and Arnold, 2005). Employers hire individuals for using such repertoires in order to perform their core activities, achieve goals and satisfy stakeholders. The organizational attributes of employability therefore refer to the ‘within-organization factors’, such as the current and predicted states of internal labour markets (Rothwell and Arnold, 2005). The general state(s) of the external labour market(s) also affect the individual employability, representing the demand for the individual knowledge and skills.

Robbins and Hunsaker (1996) define a skill as «a system of behaviour that can be applied in a wide range of situations» (p. 7). Similarly, a skill is «a property of a person; it is a person’s ability to demonstrate a system and sequence of behaviour that [is] functionally related to attaining a performance goal» (Boyatzis, 1982, p. 33). Defining the skills as «goal-directed and well-organized behaviours» Proctor and Dutta (1995, p. 18) included also goal-orientation.

The research presented in this paper was conducted at a business school which was re-discussing and re-thinking the idea of employability of its graduates. That research problem solicited the analysis of the link between learning and skill development, emphasized by Kelly (1982) in defining skills as «those identifiable, learned behaviours that individuals use in interpersonal situations to obtain or maintain reinforcement from their environment» (p. 3). Such a perspective has been further reinforced by Robbins and Hunsaker (1996) when they affirm: «To become competent at any skill, a person needs to understand it both conceptually

and behaviourally; have opportunities to practice it; get feedback on how well he or she is performing the skill; and use the skill often enough so that it becomes integrated with his or her behavioural repertoire» (p. 7-8). In this vein, skills can be grouped into two categories, to be considered as *continuum* in the individual repertoire (Corder, 1990): a) hard skills, which are codified, rigorous, scientific, acquired; and b) soft skills, which are subjective, innate, analytical, and intuitive.

While, on the individual side, the employability sees skills as attributes of the person, on the employer side it considers skills as attributes of the job. The aggregation of the employers' desiderata in skills determines shortages or the exceedances in the labour markets. Focusing on the organizational side, desired skills are related to tasks and responsibilities of a particular job, considering the role, its complexity, autonomy and control (Spenner, 1990; Rolfe, 1990). This side of employability overlaps with the term competency which, as effectively summarized by Hoffmann (1999) assumes diverse meaning according to the agenda of the stakeholders that refers to it (p. 275): psychology, management theory, human resource management, education, and politics. In order to create an interface and a language that could have been clearly understandable by the managers and fit with the purpose of our study, we used the definition of job competency expressed by Boyatzis (1982, p. 20-21):

A job competency is an underlying characteristic of a person in that it may be a motive, trait, and skill, aspect of one's self-image or social role, or a body of knowledge which he/she uses. The existence and possession of these characteristics may or not be known to the person. In this sense, the characteristics may be unconscious aspects of the person. Because job competencies are underlying characteristics, they can be said to be generic. A generic characteristic may be apparent in many forms of behaviour, or a wide variety of different actions.

The job competency is therefore a set of individual attributes (skills) that are necessary but not sufficient for achieving superior performance. In fact, in a typical contingency-theory search for 'fit', maximum performance is believed to occur only if the individual capability or talent is consistent with the characteristics of job demands and the organizational environment (Boyatzis, 1982, 2008). In the field of management and business practices, as Jack Welch (2013) has recently noted, some of the skills traditionally considered success factors are progressively being undermined to 'must-haves', whereas the role of 'game changer' is played by behaviour-related personal traits.

Within the above-described framework, considering employability as an outcome that business schools have to guarantee to their graduates, the subsequent research question can be stated as: *R.Q. (In a growingly liquid*

*society) what traits, skills, and knowledge companies look for when they hire prospective managers?*

### **3. Research design**

Given the descriptive and explanatory nature of our research question we opted for an interpretative approach to employability. The phenomenological base of such a research tradition posits every single person and the whole world are inextricably related through persons' lived experience of it (see Berger and Luckman, 1966). In this vein, employability does not consist of two separate entities (company needs vs. individual repertoire). It is rather a construct that exists through the live experience of work, constituted by the meaning the job takes on for the employee and the companies while experiencing it.

The study employed multiple data sources to support the analysis (Miles and Huberman, 1994; Remenyi *et al.*, 1998: a) semi-structured interviews (qualitative analysis) b) a Web-based survey (quantitative analysis) c) archival data. In details, the study started with the sample definition and the qualitative interviews. By doing that the research had a clear guidance on its scope (contents) still allowing some flexibility in how to conduct the quantitative survey. The interviews were ruled by two 'interview guides' based on the literature review and on the result of a pilot.

Both the qualitative and the quantitative analysis here summarized took place between 2010 and 2012. The overall project ended in mid-2014 with a final triangulation. Results were validated by a panel of international experts of managerial employability (7 top managers, 7 deans of business schools or equivalent). Additionally, some specific aspects (e.g. cross-cultural management, traits of leadership) were further investigated by a focus group and a later survey performed jointly with the University of Bellarmine (USA).

#### *3.1. Sample and data collection*

The identification of sample of companies to involve in the project was inspired by three exigencies: 1) exclude non-company firms (i.e. professional firms: legal, accounting), free lancers and individual professionals, 2) capture companies more exposed to *liquid* and *glocal* environment; 3) obtain data capturing the greatest possible variation in employability exigencies (e.g. Sandberg, 2000). Following the notion of theoretical relevance introduced by Glaser and Strauss (1967), the sample was obtained

starting from the overall network of the business school<sup>1</sup> in a range of 800 companies. After that, the remaining companies were filtered via three concomitant criteria: 1) *international exposure* (national companies exporting products/services, national company with major international competitors, national companies with foreign facilities, national subsidiaries of international companies); 2) *innovation* (process innovation, product/service innovation, or both); 3) *socially responsible* (explicitly investing in Corporate Social Responsibility). The size of the company was explicitly not considered as a discriminatory factor. The three filtering criteria matched the five dimensions in which the environmental pressures were categorized by the extant literature (Par. 1-2): globalization, demography, entrepreneurial thinking, ethics and social responsibility. In doing that we followed Corbin and Strauss (1990) when they state: «it is not (...) units, or time that are the focus of attention, but rather the intensity» of the phenomena (p. 8).

Tab. 1 - Composition of the sample by role and gender (quantitative analysis)

Gender	CEO	HR Managers	Other line man.	Total
Male	54	32	64	150
Female	9	19	35	63
Total	63	51	99	64

Tab. 2 - Composition of the sample by role and gender (qualitative analysis)

Gender	CEO	HR Managers	Other line man.	Total
Male	18	15	16	49
Female	2	6	7	15
Total	20	21	23	64

After the first scrimmage, around 530 companies were fitting all the filtering criteria, and about 62% were easily reachable (physical proximity, dependability). Because of the intention to link the analysis at the (overall) company level, only CEO or first line managers were involved. By doing so the differences in terms of job complexity for the specific functional role were drastically reduced (Spenner, 1990; Rolfe, 1990), focusing on the “average” expected organizational role playable by a MBA graduate.

1. Circa 2,000 contacts.

The quantitative analysis involved all of them (N=329) with a response rate of 64.74%. (N=213) (Table 1)<sup>2</sup>. The qualitative analysis stopped at 64 actual interviews, while the saturation threshold was reached at 24 (after which no new concept emerged), which is approximately in line with the range of 20 considered reliable by previous similar phenomenographic studies (Sandberg, 1997; Sandberg, 2000). While conducting the interviews we deliberately overtook the minimum threshold of 20 in order to allow a quite symmetric distribution between CEOs, HR managers and other line managers (Table 2)<sup>3</sup>.

### 3.2. *The semi-structured interviews*

A first draft of the interview scheme was derived from the literature review. A first pilot was tested on 6 managers (2 CEO, 2 HR managers, 2 other line managers) and after reviewing the first drafts both the final scheme and the 'interview guides' were released (one for the interviewers, one for the interviewees). Interviews took place either at the company site or on the business school premises and lasted around 60 minutes. They were conducted in English by one academic faculty member and two teaching assistants, one of which international<sup>4</sup>. Interviews were audio taped and transcribed<sup>5</sup>. The interviews were based on a semi-structured scheme addressing 19 items grouped into three main categories, plus a final room for additional comments and remarks. The scheme was the following:

- A) External factors influencing the company life;
- B) Competencies (related to): *Economy*: Economic dominance, BRIC countries, blamed managers, Governmental intervention, low-cost competition; *Globalization*: Fit to intercultural environment, Flatter organizational structure, Multicultural teams, ICT; *Organizational demography*: Prevent critical knowledge from being lost, Generational

2. The response rate is conditioned by the fact that most of the contacted managers were either currently involved in the business school's activities (i.e. instructors, mentors) or part of the alumni network.

3. The distinct consideration of the HR managers from the other line managers was consistent with the subject of the study. The evidence presented here is not stratified though.

4. The composition of the interviewing teams was also aiming at guarantying that any eventual issue related to the fluency of the interviewee could have been solved on time, during the interview. During the two solar years of the project two academic faculty members and seven teaching assistants were involved.

5. The interviews were not transcribed word-by-work, but contents were systematized and arranged around the structure of the 'interview guide'.

diversity; *Corporate Social Responsibility*: Pressure from stakeholders (expected attitudes), Understanding stakeholders requirements, Reputation, Green economy, Gender diversity, Other forms of diversity, Managerial competences in five years; *Other important competencies*.

The questions were posed in a way that managers were required to elaborate on the subjects and also to make example or recalling actual situations. The interviews dialectically continued along all the focal points until they were all touched and no further progress were made.

The interviews have been analyzed both manually and automatically. After the transcript of the raw data into summaries, each interview was re-read separately by the members of the interviewing team. At the same time, the research teams were able to sketch an idea of possible clusters of concept to categorize the data collected via the interviews. In fact, a preliminary structure of subject emerged gradually and CSR, communication, cross-cultural understanding were actually the first element to arise. Considering the research design adopted, this manual decoding was crucial for perceiving the reach of the threshold of significance and reliability described in Par. 3.1.

Once the process of collecting interviews had reached the acceptable threshold for closing the sample, all the interviews were uploaded onto content-analysis software (Nvivo9). To guarantee the integrity of the analysis two separate uploads were ran: the first just with the interviews; the second comprehensive of the archival data. Eventually, results showed no significant differences.

The data analysis was conducted in three phases: Phase 1 - the statements in each transcript were linked to the defined first-order concepts: for each selected sentence the software proposed to select one of the pre-existing concepts or the opportunity to create a new one; Phase 2 - each first-order concept was linked to more general 'second-order theme', so that the plurality of sentences was gradually reduced to 'second-order themes'; Phase 3 - formulation of a framework of the 'aggregate theoretical dimensions' that represented the dimensions of employability identified by the managers (Figure 1)<sup>6</sup>.

6. The analysis of the external factors was simpler and implied only the identification of the main factors via two phases.

Fig. 1 - Structure of the quantitative analysis



### 3.3. Web-based survey

A Web-based survey was also designed to complement the evidences gathered via the qualitative analysis. The survey was conducted by using SurveyMonkey®. The sample (N=213) of actual respondents was derived as described in Par. 3.2 (Table 1). The survey was based on a self-made questionnaire adapted from some international benchmarks and the relevant literature (Coleman, 1993; Spieza, 2002; Dychwald, Morison and Erickson, 2006; Campbell, 2007; Maon, Lindgreen and Swaen, 2008; Strack, Baier and Fahlander, 2008, Wieserma and Bowen, 2008; Angus-Leppan, Metcalf and Benn, 2009; Ghemawat, 2010; Lubin and Esty, 2010; Bertagni and Salvetti, 2010) (see Par. 1 and Par. 2). The respondents were asked to distribute 100 points of importance between *hard competencies* and *soft competencies*. Subsequently they had to distribute 100 points between the specific items of each category (Hard skills: innovation, Strategy & organization, Economics, finance & accounting, Institutions & law, Management & HR, Entrepreneurship, International business, Marketing; Soft skills: Cognitive, Political, Entrepreneurial, Adaptation, CSR mindset, Interpersonal, Intrapersonal).

### 3.4. Archival data

Before and after the interviews the investigators accessed and reviewed company websites, press releases and any available internal document (reports, organization chart, quality systems, and ethical codes). Such data were used to gain a deeper and richer understanding of the companies to which the managers were referring and their actual settings.

## 4. Findings

Considering the focus on employability of this paper, the description of the findings will start with a short report on the main external factors

identified by the managers. A more detailed description of the managerial competencies will follow.

#### 4.1. *External Factors*

The detection of the external pressures affecting the company life was made by asking an introductory question about «the most important external factors... that had a major impact on the organization, within the last three year». The analysis of the first-order concept generated the following five dimensions, here reported in order of relevance, starting from the most frequent/well-argued:

1. Global financial crisis, with its consequences were vivid in the minds of the interviewees as a: stressor for reconsidering the overall business model(s), pressure for relocation of activities in emerging countries, constrain for customer satisfaction and loyalty, barrier motivating employees.
2. Globalization, as source of fiercer international competition, and a shift of *loci*, with the «battles taking place on the field of marketing» instead of R&D or manufacturing (a CEO).
3. ICT, via the enactment of new services, the growing information contents of products, services and processes.
4. Governments: both as tax collectors (higher pressure on societies) and buyers (shrinkage of public budgets)
5. Green economy: higher standards of compliance, possibility to use renewable energy.

#### 4.2. *Competencies and employability*

The detailed analysis of the interview is reported in Table 3 and represents the process described in Par. 3.2. Once fixed the (first-order) contents, 24 second-order themes were addressed and finally clustered into the eight main dimensions: 1) hard skills, 2) political ability, 3) business sense, 4) adaptability, multicultural mindset, 5) CSR-oriented mindset 6) interpersonal skills, and 7) personal characteristics. Each dimension embeds a different set of specific competencies. Dimensions can be intertwined by the sharing of different manifestation of the same trait or attitude (i.e. honesty).

Table 4 reports the dimensions that were cited with the highest frequency, citing the most recurrent contents within each of them. Despite the interpretative nature of the research, the frequency of concepts in the dialectics might uncover sense of urgencies in the managerial mindset of respondents.

Tab. 3 - *Qualitative analysis on competencies and employability: data structure*

First-order concepts	Second-order Themes	Aggregate Dimensions
Value chain management Marketing Cost control Risk analysis	<i>Hard competencies</i>	<b>Hard skills</b>
Fast and efficient decision-making Analytical approach Trade-offs evaluation Critical thinking Prioritizing Ability to focus on main information Time management Knowledge of ICT tools Knowledge about Green economy Problem-solving (organizational issues)	<i>Hard skills Enablers</i>	
Diplomacy Transparency Negotiation	<i>Diplomacy</i>	<b>Political Ability</b>
Professionalism Leadership (legitimacy) Visibility in the company Credibility Networking Marketing of self	<i>Legitimacy</i>	
Understanding of the external environment  Innovativeness Global world view Global overview of the business Understanding of customer needs in different countries	<i>360° view of the business</i>	<b>Business sense</b>
Quick understanding of business situations Result orientation	<i>Business model enabler</i>	
Problem-solving (customers) Readiness to take more responsibilities Action-oriented approach Business planning		<b>(Business sense)</b>
Strategic approach	<i>Strategic sustainability</i>	
Personal drive/passion for winning Ability to develop strong partnerships Ability to manage growth Product development		

First-order concepts	Second-order Themes	Aggregate Dimensions
Customer orientation Forecasting		
Alignment of governmental goals with company's goals Lobbying towards institutions Understanding and adapting to governmental way of acting	<i>Resilience in regulated environments</i>	
Flexibility Worldwide mobility Change management Readiness to learn something new	<i>Flexibility</i>	<b><i>Adaptability</i></b>
Dealing with and managing complexity	<i>Dealing with complexity</i>	
Cross-functional cooperation Resistance to pressure Readiness to change Ability to manage the complexity of ICT communication		
Proficiency in English Knowledge of other languages	<i>Linguistic skills</i>	<b><i>Multicultural mindset</i></b>
Interest about the outside world	<i>Global open-mindedness</i>	
Understand the value of multiculturalism Out-of-the-box thinking Work and deal with different cultures Intercultural understanding		
Taking limited risks	<i>Sense of responsibility</i>	<b><i>CRS-oriented mindset</i></b>
CSR sensitivity Responsibility Understand stakeholders Long-term focus		
Understand implications of the Green economy Understand impact of Green economy on company's image	<i>Environmental sensitivity</i>	
Understanding diversity and its importance Understand gender diversity and its importance Understand different generations and how they can add value	<i>Diversity</i>	

First-order concepts	Second-order Themes	Aggregate Dimensions
Business ethics	<i>Business Ethics</i>	
Fairness Stimulating trust Building relationships Treat different generations differently	<i>Building and maintaining relationships</i>	<b>Interpersonal skills</b>
Team working Multicultural team worker Listening Respect for experience	<i>Team working</i>	
Conflict management	<i>Team management</i>	
Team management Understanding potential in the team		
Communication skills Simple communication Presentation skills Collaboration	<i>Communication</i>	
Coaching Empathy - understanding people	<i>Coaching and motivating others</i>	
Motivate others Delegation – empowerment of others Ability to involve others Making people grow Sharing knowledge Readiness to learn from others		
Openness Charisma Patience Tolerance Respect for other people Pro-activity Curiosity Creativity Thinking out the box	<i>Openness</i>	<b>Personal characteristics</b>
Honesty Humility	<i>Integrity</i>	
Autonomy	<i>Autonomy</i>	

Tab. 4 - Most mentioned competencies

<i>Multicultural mindset</i>	<i>CSR-oriented mindset</i>	<i>Interpersonal skills</i>	<i>Personal characteristics</i>
Knowledge of other languages	Understanding diversity and its importance	Building relationships	Humility
Out-of-the-box thinking	CSR sensitivity	Communication skills	Openness
Work and deal with different cultures	Business ethics	Team-working	
Intercultural understanding	Understanding stakeholders	Motivating others	

The evidences obtained with the qualitative analysis are further reinforced by the data collected via the Web-survey. Figures showed soft skills had a slight dominance on the hard ones (49.9% vs 49.03%, same 1.07%). Of the first, three dimensions were privileged: a) Cognitive (19.69%), entrepreneurial (16.34%), and adaptability (16.54%); the others scored quite similarly. These results show an interesting converge between the qualitative and the quantitative analyses. In fact, within the category of cognitive competencies, priority setting (prioritizing) and time management, and problem-solving emerged as the most important. Those concepts were clustered as hard skills enabler during the interview analysis, emphasizing the crucial role they can play in enabling and enacting (*might-haves*) the exploitation of the content-related hard skills (*must-haves*) (see Welch, 2013). Within the category of the entrepreneurial competencies, the capacity of innovate and client orientation were the most successful, and both fall in the dimension of the “business sense”. As for adaptability, as in the qualitative analysis, flexibility seemed to be its main characteristic.

## 5. Discussion and conclusion

Despite the inner limits of the constructionism and the own limitations of the study we posit that this research can shed light on what is the state-of-the-art on employability, as seen by companies. That stated, the fact that the audience was made by managers of companies surely inhibits the extension of our results to other organizations that might differ in nature (non-profit), mission (i.e., public administrations, NGOs), size and complexity (SMEs). Further, the managers involved both in the interviews and the survey were solicited to answer on the future, perspective candidates to a managerial career, which *de facto* excludes most of the rest of the employees.

Nevertheless, we challenged the definition of employability through a grounded theory approach that was meant to capture the fluid categories that organizations which attempt to be more *maneuverable* are facing in a glocal world (Bertagni, La Rosa and Salvetti, 2010). We actually found convincing arguments to the thesis that soft skills are becoming more and more *game-changers*, while traditional disciplinary-rooted hard competencies appear to be *must-haves* (Welch, 2013), by adopting a perspective of investigation that considered both the individual and the organizational side of employability. To say it with Mills, «no social study that does not come back to the problems of biography, of history and of their intersection within a society has completed its intellectual journey» (1959, p. 6). In this sense, this article contributes to the debate on employability by attempting to *order* (Baumann, 1998a) individual professional expectations and companies' needs.

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# Competencies for innovation and employability: Rhetoric and reality from a Southern Italian region

*Lidia Greco\**

## 1. Introduction

It is undoubted that employers have always been interested in who they employ. Nonetheless, it is equally undoubted that the imperative of the most advanced economies to become knowledge-based economies to compete in a more complex environment has heightened such a tendency.

Whilst human capital has gained a central position within political and scientific debates over time, especially for its contribution in the pursuit of a 'high road' to development and innovation and in the provision of work opportunities, more recently a critical importance has been acquired by the discourse on workers' competencies, also in the wave of the EU employment and social policy. The central tenet is in fact that what is truly crucial in today's labour market is workers' capacity to perform a certain action based on criteria of efficiency and quality: a 'know-how-to-perform' that requires knowledge, abilities and attitudes<sup>1</sup>. A number of implications arise. In a society characterized by the de-materialisation of production, by the shift away from physical dexterity and skills to mental processing ability, low skilled occupations and low produc-

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1. Knowledge refers to a structured set of information, principles, theories, practices necessary for the appropriate execution of a profession. Abilities indicate the capacity to apply a specific set of knowledge to carry out tasks and solve problems. Finally, attitudes refer to a subjective mood, namely the natural propensity of an individual to do something.

tivity jobs are believed to be a fading remainder of the past economic and industrial structure. By contrast, in the context of globalization and in a more fluid labour market, what counts is to acquire the right competencies and skills that enhance employment opportunities. It is also argued that national governments can no longer guarantee full employment and individual workers and collective well-being depends precisely on their knowledge, skills and entrepreneurial zeal. Workers are likely to change various jobs in their working life and therefore it is said that they should acquire especially transversal or 'soft' competencies which are generic enough to be used in a large number of jobs.

Implications for public policies are significant. Policies to encourage continued up-skilling become necessary to both social and economic advance and, actually, there is widespread hope that these policies are sufficient for it (Crouch, 1997). In addition, interventions designed to enhance the employability of single individuals are considered crucial: indeed, enhanced employability is the new job security (Pruijt and Dérogée, 2010).

Starting from the empirical evidence arising from a large-scale survey carried out on Apulian small and medium enterprises (SMEs) companies in 2013 as well as on a more limited survey on regional innovative companies, used to further deepen research findings, the article critically discusses questions concerning the rhetoric of competencies. In contrast to prevailing individualized accounts of competencies and skill requirements, focusing on workers rather on workers in organizations and in labour markets, it first points attention to their social construction and, then, it engages with the debate on employability in knowledge-based economies.

## **2. Competencies for development and employment: a review of key issues**

The positive relationship between knowledge and competencies and economic development is widely taken for granted. Specifically, the capacity to mobilize, in an integrated and appropriate fashion, knowledge, abilities and attitudes is crucial in a twofold way. First, a highly qualified human capital with adequate competencies, especially if directly connected to the production system, is deemed to be an important condition to ensure rising levels of socio-economic development. Education, training and knowledge are the main ingredients to allow the transformation towards a knowledge-based economy, to sustain competitiveness and to pursue a high road to development based on innovation and research (Bell, 1973; Regini, 2000; Hall and Soskice, 2001; Rullani, 2004;

Visco, 2011). Second, at a different scale, knowledge and skills represent an advantage for single individuals who, by acquiring advanced levels of education and appropriate competencies, are more likely to secure an adequate future for themselves. They are more able to access and stay within the labour market, to reduce the unemployment risks, besides having more chances of career and income; in a word, they are more likely to be employable (Crouch, 1997).

Within the academic literature, a general reference can be made to the economic theory of human capital. At macro-economic level, it posits the positive impact of knowledge for collectivity, production system and development and, at micro-economic level, the higher return in investment for education (for more insights Centra and Tronti, 2011). Organizational and management studies too have analyzed the unequivocal relationship between human resources and economic development via the contribution they make to companies' achievements (Boyatzis, 1982; Spencer and Spencer, 1993; see Nosella et al. 2003 for a review). Specifically, the 'resource based view' (*ibidem.*) suggests that firms' competitive advantage is connected to a unique combination of resources that cannot be imitated by nor transferred to other organizations. The main implication is that for firms looking for high performances, there is no more room for low skilled workers.

Starting from the analyses of the shift to a post-industrial society, especially with the end of the technical division of labour (Kern and Schumann, 1991), the sociological literature has emphasized more than the end of work its metamorphosis. Among other things, higher levels of education and increasing non-manual jobs may have the effect to provide workers with greater autonomy and more task discretion (Gallie et al. 1998). In other words, the wider combination and integration of *savoir faire* (more occupation specific competencies), and *savoir être* (more transversal and inter-personal competencies) is deemed to have opened up new opportunities for workers who are called to participate and contribute in their workplace with more autonomy, creativity and flexibility. Yet already in the mid-1980s, more empirical studies had emphasized the relevance of individual characteristics and of more common and interchangeable skills for work (De Rita, 1984; Cacace, 1985; Bresciani, 1985; Contessa, 1987 cited in Di Francesco, 1993). Nonetheless, sociological accounts highlight the ambivalent nature of the above mentioned transformations as new forms of inequalities and exclusion can arise in relation to flexibility, insecurity, stress (to mention a few, Castel, 1995; Sennett 1999; Beck, 2000; Gallino, 2001). With concern to the specific issue of skills and competencies, starting from classic studies holding that education is important for employment not for the skills it imparts but for the credential it confers (Collins, 1979; Bourdieu, 1996), more recent insights suggest that the new

economy requires flexible rather than competent and obedient workers (Sears, 2006; Adams and Demaiter, 2008). It follows that rather seeing credentials as representing skills and competencies learned, employers believe they signal potential; in other words, they have a great deal to do with attitudes.

The discourse on the strategic importance of human capital and of appropriate competencies within firms to generate especially innovation has been largely adopted also by a number of international and national organizations and has soon become a dominant theme on their agendas (OECD, 2010, 2011a,b; CEDEFOP, 2012; ISFOL, 2012; EU, 2010a,b). By endorsing the decline of work conception as an application of standardized knowledge acquired during the educational path and useful all life-long, in 2006 the European council and parliament adopted a framework of reference relative to key competencies to lifelong learning to provide not only a convergence of objectives but ultimately a convergence of policy approaches among member states<sup>2</sup>. According to Jacobsson (2004), from the late 1990s onwards, the positive and rather uncritical reading of knowledge and competencies has been at the core of EU discourse on employment. The key concepts of ‘employability, adaptability, flexibility, activation, lifelong learning, entrepreneurship, and more lately active welfare and quality in work’ have slowly become ‘common’ concerns for member states, stimulating a voluntary system of coordination. Mutual identification and learning processes, the development of epistemic communities and of common cognitive frames have been crucial to produce a discursive regulatory mechanism – namely, a soft, non-binding, regulation -- on these issues which underlies national action plans but especially political, social and moral arenas.

Apart from the conceptual fuzziness of some of these notions (Pruijt and Dérogée, 2010), it is apparent, however, that even the practical consequences of such a homologating rhetoric are far from simple. If investment in human capital has become a strategic dimension of development and employment, more problematic is to identify what specific competencies are required to produce the desired effects or to clearly identify the mechanisms through which specific competencies end up having effects on firms’ performances (Nosella *et al.*, 2003) and, at a wider scale, on development or innovation (Edquist 2005 in OECD, 2011a). With this regard, a further interesting debate concerns the role of space in the knowledge-economy nexus. Contrary to standard economic theory, there are seemingly wide variations in the capacities of firms to create, circulate

2. Such a framework identifies and defines the key competencies that EU citizens ought to have for their own personal achievement, for social inclusion, for active citizenship and employability.

and manage knowledge. Geographical and socio-economic accounts have remarked the idiosyncratic nature especially of production knowledge and skills that are their non-codified and tacit nature (see the wide literature on industrial districts; Storper and Salais, 1997).

It is a fact however that a number of public and private initiatives have launched a series of surveys to partly fill the knowledge gap about market trends in terms of competencies and skills demand and to inform public policies. Based on the experience of the UK and Ireland, since 2010 Excelsior<sup>3</sup> has provided a wide array of information on the theme. ISFOL produces annual reports to provide insights on the demand of professional profiles and of competencies. To this purpose, it is worth mentioning the project carried out in the last ten years on behalf of the Ministry of Labour and Social Policies based on the recognition that a timely analysis of competence and skill needs is a crucial upstream activity of programming processes (Mereu and Franceschetti, 2013)<sup>4</sup>. At international scale, OECD has devoted a number of works to define competencies and key competencies as well as specific studies to explore the causal relation between the supply of higher levels of education, training and skills and increased demand for technical and organizational innovation.

The following section discusses the main results of a survey carried out by the Puglia Region aiming at providing both a static and a dynamic picture of firms' demand for competencies for innovation. Underlying was the belief that the knowledge of competencies needs (and of professional profiles) represents a pre-condition to effectively intervene with education and training measures as well as with labour market policies.

### **3. Competencies in place: the evidence from the Puglia region**

#### *3.1. Introduction*

The survey on SMEs 'New competencies for innovation' was carried out by ARTI (Agenzia regionale per la tecnologia e l'innovazione) in 2013 (reference period 2012) within the action 'Innovation for employability' of the Puglia Regional plan for Work<sup>5</sup>. The general aim was to analyse

3. It deals with the information system of the Italian Chambers of Commerce in collaboration with the Ministry of Labour.

4. It deals with an information system (professionioccupazione) concerning professional and training needs from both a quantitative perspective and a qualitative one. On the one hand, together with ISTAT, ISFOL has developed a taxonomy of professions; on the other, by referring to the US O\*Net network, it worked on the content of each profession.

5. In 2011, the Puglia Region approved the Extraordinary Plan for Work with a twofold aim: first, to increase the employment levels of the most vulnerable segments of the

firms' future needs in relation to professional profiles and competencies, particularly those connected to innovation processes<sup>6</sup>. A further goal was to identify the competence gap existing in the region's production system that is the difference between the existing competencies within companies and those that, deemed relevant in the future, needed to be acquired<sup>7</sup>. However, in order to provide deeper insights on the findings, the article also presents the results deriving from a second survey. It involved small regional innovative companies, identified as those that had benefited from regional, national and international financial resources to carry out R&D activities or technological transfer projects<sup>8</sup>. Even though this survey was carried out with a different methodology<sup>9</sup> and, therefore, results cannot completely overlap with those concerning SMEs, they can be nonetheless scrutinized to find analogies and differences in the overall trends.

### *3.2. Regional SMEs companies and their demand for professions and competencies*

As indicated by graph 1, almost two thirds of the companies surveyed have less than 10 employees; larger ones (20-49 employees) are less than 13%. The vast majority of companies work in the retail sector (29%) followed by manufacturing companies (21% of the total) and service ones (almost 21%). 18% of companies are in the construction industry, almost 11% in the tourist industry.

regional workforce (namely, women, young people and redundant workers); second, to valorize workforce's human capital as a way to improve companies' competitiveness. Financial resources amounted to 340 million euro.

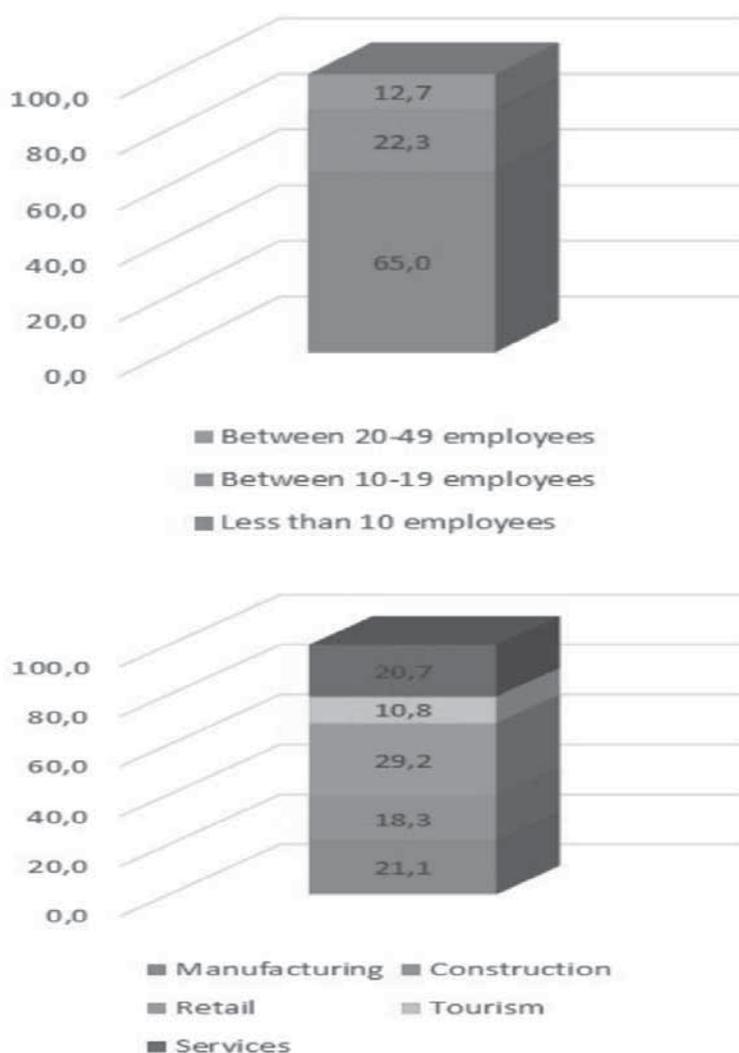
6. The survey was based on a statistically representative sample of Apulian SME (less than 50 employees) which, at that moment, were slightly more than 61.000 (Archive ISTAT-ASIA); of these around 10% entered the stratified sample reflecting a) the regional sectoral structure b) company's dimension c) the geographical area within the region and d) their legal status. The final number of respondents was 2.588 companies. A structured questionnaire was administered to respondents both on line via a website (CAWI) and over the telephone (CATI). Companies were asked to supply information on three main themes: their activity; their demand of labour and of competencies; their innovation strategies and models.

7. For a question of length, the paper considers only the first aspect.

8. I.e. regional partnerships for innovation, PON research, EU framework programmes, spin-off projects.

9. In this case, a less structured questionnaire was administered through face-to-face interviews by leaving interviewees the opportunity to provide more information on some specific points. Around 400 companies were involved: the final number of respondents was 147.

Graph 1 - Apulian SMEs by size and sector



2012 was a difficult year for local SMEs in terms of employment creation as only less than 30% of them hired new personnel. Considering the three years until 2015, the tendency is even worse as less than 14% of companies envisages new recruitments (-15,3%). The demand for new workers is greater among bigger companies (20-49 employees), within service sector firms and those with non-local markets. The decision to hire is based on the necessity to improve company's quality and efficiency; only less than a company out three is guided by innovation strategies.

Table 1 shows the professional profiles<sup>10</sup> requested from the Apulian SMEs in the three-year period until 2015 and the number of possible

10. The ISTAT classification of professions has been used to this purpose.

Tab. 1 - The most requested professional profiles by Apulian SMEs in the period 2013-2015

	<i>Profess. profiles</i>		<i>Likely employment</i>	
	<i>N.</i>	<i>%</i>	<i>N.</i>	<i>%</i>
Secretaries and other general administrative staff	26	6,5	148	12,0
Sales related occupations	25	6,3	47	3,8
Qualified construction operatives	22	5,5	91	7,4
Engineering technicians	17	4,3	39	3,2
Employees in logistics	15	3,8	23	1,9
Employees in economic, accounting and financial management	15	3,8	37	3,0
Mechanics, and maintenance technicians	14	3,5	36	2,9
Food process operatives	13	3,3	45	3,7
Non-qualified personnel for goods delivery	13	3,3	22	1,8
Receptionists and customer service occupations	12	3,0	19	1,5
Specialised operatives in electric/electrotechnics equipment	12	3,0	34	2,8
IT, telematics and telecommunication technicians	11	2,8	18	1,5
Restaurant and catering proprietors and employees	11	2,8	119	9,7
Construction finishing operatives	11	2,8	21	1,7
Professionals in math, IT, physics, chemistry, natural sciences	9	2,3	16	1,3
Employees in charge of office machines	9	2,3	17	1,4
Technical professions in touristic activities	7	1,8	15	1,2
Specialised operatives in electric/electrotechnics equipment	7	1,8	14	1,1
Non-qualified personnel in cleaning activities	7	1,8	41	3,3
Engineering and assimilated professionals	6	1,5	21	1,7
Other qualified professions in sale and retail activities	6	1,5	10	0,8
Welders, carpenters and similar professions	6	1,5	22	1,8
Specialised forest workers	6	1,5	33	2,7
Textile and clothing operatives	6	1,5	12	1,0
Other professional profiles	113	28,3	329	26,7
<i>TOTAL</i>	<i>399</i>	<i>100</i>	<i>1.229</i>	<i>100</i>

employees for each of them<sup>11</sup>. First, as anticipated, it is worth underlining the numerical scarceness of potential demand coming from regional SMEs until 2015, amounting to slightly more than 1.200 new employees; the propensity to hire is extremely weak and finds a partial explanation in the still bleak economic picture. Second, the analysis highlights the extreme pulverization of the demand for professional profiles (roughly 400) as even the most requested ones do not achieve a significant share on the total. Third, professional profiles expressed by Apulian SMEs are characterized by medium levels of qualification<sup>12</sup>. Specifically, in the first twelve statistically representative positions, one can find clerical occupations, qualified profiles in retail and tourism, specialized workers in different fields and non-qualified professions in goods delivery, cleaning and manufacturing. It is apparent that technical profiles and highly qualified professions (such as engineers, computer technicians, administrative and banking experts) are a sheer minority.

But what are the competencies associated to the above professional profiles? As showed by graph 2, more than three quarters of regional companies with less than 50 employees require that new employees are flexible and adaptable with respect to the employment context, role and responsibilities<sup>13</sup>. Almost the same importance was attributed to professional autonomy and learning (roughly 69%) and to the capacity to interact with others, especially teamwork (68%). These competencies are followed by the solution of complex and unexpected problems (65%) and the capacity to think and work creatively (61%).

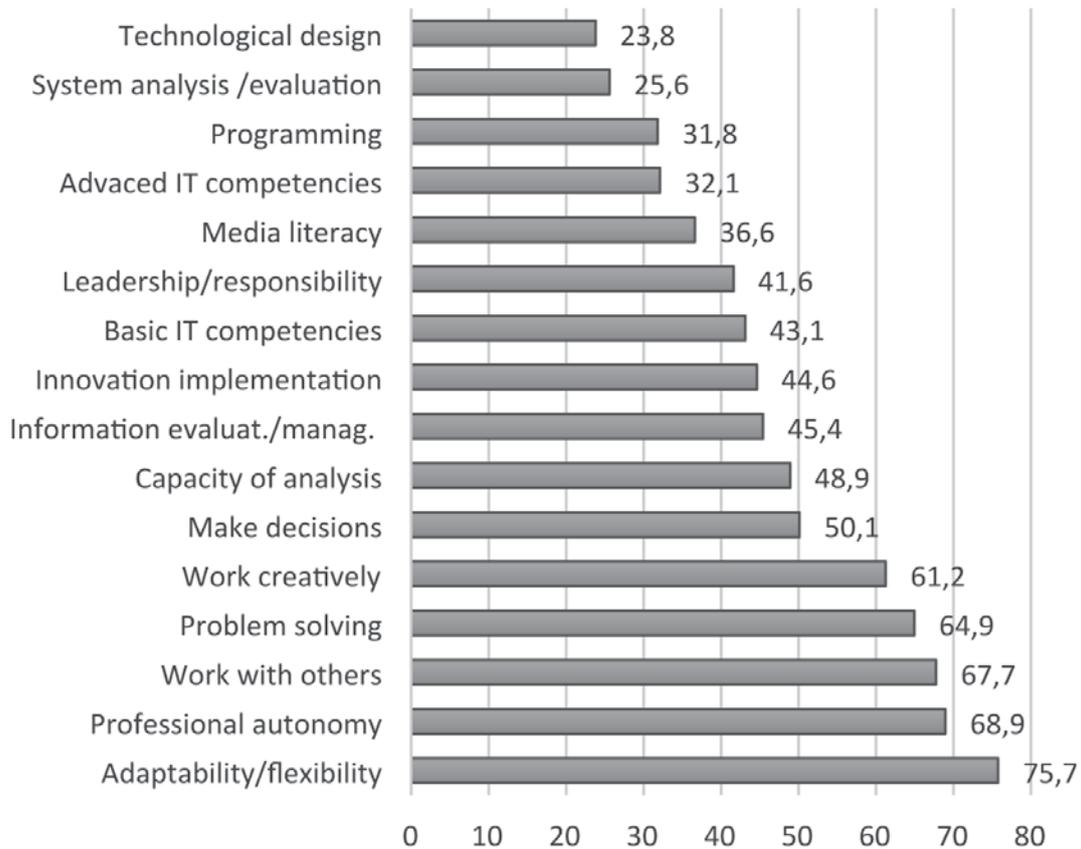
Such findings are consistent with other secondary data analyses carried out at an earlier stage of the research on the region (Greco, 2013) and with recent national surveys. The regional report showed that Apulian firms looked for medium qualified and manual professions (large professional groups 5 and 6) holding medium levels of education. The research report suggested that a graphical representation of potential demand would assume a diamond shape: at the vertexes, one would find the most and the least qualified professional profiles, while medium qualified professions would constitute the wide central part. Also the results on competencies are in line with what found at national level by Excelsior (2013); ISFOL (2012).

11. Firms were asked to indicate both the professional profiles they intended to hire (they could indicate up until five different profiles) and the number of possible new employees.

12. Following ISFOL methodology, highly qualified professional profiles are defined as those belonging to ISTAT large professional groups 1, 2 and 3; medium qualified professional profiles are those belonging to groups 4, 5, and 6; low qualified professional profiles are part of ISTAT large professional groups 7 and 8.

13. Firms were asked to respond to each of the items listed in the question.

Graph 2 - The most requested competencies by Apulian SMEs (Ratio between the number of professional profiles for whom the single item is requested and the total professional profiles requested by firms)



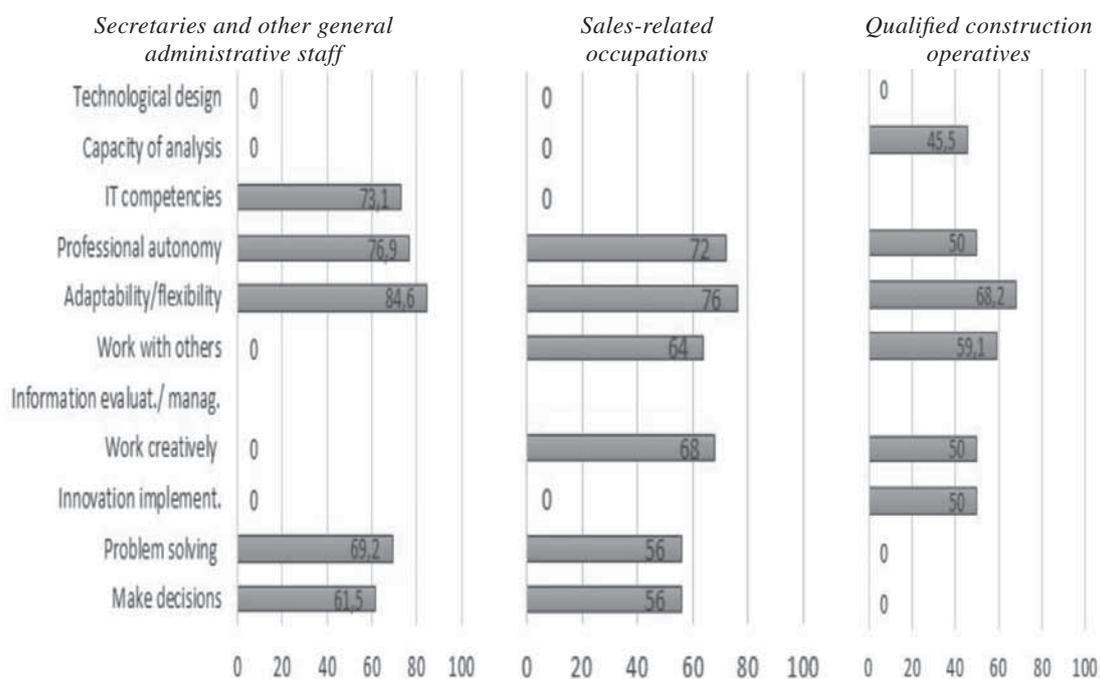
To synthesize, Apulian SMEs look for two types of competencies<sup>14</sup>. First, it deals with social and cultural competencies, disconnected from specific occupations and instead transversal to them. Firms demand for flexible and adaptable workforce that is able to effectively adapt to different situations and people, to work autonomously but also that is aware of its own role with the organization as well as being capable of

14. Following national and international literature, competencies were distinguished into three major categories: a) *social and cultural competencies* (i.e. interact with others, teamwork, flexibility/adaptability, leadership/responsibility, professional autonomy) b) *cognitive competencies* (i.e. think and work creatively, implement innovation, problem solving and critical analysis, evaluate and make decisions, knowledge of foreign languages) c) *technical competencies* (i.e. programming, system analysis and evaluation, technological design, IT use and management). Technical competencies are specific competencies needed in an occupation, involving both academic competencies and knowledge of certain tools and processes. Social and cultural competencies are posited to have a high degree of transferability to different contexts and tasks, and are therefore widely generalizable, and so are cognitive competencies.

working with others. The second type of competencies are cognitive ones. By contrast, technical competencies are given less relevance. It is important to stress that the prominence of social and cultural competencies is independent from the sector and from the level of professional qualification, although rising qualifications are associated with greater demand for cognitive and technical competencies.

The following graph shows the three most requested professional profiles and the associated competencies. For secretaries and other administrative staff the demand for social and cultural competencies is high.

Graph 3 - The most requested professional profiles by SMEs and connected competencies

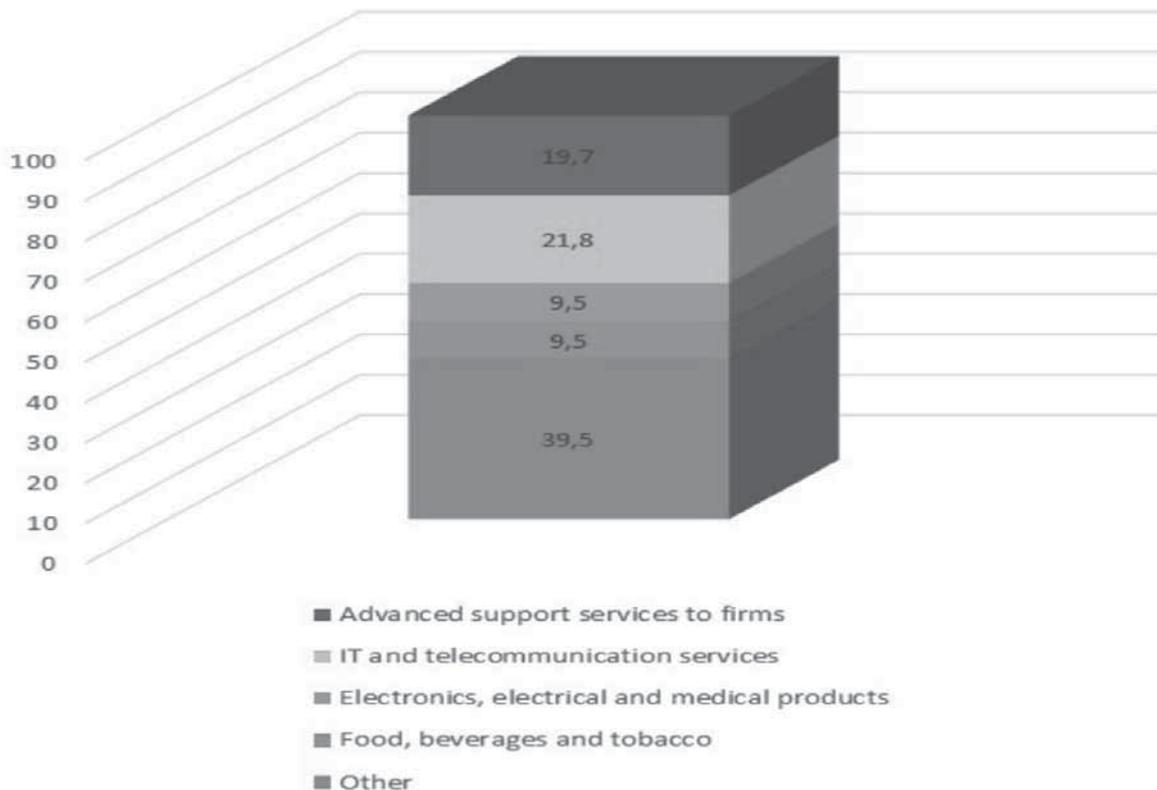


Also for sale personnel, transversal competencies are prevalent compared to technical ones which in fact are not mentioned at all. Besides social and cultural competencies, it appears the importance of some cognitive competencies, especially the capacity to think and work creatively. For operatives in the construction industry, the most requested competencies are flexibility/adaptability and the capacity to work with other. However, in almost half of the cases, companies demand for technical competencies and specifically the capacity of analysis.

### 3.3. Innovative companies and their demand for professional profiles and competencies

First, as indicated by graph 4, almost 42% of these companies are active in support services to firms and into ICT; other high percentages are reached by firms of the electronics, electrical and medical sector and by firms in food, beverage and tobacco. Second, in this phase innovative companies display a greater capacity to produce employment opportunities as 65% of them hired new personnel in 2012 and 78% envisage do so by 2015 for a total of less than 500 new workers. Even in this case, a larger size and non-local markets for products seemed to have a positive impact on the demand for labour. With regard to sectors, chemical and pharmaceutical companies showed the best results, followed by food and metal working firms and ICT. As it could be expected for this type of companies, new recruitments are driven by the willingness /necessity to develop new products and services.

Graph 4 - Apulian innovative companies by sector



As with concern to the demand for professional profiles, Table 2 synthesizes the results. Regional innovative companies look for the recruitment of mainly engineers (IT, mechanical), professionals in mathematical,

informatics, chemical, physical and natural sciences (computer system analyst, IT programmers) and professionals in management, commercial and banking sciences (marketing and commercial specialists, project managers).

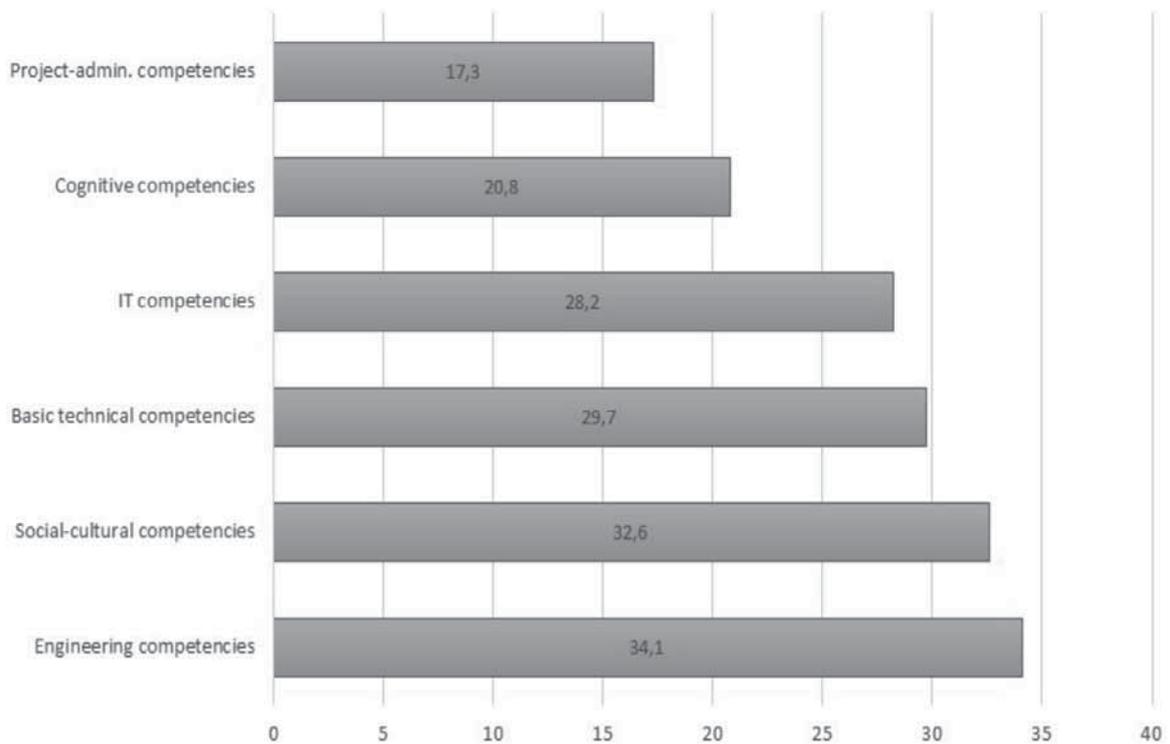
Tab. 2 - The most requested professional profiles by Apulian innovative companies in the period 2013-2015

			Prof. Profiles	Likely Employment	
	N.	%		N.	%
Engineers and similar professions	47	25,0		91	19,4
<i>of which Mechanical engineers</i>	10	21,3		25	27,5
<i>Computer engineers</i>	10	21,3		19	20,9
<i>Electric/electronic engineers</i>	6	12,8		14	15,4
Specialists in math, IT, chemicals, physics and natural sciences	46	24,5		165	35,2
<i>of which Computer system analysts</i>	6	13,0		66	40
<i>Computer technicians</i>	7	15,2		40	24,2
<i>Computer programmers</i>	8	17,4		14	8,5
<i>IT researchers</i>	5	10,9		10	6,1
Specialists in management, commercial and banking sciences	20	10,6		41	8,7
<i>of which Marketing managers</i>	7	35,0		10	24,4
<i>Project managers</i>	4	20,0		16	39
Engineering Technicians	9	4,8		18	3,8
Quantitative sciences technicians	8	4,3		19	4,1
Welders, carpenters and similar professions	7	3,7		22	4,7
Other professional profiles	51	27,1		113	24,1
<i>TOTAL</i>	<i>188</i>	<i>100</i>		<i>469</i>	<i>100</i>

With regard to competencies (graph 5), 34% of firms indicate technical competencies, specifically engineering competencies, but it is worth noting that social and cultural competencies are at the second place with almost a third of total indications.

The following graph – referring to the top three profiles – confirms the mix of competencies required by innovative companies. Besides high levels of technical competencies, both theoretical and applied, companies require the capacity to mobilize more transversal skills: socio-cultural

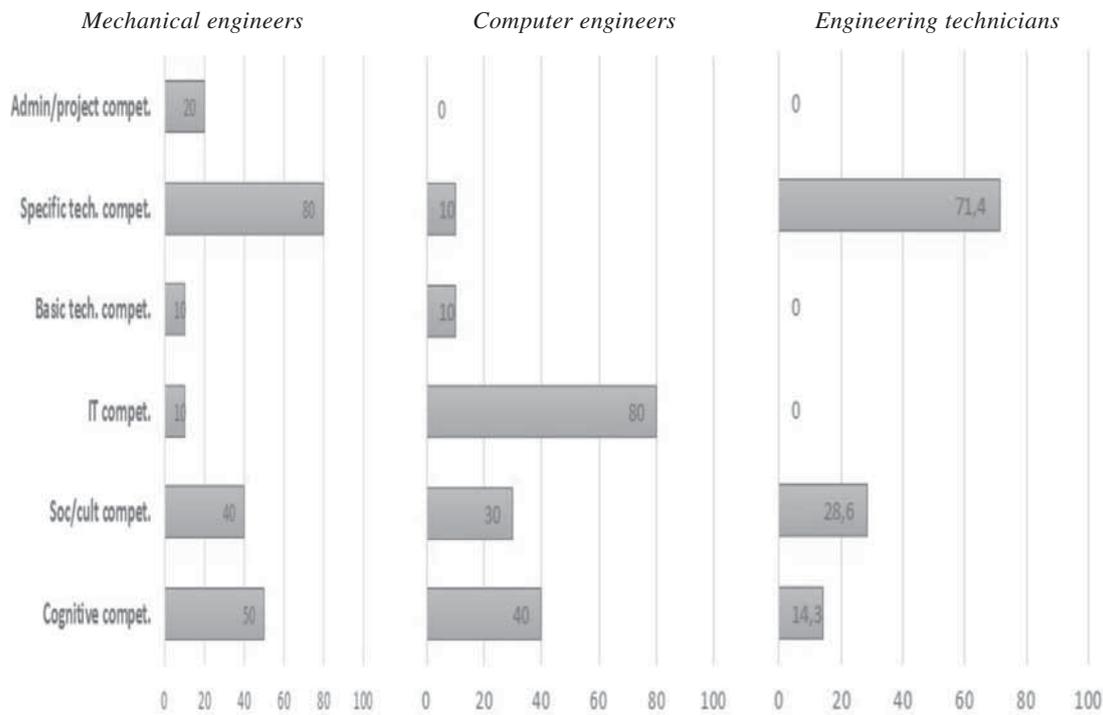
Graph 5 - The most requested competencies by Apulian innovative companies



competencies and cognitive ones are deemed to improve organization profile and work capacity, by contributing to firms' performances. The knowledge of a foreign language, primary English, is required to all professions except for the few low skilled profiles.

To conclude, the analysis of the findings on Apulian SMEs and on innovative companies, used almost as a control group, shows the existence of divergent dynamics between the two sets of firms and suggests the following observations. First, regional SMEs express primarily a demand for medium-qualified professional profiles holding primarily social and cultural competencies, whilst technical competencies appear to be substantially less significant. This evidence denies therefore the almost *natural* tendency of organizations, and of wider production systems, to upgrade their products/services as well as their human resources requirements. The view that our economies are knowledge-based economies overlooks the reality that, especially in production systems characterized by traditional sector specializations, a great part of employment opportunities requires medium and even low qualified workers; this therefore raises the question of how to raise the overall quality of the production system. Sectors and jobs making use of advanced skills are not likely to expand enough to express large numbers of jobs, albeit they may be more resilient during the crisis. Second, the evidence from the survey brings to

Graph 6 - The most requested professional profiles by innovative companies and connected competencies



the fore a possible phenomenon of ‘competencies polarization’ (see *infra*) the local production system privileges soft competencies whilst neglecting the relevance of more technical and occupational specific ones. Innovative companies, a smaller part of the local production system, display different trends: the search for highly qualified personnel is combined with the request of a mix of competencies. In this case, one observes a case of ‘competencies complementarity’; indeed, besides highly sophisticated, occupation-specific, technical competencies, such personnel ought to be able to mobilize also transversal abilities.

Such results allow to debate some implications related to them and raise some critical issues on the current rhetoric about competencies and employability.

#### 4. Some theoretical implications

##### 4.1. *The fit between work and worker: the social construction of competencies*

Much of the debate on skill and competence requirements assumes that workers can be decomposed into bundles of characteristic skills

or competencies that are important for work. Competence requirements expressed by Apulian firms and presented above support such a view. Yet, the emphasis on the variety of abilities to be held by workers in order to fit with their work appears often grotesque when the worker is called to possess an incredible rich set of resources. Underlying is a deterministic and overly simplified view that tends to overlap organizational needs with individual capacities and to assume that there exists only a single way to obtain a given result (Di Francesco, 1993; Vallas, 1990; Darrah, 1994). Based on an empirical analysis, Darrah (1994) shows that there exist alternative ways of performing tasks that entail different skills. In addition, he shows that workers often lack the skills required by the job (i.e. inaccurate job description) but nonetheless remain productive employees.

Another aspect of the debate on competencies concerns the rising emphasis attributed to soft competencies and the risk of skill polarization. As also emerged in the Apulian survey, soft or transversal competencies are most in demand by employers (Hillage *et al.*, 2002): however, this raises critical aspects. First, as suggested by Grugulis and Vincent (2009), personal attributes, attitudes to work and individual qualities are more difficult to evaluate; yet, many jobs and the features attributed to them are often stereotyped: it follows that women call centre representatives must be empathetic, men need only reach sales targets; black men are rated as less ambitious than white colleagues (*ibidem*). Second, the evidence suggests that rather seeing soft skills as complementary, they are often referred to as alternative to technical knowledge and expertise (Payne, 1999). More precisely, a series of empirical research reported by Grugulis and Vincent (2009) highlighted a sort of tautology: when technical skills are highly valued, also soft skills are; by contrast, it is not clear whether valued soft skills contribute to see valued technical competencies. The risk is that companies' emphasis on soft competencies often hides less efficient organizations, unable to acknowledge workers' contribution to work. More generally, it is argued that soft competencies may represent a disadvantage for employees, and especially for workers with intermediate or low level of skills, as they largely exist 'in the eye of beholder'. Third, the conflation of personal attributes and competencies tends to individualize responsibility for their acquisition and neglect the reciprocal construction between individuals, firms and labour market institutions (see *infra*).

To conclude, individualized accounts of competence and skill requirements fail to acknowledge their social construction. Such accounts underestimate the crucial role of the workplace and of the context in influencing workers' learning opportunities as well as the opportunities they have to exercise those competencies. Workers are supposed to be able to move freely and effortlessly between different settings and in the labour

market but competence and skill demand are not universal and generic but rather socially – and especially employer – defined. According to Brown and Hesketh (2004), good employees display the right skills in acceptable and accepted ways as it is not just skills themselves but the way they are enacted and authorized by employers. In the same vein, Wajcman (1991) contends that the categories for evaluating skill definitions are gender-biased and that, therefore, an adequate understanding of gender inequality at work must take account of both the ideological aspects and the material components of skill (i.e. men's control of technology shaped by patriarchal relations).

#### *4.2. Workers and economic performances: the missing role of organizations and production systems*

As anticipated, the current emphasis on the role of competencies and skills to increase individuals' opportunities in the labour market also overlooks the intertwined relationship between individual abilities and educational/professional paths and wider structural dynamics that is the link between labour supply and demand. By no means in fact have rising investments in human capital translated necessarily in good jobs and wage returns and this does not depend solely on individuals. A great role is in fact played by the demand side: the sector specialization of production systems in traditional and mature industries and the scarce diffusion of innovations are perhaps the main aspects hindering the overall quality of workforce demand. Analyzing the negative performances of the Italian economy, Banca d'Italia (2012) points to the sector specialization of the national economy that is unbalanced toward low added-value productions and to the small size of domestic firms. As emerged from the survey and highlighted by the literature (Capriati, 2004), the Apulian production system holds the same characteristics: prevalence of tradition sectors and of often family-owned SMEs. These indications imply that the demand for highly qualified workforce is rather limited with the paradoxical result to create intellectual unemployment and the mobility of the most qualified workers. In other words, in Italy as well as in Puglia, the low quality of the demand side tends to feed a vicious circle, the so-called low equilibrium trap (ISFOL, 2012): low innovative production sectors tend to require medium-low qualified workforce and to offer low wage returns on education and training with the effect to record low productivity levels; in turn, individuals and institutions are not urged to improve their level.

At meso level, the rhetoric of competencies overlooks the role of the organizational contexts: competencies emerge in fact only in the right settings. To this purpose, it is worth considering the contribution of a

variety of organizational studies pointing, among other things, to: (a) organizational models, too often inadequate to valorise workforce competencies; (b) the nature of organizations themselves as often unable to become 'learning organizations' (Nelson and Winter, 1982; Senge, 1990; Dosi and Marengo, 1994 cited in Centra and Tronti, 2011). This denies that workplaces *per se* are fundamentally sound if only employers can attract properly qualified individuals. In this view, the person as an active co-producer of the workplace is missing. Specifically, according to Capaldo et al. (2005), the analysis of SMEs competence needs ought to consider some important peculiarities: the role of the local socio-economic context, influencing for instance entrepreneurs' management style, the blurred organizational boundaries, the accentuated internal flexibility, the centrality of entrepreneur's role in organizations. Yet, for some stances, organizations should be seen as political entities and not simply institutions for getting tasks done so activities, priorities and desirable personal qualities are likely to vary from firm to firm (Grugulis and Vincent, 2009).

#### 4.3. *Competencies, employability and labour market policies: the production of subjectivity in post-fordism*

The central importance that the issue of competencies has gained in the debate on labour market in the last decade or so is said to be connected to the shift of production paradigm – with the demise of the fordist accumulation process – and organizational modalities searching for leaner and flexible arrangements. New concepts have emerged to provide the right representation to the new jobs and ways of working: competence is one of them. Competencies have displaced tasks and qualifications of fordist memory: what is now crucial is to put emphasis on the different knowledge, skills and attitudes as well as behaviours that 'people need to possess to be able to pursue organization's strategic goals as well as the secondary objectives and performance levels that derive from them (Horton, 2002).

More critical sociological readings suggest that competencies are another aspect of the production of subjectivity in contemporary capitalism and the emphasis on them is a rhetorical device to reconcile the critical aspects of post-fordism with individuals' life (Lazzarato, 1997; Bauman, 1999; Beck, 2000; Sennett, 1999). Rather than being a qualitative process of full individual recognition, individualisation becomes a pre-systemic requisite to be displayed within workplaces and as a means of one' own employability (Honneth, 2010; Borghi, 2011). Flexibility, change and instability become aspects of a personal ethic that is interiorized and valorised. The concept of competencies emerges therefore from

the necessity to include into a job not only tasks and contents but also all those immaterial components that are requested when somebody is at work. There, s/he takes not only its role as a worker but also as an individual with personal characteristics, attitudes and qualities, with a history and a background. Consequently, as explained by Farinella (2004), the rhetoric of competencies – understood in the twofold sense ‘to be competent’ and ‘to have competence’ – fits with post-fordism for at least two reasons. First, such rhetoric is able to artificially recompose individual’s unity, by combining the worker with the private person. Second, its immaterial characteristics and abstractions are able to make it sustainable post-fordist effects on individuals/workers. As Sennett argues (1999) however it remains an open questions how the regime of competence is sustainable in terms of personality structure.

In the policy realm, the rhetoric of competencies has widely fed the rhetoric of employability and the supply-side orthodoxy, which spread in all European countries and at EU level since 1997 with the European Employment Strategy of the Luxembourg summit. Despite the existence of different perspectives on employability (McQuaid and Lindsay, 2005), all revolve around individuals’ characteristics and the readiness for work or the factors influencing a person getting a job, moving jobs or improving their job (Hillage and Pollard, 1998). Nonetheless, such a definition is ideologically loaded as it ignores that employability is primarily determined by economic conditions rather than the capabilities of individuals. According to Peck and Theodore (2000), employability is part of a supply-side fundamentalism that ends up locating the causes of (and therefore the remedies to) unemployment on the supply-side of the labour market. More importantly, it maintains that the State has neither responsibility nor the capacity to create jobs, but instead should work on the supply side to be flexible and motivate the unemployed, primarily through active labour market policies. Ultimately, unemployment is conceived in individualistic and behavioural terms, whilst problems as demand deficiencies and job shortage are dismissed. Thus, whilst this supply-side policy orthodoxy has antecedents in both economic and social theory aiming to re-establish the balance between the rights and responsibilities of individuals within Western welfare states, the likely effect of supply-side measures is the social distribution of work at a given level of labour demand. In other words, labour market instability, poverty and indeed welfare dependency are not solved but simply redistributed among the most ‘at risk’ groups (Peck and Theodore, 2000). As suggested by Brown *et al.* (2002), employability is in fact also a relative concept as it depends on the employability of others; by acknowledging the power struggles between competing interest groups, the same authors stress the need of a conceptual framework on employability that enables to study how posi-

tional competitions are structured and how individuals and social groups fare within the rules of the game. The implications of such a debate are particularly relevant for those regions, such as in Puglia, that largely rely on traditional economic structures and have major long-lasting labour market problems: here, as in other marginal areas, skills mismatch and inactivity are the most salient issues that require specific policy interventions (Danson, 2005).

## 5. Conclusion

This article draws on an empirical survey carried out in Puglia, aiming to highlight firms' competencies, to explore the current rhetoric on competencies and employability informed by the neo-liberal ideological paradigm, and to provide some clues for a more appropriate understanding of this theme. Debate about the link between education, competencies and employment has existed for decades now; however, discussion has gained momentum with more recent changes in the nature of the economic systems and workplaces. In spite of the complexity of such transformations, the discourse on competencies and employability proposed by neo-liberal stances has proved extremely simplified, substantially hinging upon an individualized approach. In order to fit firms' organizational needs and being 'attractive' in the labour market, that is in order to be employable, workers are requested not only to gain the right attitudes and abilities but also to interiorize the appropriate work ethic. In policy terms, this view has translated into a narrow supply-side approach. The article has called for a broader conceptualization of competencies and employability that focuses on the interaction between individual, organizations and labour markets.

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# Internship and employability of graduates in a “glocal” context

*Davide Arcidiacono\**

## 1. From Education to Employment: Youth between market and reforms

Encouraging school/work alternance and employability of young people is one of the objectives of the European policy for employment (Muller and Gangl, 2003; Zaitling and Trubeck, 2003; Walther, 2006; Berton *et al.*, 2012). The expansion of educated youth in advanced economies does not find a corresponding demand for skilled labour, increasing the risk of unemployment and over-skilling/over-education (Blossfeld *et al.*, 2008).

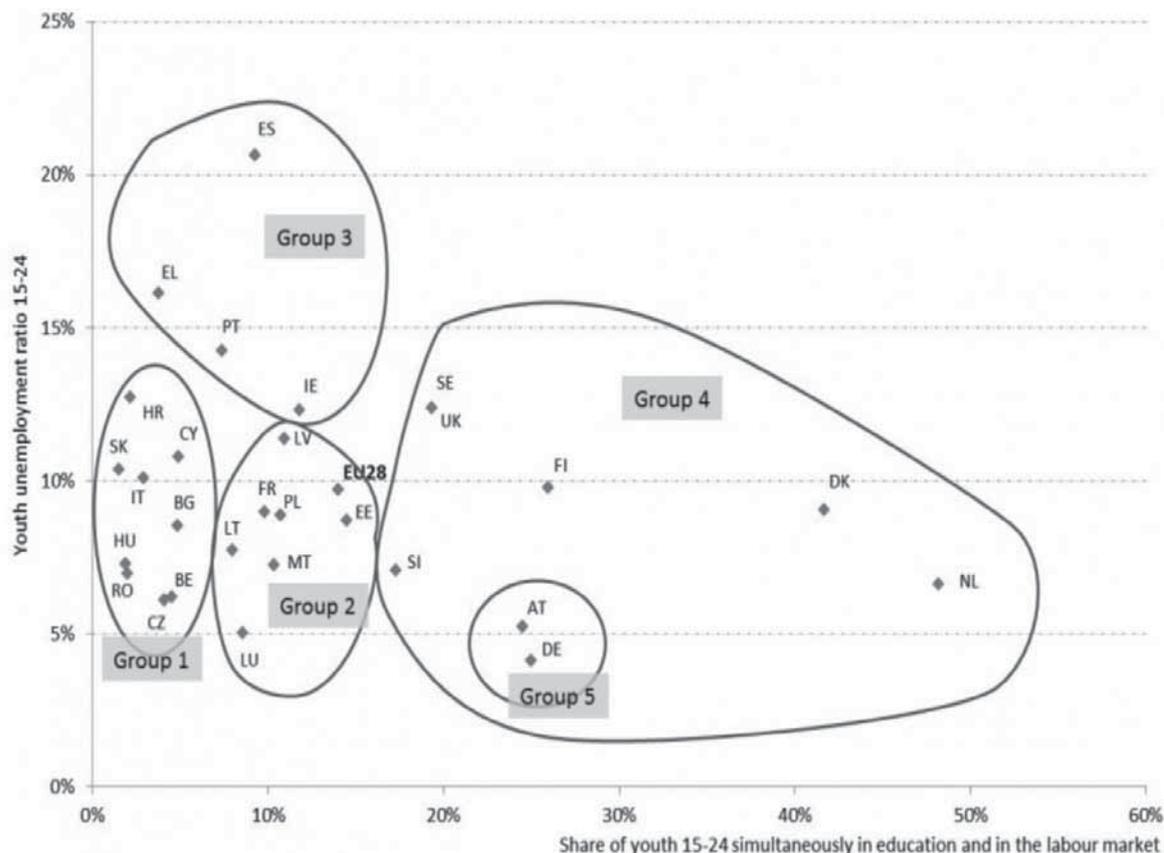
However, the analysis about careers of young people has shown how, in markets increasingly segmented and fluid, the strength/weakness of workers depends on their ability to activate identity resources, human and social capital to rule the transitions from different status, systems of regulation and employment relations (Gautié, 2003), developing a specific *project culture* (Boltanski, 2005).

Job shopping strategies of the young educated are even more experiential and adaptive, as a result of interactions between expectations, professional experiences, formal and informal ones, and learning processes that they are related with. Moreover, their effectiveness is compared with the acknowledged value of their educational credentials in specific organizational and regulatory contexts (Colasanto and Zucchetti, 2008; Caruso, 2007). In particular, these transformations involve the institutional support that educational organizations, such as universities, are required to promote an effective transition to work. It implies a paradigm shift from a

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pedagogical *two stages model* (before training and then work, more prevalent in Mediterranean countries) to a more continental *school/work alternance* model, that implies a new accountability for universities and its relationship with the territory and the productive system.

Fig. 1 - Participation of young people in education and in the labour market

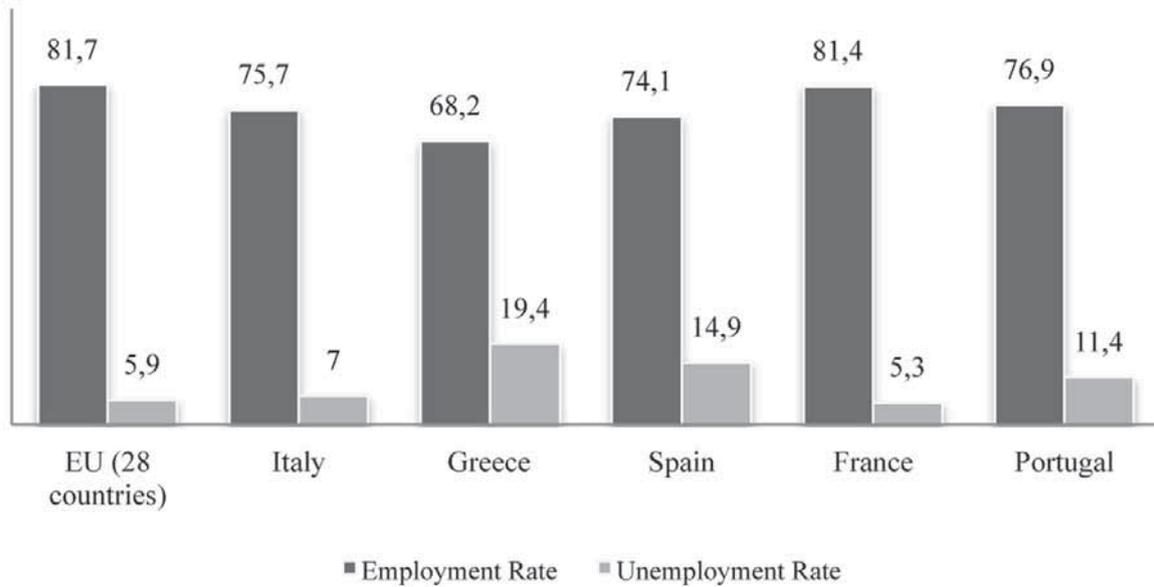


Source: Eurostat, European Labour Forces Survey, 2013

Eurostat data underline the peculiarity of the Italian model of school to work transition, even compared to the rest of the Mediterranean countries. Italy has a youth unemployment rate on the European average, lower than countries such as Spain, Portugal and Greece. At the same time, Italy is peculiar among all other Mediterranean countries, including France, for the lowest proportion of young people that study and work simultaneously (Figure 1). From this point of view, Italy would be more like the East-European countries, such as Romania, Hungary and Bulgaria (group 1), and it represents a polar pattern compared to countries like UK, Denmark and Netherlands (group 4), with a stronger propensity of young people to carry out part-time job while they are studying, or compared to countries

like Germany and Austria (group 5), characterized by educational systems more based on school/work alternance.

Fig. 2 - Employment & Unemployment rate by highest level of education attained in Europe and the main Mediterranean Countries (% of age group 20-64 years)



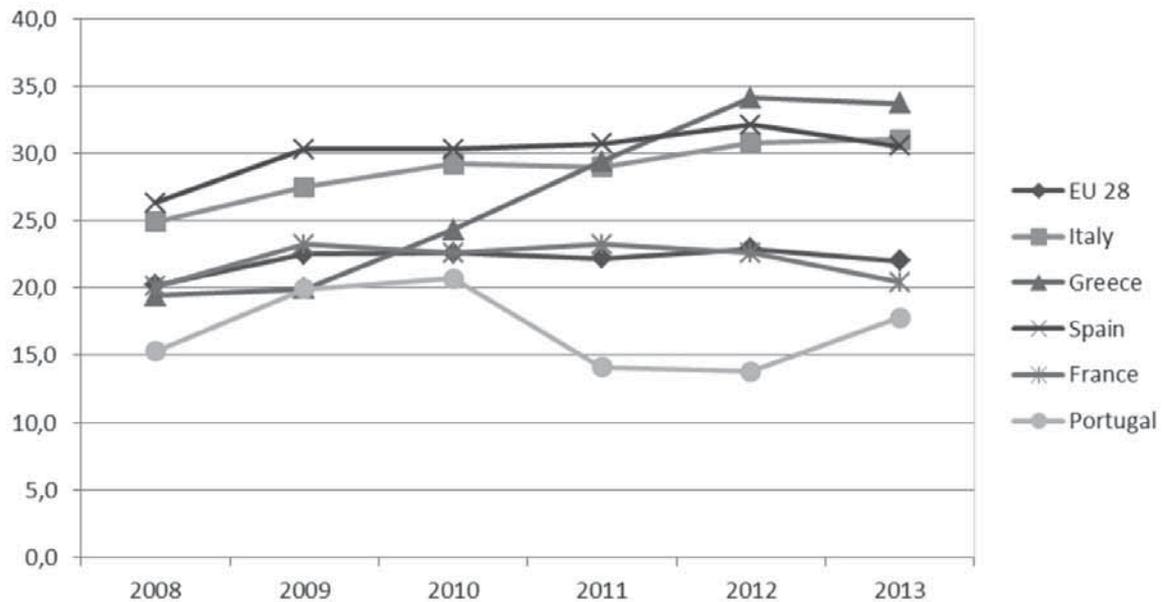
Source: Eurostat, European Labour Forces Survey, 2013

Italy is also distinguishing for the high percentage of young people (aged 15-24 years) who come to the labour market with little or no work experience (22.3% against a European average of 12.9%) (Eurostat, 2009). The same data shows as time in months for the transition to the first job, it is the longest in the Mediterranean area: in Spain a graduated person is expected on an average seven months before finding a job, in Italy nearly 10 months, while France and Portugal are just below the European average (5 months).

Moreover, most of the Mediterranean countries are characterized by the lowest employment rate of people with a tertiary education: while in the rest of the Continent it is around 81%, and in almost all Southern European countries it is rather below this average (Figure 2). The economic crisis of 2008 further eroded employment opportunities for young educated people increasing the discouragement effect, so much that the NEETs rate in the continent has grown in almost all the countries of the Mediterranean area and continues to be particularly high in Italy, Greece and Spain (Figure 3).

Data seems to confirm strongly the salient features of *Mediterranean Capitalist Model* (Amable, 2003), a socio-economic systems with a

Fig. 3 - NEET Rate in Europe and Mediterranean Countries



Source: Eurostat, European Labour Forces Survey, 2013

less dynamic labour market with educational systems poorly dialoguing with the productive system, so weak and more oriented to general skills training, with a little tradition in school/work alternance, because most strongly characterized by small and medium enterprises, often family business, less prone to formal recruitment mechanisms and often unable to appreciate the more educated labour force.

Therefore, it is clear that the issue about how Tertiary Education approaching the economic system, already discussed by the Bologna Conference in 1999, continues to be topical in Mediterranean countries as Italy, in which Academy has been often accused to be a self-referential institution, misaligned with respect to the labour market demand (Moscati and Vaira, 2008; Regini, 2010; Moscati *et al.*, 2010). The Italian University reforms included the empowerment of procedures and services to work (training, work experience and job placement), completing ideally employment services reform, started in 1997 and not fully implemented effectively in many regions, including Sicily (Arcidiacono *et al.*, 2011). However, the relationship between universities and the productive system continues to be less solved without taking into account the dualisms and gaps that characterize Italy (Moscati, 2010).

In this new scenario, internship has taken a central role as a primary means of increasing alternance and employment for young people with a dual purpose: on one hand, encouraging the acquisition of technical and practical skills, combining learning “by absorbing” and learning

“by doing”; on the other, contributing to the construction of a “professional identity”, a sort of self-reflexive moment of recognition of the value and limitations of the skills possessed, essential when career paths of educated youth are becoming more fragmented and uncertain (Franchi, 2005; Franchi and Bresciani, 2006; Cortese, 2012). In addition, internship experience becomes more and more a signal or an access credential (Spence, 1973; Collins, 1973), participating also in the construction of relational networks and weak ties that are at the basis of a successful job searching (Granovetter, 1973; Mouw, 2003).

Finally, in Italy, during the recent economic crisis and the constant growth of youth unemployment, internship is changed by a means of training to an active labour policy (e.g.: the initiatives of the Ministry of Culture, the NEETs project or Youth Guarantee). Although there is no precise analysis on the effects of these initiatives, the recent “chronicles” appear very unflattering on the results achieved, encouraging the need to study harder the Italian case and the effects of internship on the employability of educated youth.

## **2. Internship: patterns of regulation and employability in a comparative perspective**

Models of regulation of internship in Europe can be classified according to its legal status, the relationship with educational institutions, the effects on employability and the level of protection of interns (Table 1).

In the Anglo-Saxon *Open Market Model* internship is considered an entry-level job, often paid and regulated by national labour law, for which there are no specific time restrictions or limits in its access. For example, the involvement of an educational institution is not mandatory. In the specific case of UK, we don't have a specific law for internship even if some firms signed voluntarily a *code of practice*. Access is simply available through applications; we do not necessarily have a third-actor mediation, even if the accreditation by reference letters of professors or former employers could be very important. Moreover, internship may be followed by a final test only in specific cases (for example, it is mandatory for real estate agents, engineers, financial advisors). In other cases, it is considered sufficient a simple exit interview. Interns are normally treated like normal employees who must be paid a minimum wage and their working hours cannot be more than 40 for a week. There are some circumstances, however, specified with the Fair Labour Standards Act (FLSA), in which interns are not entitled to get a minimum wage, for example who receive training for their own educational benefit and the experience provides the recognition of credits.

Tab. 1 - Internship: models of regulation in Europe

	<i>Open Market</i>	<i>Dualistic</i>	<i>Mediterranean</i>	<i>Formative</i>
<i>Reference Country</i>	UK	Germany	Italy	France
<i>Legal status</i>	Disciplined by labour law and voluntary Codes of Practice	A voluntary or compulsory apprenticeship in a school/work alternance system	Training experience related to a course of study or employment insertion policy	Finalized to the acquisition of a degree
<i>Employability</i>	entry level job	entry level job	Limited conversion into a temporary or open ended job	Limited conversion into a temporary or open ended job
<i>Promoters</i>	Firms, Business Associations, Schools, Universities, single workers	Educational Institutions, Business Associations, Trade Unions	Schools, Universities, Vocational Training Centres, Employment Services, Therapeutic Communities, Firms	Schools, Universities, Vocational Training Centres
<i>Protection</i>	Limited restrictions and protections	Agreement between educational institutions, unions and business association for the hiring apprentices	Definition of a Learning Agreement. Weak Time and Numerical Restrictions	Definition of a Learning Agreement. Strong Time and Numerical Restrictions <i>Delai del carance</i>
<i>Wage</i>	Free or Minimum wage	Mandatory	Free or mandatory expenses reimbursement	Mandatory if it lasts more than 2 months
<i>Assessment</i>	Only for some specific professionals	Skill Assessment on a specific project work	None	None

The German *Dualistic Model* is certainly the best known. Internship in itself does not exist and it is absorbed in a sort of apprenticeship that is part of a training program related to a specific course of study. A corporative system with strong influence of trade unions determines a high offer of qualified labour forces, producing also a lower rate of youth unemployment. The duration of internship may vary from 3 to 6 months (for

the voluntary '*praktikum*'), up to a maximum of 24 months for students. Company usually ask interns a full-time commitment. Remuneration in mandatory '*praktikum*' is at the discretion of the firm (but it is provided in almost all cases), while for volunteer internship the normal legal framework of labour contracts is applied and it depends on the commitment level of the intern. The contract is made directly between the intern and the company and it summarizes the main rights and obligations of the two actors. At the end, the organization of training has the role of certifying the learning results.

In the French *Formative Model*, internship is a temporary experience linked only to the educational path. In France, it is the result of the recent reform in 2006, after months of struggle, claims and actions by the movement *Generation Précaire*. After 2006 any internship experience in France must necessarily be regulated by an "internship agreement", where it is mandatory to define the duties of the candidate, determining the exact length of stay (by law no more than 6 months), the weekly hours (maximum 35 hours), the conditions for which the intern may be absent, as well as determining the amount of his reward. It should be compulsory only for internships lasting more than two months. As a part of the curriculum of a student, the French law defines sharply the difference between internship and work experience. This element is one of the fundamental aspects of French regulations. Some stakes are created to preserve this distinction: it was forbidden to use an intern to temporarily replace a permanent worker, or to occupy a seasonal job or to take a job that would require the opening of an open-ended position or, again, to temporarily increase the productivity of the company. Above all, it is mandatory to have behind a school facility that sign and approve the agreement making such distinction really protected. It is also forbidden the ability to enter into agreements of internships for young people who have already completed their studies. Recently in 2011 the *delai de carence* was introduced, a rule that requires companies an interval of two months (or better, one-third of the total duration of the internship) before they can integrate a new intern in the same position and for the same tasks.

Finally, we have the *Mediterranean Model*. It is a hybrid model that seeks to bring together warranties and obligations of the German and French models but without that institutional cooperation and synergy between the actors involved to have strict regulative limits in the use of this instrument. The result is a soft regulation model without a clear distinction between intern as a subject to be trained or a novice at work. In addition, the powers of the promoter of the internship (for example the placement office of Universities and Schools) of control and auditing actions are very limited. Moreover, there is no mechanism for certification or well-defined quality standards for training, so the learning outcomes

are very heterogeneous. The aspects of monitoring the activities of interns is a troubled issue in countries with a strong tradition of undeclared work and where there are internships that completely escape the law and which are absolutely illegitimate. In this scenario, internship frequently generates learning outcomes incongruous with the educational profile of the student.

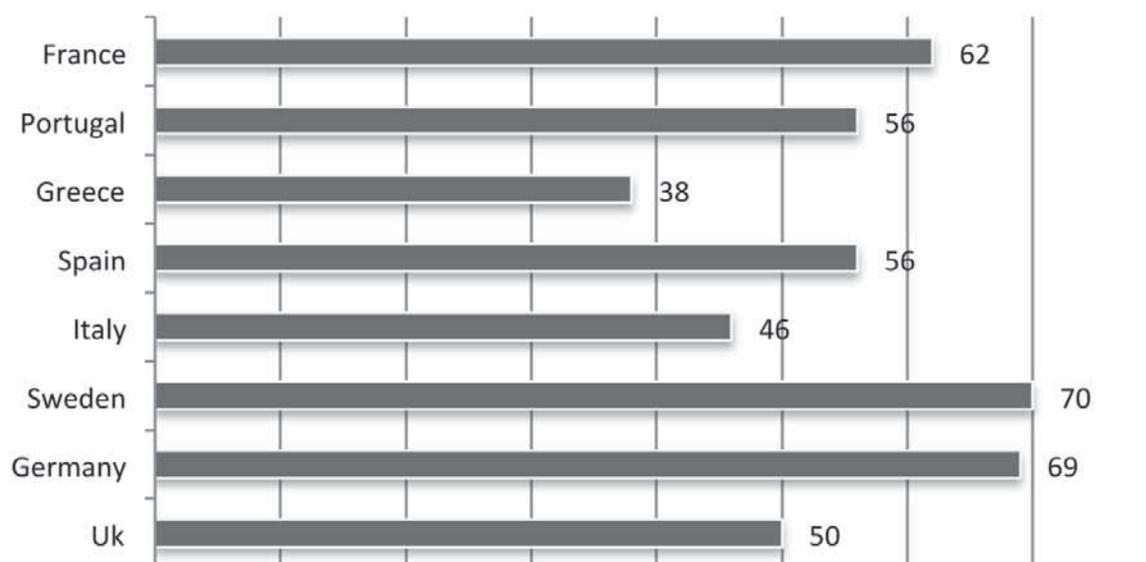
In Spain, for example, the definition of internship is described in the “*Programa de Pràctica Formativas*”. The law allows making an internship within 5 years after graduation (7 years in case of disability) and the duration is from a minimum of 6 months to a maximum of 2 years. The main promoters of internships are Vocational Training Centres (*Escuela talle y Casa de Oficios, Talleres de empleo*), Secondary Schools, Universities, Public Employment Services, but also the companies directly. The salary of an intern is fixed by a collective agreement and shall not be less, for the first year, the 60% of the wage in that industry, and the 75% for the second year. Many are also universities that establish agreements with business associations, or directly with the hosting companies, to offer scholarships for traineeships (*Becas en Empresa*) destined to students who have completed at least 50% of its credit.

In Greece, internship is called “*Praktiki Askisi*” and it has different purposes: for young people who attend a secondary school (Gymnasium / High School) or post secondary (university or TEI - Technological Education Institute) is the practical phase of the course of study, and it is in many cases mandatory, or it consists in a period of training required for accession to the world of work. The average duration of the internship is 6 months but hosting companies are not obliged to pay compensation for interns.

The Italian model seems to be more ambiguous: on the one hand it appears far away from the German dualistic model, above all because of the lack of a culture of school-work alternance and the less cooperative arrangements between the institutional actors involved; on the other hand, appears to be limited in time and access, with limited perspectives in employability terms, so it could not to be qualify as an entry level job. However, since the distinction between *curricular* and *extracurricular* introduced with Treu Law (1997), it not even remains limited only to those who attend a course of study, as in France. Recently, law 92/2012 and subsequent Regional Guidelines proposed the goal of increasing protection for interns. However, the reform accentuated the legislative fragmentation at regional level and, through the provision of a mandatory repayment, made the judicial status of interns even more ambiguous, transforming them in a sort of atypical and cheaper workers, creating also an additional competitor for the apprenticeship contract. In addition, the reform left totally untouched the question of quality in training and the provision of reliable mechanisms of certification of the skills acquired.

European data confirm how the opportunities of entering in the labour market are correlated with internship (Peschner, 2013), so much so that 61% of young Europeans would find a job at end (McKensey 2013)<sup>1</sup>, but in Italy this percentage drops to 46% (Figure 4). According to data of the following report, the main problems of our country would be attributable to a large mismatch between the skills required by firms and those owned by graduates: the Italian firms interviewed in 47% of cases complain the lack of adequate skills in young people and this percentage would be higher than other countries analyzed (eg: UK 18%, Germany 26%), even among the Mediterranean countries (Spain 33%, France 35%, Greece 45%). Moreover, there is a lower confidence and recognition of the value of their credentials: only 37% of Italian graduates said their degree has increased the chances of employment, just over the French graduates (35%) or Greek ones (33%), but less than Spanish graduates (39%), and well away from Swedes (51%) and Germans (53%).

*Fig. 4 - Young people who declare to get a job after the internship after six months of leaving education (%)*



Source: McKinsey, Education to Employment, 2013

Furthermore, at the Italian national level, it should be highlighted how the lower value and the lower return on employability of internship are the effects of typical characteristics of the productive system and the regula-

1. The mentioned results are the conclusions of comparative survey conducted in eight European countries (UK, Germany, Sweden, France, Spain, Italy, Greece, and Portugal).

tion model adopted (Tiraboschi, 2011). National surveys show that 90% of HR managers in Italy (GIDP, 2012) uses internship as a privileged channel to recruit educated labour force but, however, only 56% of graduates was involved in a post-graduate internship (Almalaurea, 2012).

Isfol survey (2009) highlights that in 44% of case Italian interns expect to find a job in the host company but only 26% of them receive a job offer. Excelsior-Unicamere survey (2012) shows that the percentage of companies that hired an intern is around 11%, but that drops to 9.9% if we focus only on the Southern regions. In particular, Sicily would record the lowest percentage of internships turned into assumptions (7.7%).

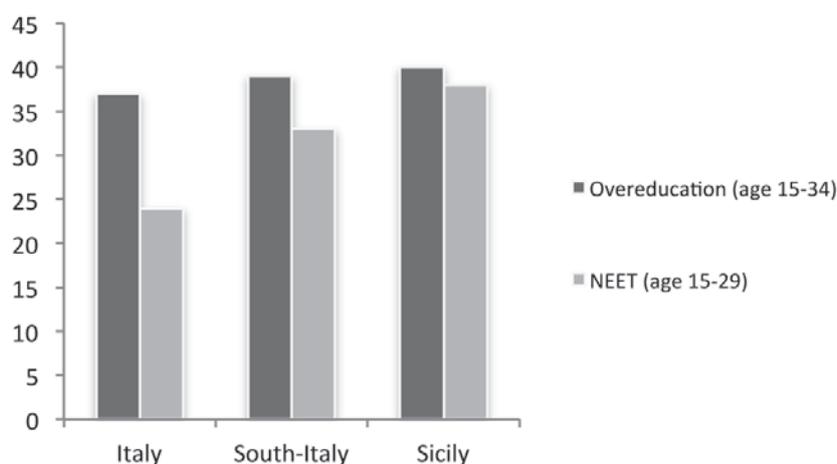
### **3. Exploring the local dimension: a field study**

Examining in depth the relationship between regulation of internship and employability is also necessary to explore the sub-national dimension. This analysis may be useful to understand how an instrument like internship faces the limits and constraints that may emerge at the local level. It has to be considered how the Italian case, among Mediterranean Capitalisms, is a “regionalized” model (Trigilia and Burrone, 2009, Arcidiacono, 2014) based on specific territorial cleavages deeply rooted, where very heterogeneous development patterns coexist and an entrepreneurial tissue with conflicting interests that may explain the different graduation and effectiveness of National and European policies of convergence. The Italian “paradox” seems to be characterized by a progressive increase in the levels of education which, however, corresponds to a qualitative stagnation of the employment structure. In particular, the South of Italy, especially Sicily, is characterized by a higher unemployment rate of young educated (Reyneri and Pintalidi 2013; De Luigi and Rizza, 2011), with considerable deficit in terms of the efficiency of employment services and a less dynamic productive system (Avola and Cortese, 2013; Palidda, 2014). Similarly, the risk of over-education and discouragement appears higher in the South than in the rest of the country (Figure 5). The fragility of the graduates in the South produces a veritable migratory “haemorrhage” towards the centre-north of the country (it is estimated that about 30,000 persons per year) with a strong risk of brain drain.

The local dimension of the analysis appears therefore an opportunity for considering how the processes of coercive isomorphism and convergence, at European and national level, are compared with the socio-institutional environment of a specific southern territory.

The next paragraph presents the main results of a local study with the following purposes:

Fig. 5 - Over-education Neet rate in Italy -2012 (%)



Source: Istat, Labour Force Survey, 2013

- evaluate the quality of the learning environment during the internship and found the relationship between formal and informal regulation of this experience;
- evaluate the effectiveness of internship in guiding and promoting the employability of graduates.

These objectives were pursued through a survey to a sample of graduates between 2011 and 2012 (N = 1157), stratified by degree course, at the University of Catania, using the Cawi method.

#### **4. Post-graduation internships and employability: main results from the local analysis**

A first element to examine the real value of the internship is the learning environment in which the interns have to work once inserted in the company.

The training program, the main document where the personalized learning path and the operating conditions of the interns are described in details, is a starting point for this analysis. The contents of the training program are for the most part (45%) defined in a static perspective, considering above all contingencies linked to business in a short term perspective, more simply considering only the job vacancies. Rarely the training program is the result of an annual planning activity performed on the basis of an efficient monitoring of corporate needs, nor is it based on the construction of innovative projects that look to interests and possible future investment company (only in 27% of cases) in areas where the inclusion of new skilled labour forces may play an important role also in

the production of innovation. In addition, only in 20% of cases there was a co-construction and a real collaboration between firms and the promoter of the internship, like University, as expected and desirable considering the provision of the recent university reform and the recent national/regional guidelines on internships.

Data show a low level of corporate investment on training activities for trainees. The interns interviewed have no problem to say that in almost half the cases there was not any form of training when they start their experience inside the firm, and they have been entrusted for the most part by direct practice on the job. Other forms of training appear less used in the analyzed sample, above all that are more geared to the acquisition of knowledge about the overall strategies and internal work processes, such as company visits (used in approximately 20% of cases) or job rotation experience (only 13% of trainees). If we also look at the content of this training, it is not surprising that almost all the trainees converge on technical skills related to the task and the reality of the host firm (firm-specific), and only a residual seems to concern skills (such as language or computer skills) expendable outside the company (less than 40% of the cases), or skills related to the overall management of the company that can help the trainee in a deeper understanding of business dynamics and processes (products, markets and strategies) which covers about only 30% of the respondent interns.

Furthermore, data highlight how they are not always mentored concretely to the specific company tutor (only in 35% of cases), specifically named in the training program, but rather directly to the head office (37 %) or the HR Manager (28%). Considering the operating conditions of interns (Figure 5), data shows how the trainee performs the tasks assigned with great autonomy and discretion, with high responsibility with respect to a specific project assigned, showing high availability to extend working time, as well as a total membership with the corporate culture. Less space seems to be left at the creative dimension or a proactive management, albeit within a high qualification of the assigned tasks. However, for such a commitment does not always corresponds adequate recognition in terms of integration of the trainee within the company: 51.9% have never been involved in an internal course reserved to all other employees, and 43.1% has not been granted access to some facilities or structures of the company, while almost a third have never had the chance to use software or tools reserved for normal employee or also a 30% was excluded from meetings and conferences.

Moreover, 70% of interns said they did not receive any refund and that 73% would be around 300 Euros. The repayment to the trainee seem to be linked to the type of company and to the promoter of the internship: 81% of trainees that worked in local firms did not receive any reimburse-

Fig. 6 - During an internship, an intern has to... (Multiple choice-%)

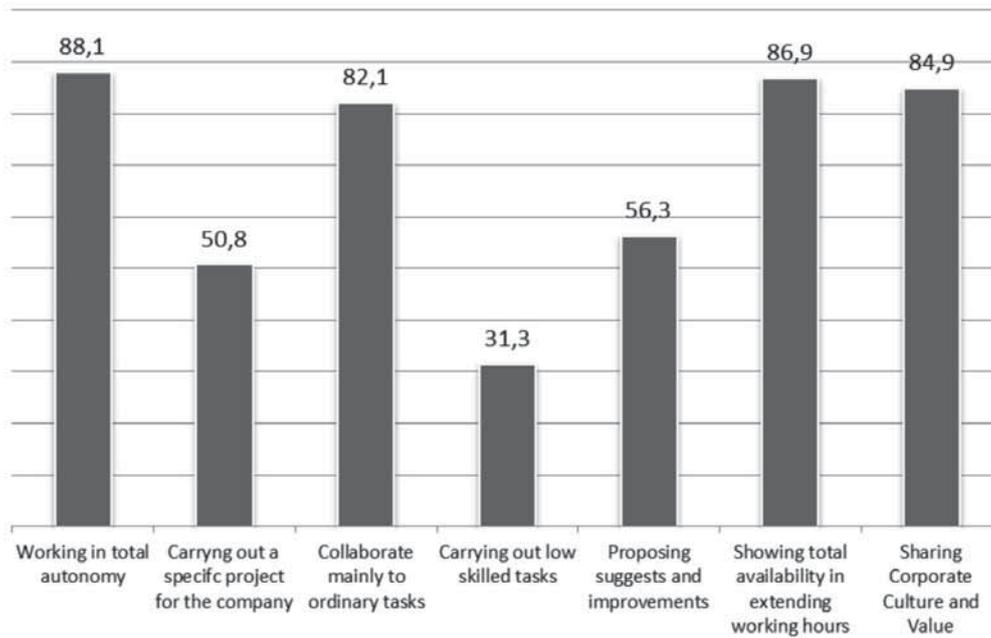
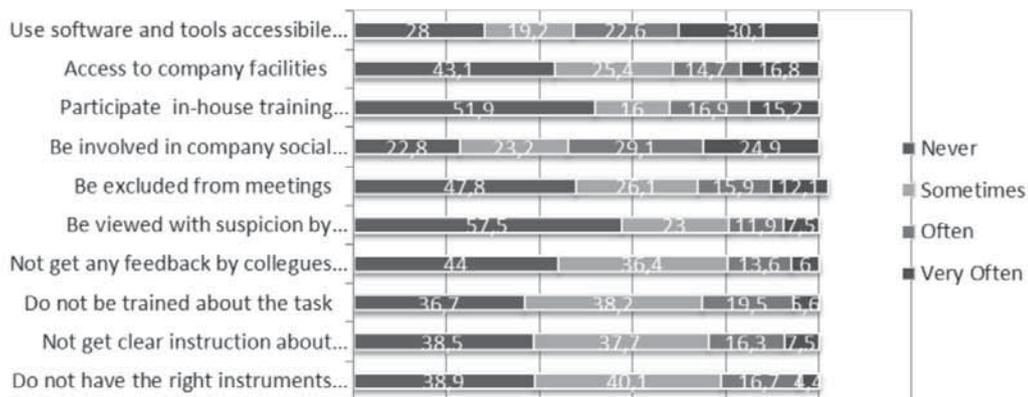


Fig. 7 - During the internship, how often did you...



ment, compared to 56% of interns that worked for national or multinationals companies. Similarly, internships activated at the university placement office show a slightly higher percentage in repayment compared to those activated by other proponents (34.8% versus 27.3%). However, if we look at those few paid internships, the amount of reimbursement is higher in those placements activated outside of the university placement office (77.7% of them have a reimbursement of up to 300 Euro, while for internships activated by the University Placement Office the refund overcome 300 Euro only in 36.4% of cases).

However, in a learning environment not always easy, interns in almost 70% of the cases declared to be satisfied with their training experience in terms of the skills learned, while more than 50% defined it not very useful from the point of view of finding a job. The trainees interviewed declared that 86% of them did not receive any proposal of employment at the end of this experience. The remaining 14% is made up of 11% who accepted this proposal and a 3% that rejected it because it was about or less skilled compared to their educational credentials or because it had been proposed to work without a contract. The 74% doesn't work currently, and only 6% say they work in the same company where they made the internship, which is associated with a further 7% claiming to work at least in the same industry. The remaining 13% is divided between those who preferred a path of self-employment and those who have found work experimenting with entirely new paths. Having obtained a degree in 2011 or 2012 does not seem to have any effect on the current condition of employment (27.4 % of graduates in 2012 work compared with 25% of those in 2011).

In relation to the probability of being currently employed (Table 2), the values of the regression model calculated would show as between employability and training there would be a negative relationship, albeit with a very low level of significance. The same thing goes for the internships activated with the support of University Placement Office. The employability of graduates would be more traditionally linked to the strength of their studies (b:0.95 sig:0.01): those who have a degree in economics, engineering and medicine are employed more easily without making an internship, rather the provision of a period of extracurricular training may restrict or delay the entry opportunities on the labour market. However, certain conditions peculiar to the internship can play a positive role in employability of graduates, not so much the business features but rather the presence of a refund for the training activities carried out. Multivariate analysis shows that the presence of a refund increases the probability of being employed (b:1.32 sig:0.00), This aspect represents not only a symbolic issue but a discriminating factor about the real quality of the experience that demonstrates the concrete commitment of the company in human resource training and its potential interest for recruiting interns.

An additional regression model was also calculated in relation to the perceived congruence between the work done and university studies (Table 3). The results of this new model, on one hand, further confirm the value of the dependent variables identified in the previous one: having a strong degree is much more significant in explaining also the congruence of the current work, but it is also the experience of a paid internship confirm that this item would also increase the selectivity in research of a future job. In addition, having done an internship through the support of

Tab. 2 - Binary Logistic Regression- Probability to be actually employed

		B	Sig.	Exp (B)
<i>Anagraphics</i>	Female (rif.)	-	-	- 0,9
	Male	-0,053	0,887	49
	Age: < 25 years old (rif.)	-	-	- 1,0
	Age: ≥ 25 years old	0,035	0,946	35
<i>Educaton</i>	Not continue to study (ref.)	-	-	- 1,0
	Continue to Study	0,015	0,967	15
	Bachelor Degree (ref.)	-	-	- 0,6
	Master Degree	-0,411	0,256	63
	Weak Degree (ref.)	-	-	- 2,6
	Strong Degree	0,957	0,010	05
<i>Internship conditions</i>	Never Made an Internship (ref.)	-	-	- 0,2
	Made an Internship	-1,315	0,062	68
	Never gone to Univ. Placement Office (ref.)	-	-	- 0,3
	University Placement Office User	-0,935	0,025	93
	No training during the internship (ref.)	-	-	- 1,6
	Training during internship	0,520	0,111	82
	No tutorship (ref.)	-	-	- 1,2
	Tutorship	0,257	0,481	93
	Duration: less than 6 months (ref.)	-	-	- 0,5
	Duration: More than 6 months	-0,644	0,095	25
	No refund (ref.)	-	-	- 3,7
	Refund	1,325	0,000	64
	Local Firm (ref.)	-	-	- 1,4
Multinational or National Company	0,350	0,362	19	
Nagelkerke R Square		0,395		

the university placement office seems to have a positive influence on the congruence variable (b:1.07 sig:0.03). Those who went from university offices, in fact, is not currently working more than others but plays most frequently a work perceived more congruent with his study.

Tab. 3 - Binary Logistic Regression- Probability to get a congruent with the University Degree

		B	Sig.	Exp(B)
<i>Anagraphics</i>	Female (rif.)	-	-	-
	Male	0,033	0,937	1,034
	Age: < 25 years old (rif)		-	-
	Age: ≥ 25 years old	0,352	0,591	1,422
<i>Education</i>	Not continue to study (ref)		-	-
	Continue to study	0,036	0,931	1,037
	Bachelor Degree(ref.)	-	-	-
	Master Degree	-0,204	0,633	0,816
	Weak Degree (ref.)	-	-	-
	Strong Degree	1,581	0,000	4,860
<i>Internship conditions</i>	Never Made an Internship (ref.)		-	-
	Made an Internship	2,765	0,002	0,063
	Never gone to Univ. Placement Office (ref.)		-	-
	University Placement Office User	1,077	0,037	0,341
	No training during the internship (ref.)		-	-
	Training during internship	0,465	0,236	1,593
	No tutorship (ref.)		-	-
	Tutorship	-0,268	0,558	0,765
	Duration: less than 6 months (ref.)		-	-
	Duration: More than 6 months	-0,278	0,542	0,757
	No refund (ref.)		-	-
	Refund	1,518	0,000	4,561
	Local Firm (ref.)		-	-
	Multinational or National Company	0,514	0,243	1,673
Nagelkerke R Square		0,597		

## 5. Conclusions

Data collected at the local level confirm the majority of the remarks pointed out but the international and national studies about internship. However, local data put in evidence also a poor planning and a low level of investment in training and coaching interns with a high risk to be more projected towards routine activities, without no challenging tasks that could fully exploit their human capital. Local companies seem to share a recruitment strategy of interns as a resource to solve staff shortages or business needs in a short-term perspective, forgetting the training aims of internship. The role of the tutor seems very limited and would require specific training, as it already happens for the apprenticeship contract in several Italian north-regions, but not in Sicily.

In the internship experience there seems to prevail a model of tutorship and a training design as “bureaucratic artefacts”. The purpose of bridging academic and economic system through the internship instrument shows that some normative principles are translated into mere “ritual” procedures with limited impact on learning and employability effects. This result is alarming if we consider the deficiencies of the Italian system of monitoring and certification of skills. Differently by the German model, the end of the internship is not subject to any real verification of the skills learned, while the law requires that all the skills acquired are included in a training booklet. However, a regional legal vacuum on how to deliver it and how to identify the subjects for its validation still influences its release throughout the national territory.

Furthermore, data testify how much has to be done to avoid that internship become insignificant in transition to work of graduates, as highlighted of in the recent proposal to the European Commission – COM (2013) 857 – on the introduction a Quality Framework for Traineeships, that defines a standard and a common evaluation system on the continent.

Despite the difficult operating conditions, it should also underlined the overall satisfaction declared by the interns interviewed, confirming the importance of the instrument as a “socializing” work experience. More problematic and modest, however, is the impact on employability in the national and local tissue. This should be contextualized compared to the peculiarities of the market, mostly characterized by micro-entrepreneurship, working, especially in the south regions, in the service sector with low added value and with a high tendency to undeclared work.

In the end, we must reflect on the role that the university may have a in bringing out unexpressed needs of companies through more intense relations with the territory. The University placement services, adequately supported, could play a very important role in the activation and promotion of a dialogue with the productive system, helping to orient also

choices about training content of the degree course. In this sense, the possible intervention, supported by data, is to increase the empowerment of the promoters, such as university placement office as a principal guarantor of the quality of the learning experience for a more effective match between demand and supply of skilled labour forces.

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# **Navigating difficult waters. Employability challenges and methodological innovations**

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## **1. Perspective analysis to enhance employability: the role of European Union**

In an increasingly knowledge-driven economy, efficiency and competitiveness depend on knowledge, skills and capabilities that people are able to foster. The developed economies come to rely on knowledge-driven business and employability as a source of competitive advantage because national prosperity depends on upgrading the knowledge, skills and the pro-activity of the workforce (Brown, Green, Lauder, 2001). In such an environment, national governments can no longer guarantee employment, limiting their role to providing the opportunity for all to enhance their employability, which has led to the rapid growth in higher education (Keep, Mayhew, 1996). From an individual point of view, employability is also seen to reflect the shift away from the bureaucratic career structures of the past that offered stable career progression (Collin, Young, 2000). Firms have become leaner, flatter and prone to rapid restructuring, making them incompatible with the expectation of a bureaucratic career. This has led companies to highlight the need for employees to not only remain employable within their current jobs but in the external labour market, if they should find themselves in the category of 'surplus' workers (Sennett, 1998).

Nevertheless, employability appears as a complex and multi-faceted concept. The difficulty in applying a straightforward definition has been

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recognized by various studies (see among others McQuaid and Lindsay, 2005). McQuaid and Lindsay (2005) highlight the existence of two alternative perspectives in the employability debate: one focuses only on the individual's characteristics and skills, referring to the individual potential to obtain a job, while the other perspective takes into account also external factors (i.e. labour market institutions, socio-economic status) that influence a person getting into a job, moving in between jobs or improving their job.

De Grip *et al.* (2004) call these factors 'effectuation conditions', (i.e. the conditions under which workers can effectuate their employability). This paper focuses on the second perspective, assuming that any definition based only upon individual characteristics and skills would disregard the potential influence of the institutional settings that support personally or collectively the transition from school to work, and help the employed workers to stay in their job and the non-employed workers to find a job. That is why the paper will adopt as reference the definition given by de Grip *et al.* (2004): "The capacity and the willingness to be and to remain attractive for the labour market, by anticipating changes in tasks and work environment and reacting on them". The paper will reflect on policies and tools allowing, making the labour market information system more transparent, both at national and international level, and workers more efficient in monitoring/evaluating the gap between skills owned and those needed by firms.

European Union first has launched a series of initiatives in this sense, defining a framework of reference, with sets of tools, skills forecast by sector and professional level, to help people in investing in the right learning project, in order to become and to rest employable. The framework is shown in European Commission flagship initiative "An Agenda New Skills for New Jobs" (2009). It aims at mapping current and future demand for occupations and the corresponding skill requirement, while recognizing that the links between the two are complex.

Framework also foreseen:

- skills forecasts in the long term by the European Centre for the Development of Vocational Training (CEDEFOP), integrated by analysis of emerging trends at sector level and the development of sector skills councils;
- the European Framework for key competences for lifelong learning, which defines the eight key competences that everyone should have to thrive in a knowledge society;
- the Classification of European Skills/Competences, qualifications and Occupations (ESCO), currently under development and which describes the most relevant skills, competences and qualifications of occupations;

- the European Qualifications Framework (EQF), which defines qualifications on the basis of learning outcomes so everyone can understand what they mean in practical terms;
- Monitoring Labour Market Developments in Europe project. The objective of this project is to increase labour market transparency for all stakeholders who need information about recent developments on the demand side of the labour market.

Specific projects with ILO and OECD are part of the same initiative.

The European Vacancy and Recruitment Report (EVRR) is another key component of the European Commission's endeavour to develop a systematic labour market monitoring system focusing on changes in the recruitment demand for skills using occupation as a proxy and combining information from a wide variety of data sources – including employment contractual arrangements, education qualifications and so forth. The report also includes an analysis of the activities of recruitment agencies – both public and private – as they represent the interface of labour demand and supply, matching vacancies with suitable jobseekers in particular segments of the labour market.

While there are many benefits to be derived from enhancing the level of transparency in the European labour market, the project faced a number of challenges. First of all, the analysis of recruitment demand does not necessarily produce similar results as an analysis of employment. Changing demand in recruitment may impact on employment trends in a variety of ways. Generally, an increase in vacancies will be reflected in an increase in employment where new job creation is in excess of job losses (an expansion in demand). However, many job openings arise because of the need to replace workers who have left the labour force as a result of retirement, emigration, or for other reasons. In addition, the single biggest generator of vacancies is workers changing their jobs, either voluntarily or because their employment contract has come to an end (these cases have increased in the last decades when flexibility has touched also labour contracts). Others problems have consisted in the limited availability of comparable vacancy data for the whole of Europe, together with a significant change in 2011 in the main classification used for a breakdown by occupation as provided by the International Standard Classification of Occupations (ISCO), causing a disruption in the time series. Overall, the project is a work in progress, building up more comprehensive information and a longer-term perspective over time.

Benefits of tools briefly described may be maximized through the use of Information and Communication Technologies (ICT). The potential benefits are clear, because ICT-based services have the capacity to overcome problems of distance and remoteness; to provide more accurate and detailed labour market vacancy information; to deliver a more respon-

sive and interactive model of service provision; and to promote social networking, also among disadvantaged groups.

In any case, ICTs continue to have a profound impact on employment and skills across all sectors, and labour market. This is particularly true given that unemployment still is remaining high in most OECD economies, with current policy attention towards promoting a transition to green growth in which ICTs play a key role. That is why; the paper will focus on skills demand in this specific sector.

## **2. Green ICT: A developing skills area in post-crisis Europe**

One key area governments have focused attention on is the development of ICT skills and employment in the evolving “green” and “smart” economy because of the potential of eliciting a double dividend by “both jumpstarting job creation and accelerating the transition towards green growth” (OECD, 2011d). Indeed, as unemployment remains high in most OECD countries, the economic stimulus packages of many governments addressing the economic crisis have been explicitly aimed at boosting employment, with a significant number having a strong commitment to promote the creation of “green jobs”.

In this case, while ESCO does not focus specifically on skills for the transition to the green economy, useful contributions to skills anticipation in this area are made by OECD specific studies and national plans on the basis of country data-base. These plans will further the development of ICT-related employment as many of the promoted green jobs are related, directly or indirectly, to ICTs (i.e. jobs in R&D, production, deployment, maintenance and use of green technologies such as “smart” electricity grids and wind energy turbines). Thus, demand for ICT-skilled workers will continue to increase not only in the ICT sector, but more rapidly across the wider non-ICT economy, for example, to develop and deploy ICT- and Internet-based products and services such as software in non-ICT sectors (i.e. financial services) or data-intensive products and services such as automobile systems or the *smart grid*. As a consequence, skills for big data management and analytics (i.e. SQL and Apache Hadoop) and the development of internet-based software applications (i.e. Ajax and PHP) are increasingly in demand. Additionally, network security skills will be in greater demand, particularly as ICTs are increasingly adopted across sectors, as well as jobs related, directly or indirectly, to ICTs (i.e. jobs in R&D, production, deployment, maintenance, and use of green technologies such as “smart” electricity grids and wind energy turbines).

Reducing the environmental impact of ICTs and through ICT applications, makes considerable demands on skills, as environmental skills are

needed in addition to ICT-related skills as well as sector specific skills, for example, on electricity, transport and building management (including field-specific knowledge of legal frameworks).

The data also indicate there is growing demand for ICT skills and yet there are still parts of the population that are significantly underrepresented in ICT-related jobs. Women, in particular, still account for a low share of roughly 30% of ICT sector employment and almost 20% of ICT specialist occupations.

In many cases, these skills need to be complemented with sector-specific skills such as business and administration skills or, as in the case of green ICTs, with environmental knowledge. This means that ICT employment will require relatively high levels of experience and education and governments may need to adjust policies accordingly.

Higher-education institutions have a pivotal role to play in providing the needed skills related to ICTs and green ICTs in particular. However, the total number of graduates in computer science has declined since 2006, increasing the risk for skill shortages in OECD countries. Nevertheless, the very new and rapidly changing nature of advanced ICTs including green ICTs makes workplace training, in addition to formal education, increasingly important for augmenting and adapting workers' skills. This is especially true for older workers, for whom skills acquired through the educational system are likely to be missing or substantially depreciated in the field of green ICTs. Table below tries to list representative occupations<sup>1</sup> where demand can be expected to increase due to the deployment of selected green technologies.

However, as the *OECD Information Technology Outlook Policy Questionnaire 2010* reveals, only a minority of governments are explicitly promoting green ICT-related skills and jobs. In contrast, almost half of OECD governments have put an emphasis on measures for tackling the job crisis; with some of these measures being related to green ICTs. Overall, most OECD governments have established policies and programmes furthering IT education and training; improving labour market information and promoting international sourcing of ICT skills.

With reference to the first point (IT education and training), in most cases governments are upgrading already existing education programmes in order to promote (IT) education to more people, with a particular focus on the unemployed.

1. Since there is no widely agreed on definition for green job that used as reference has been provided by Martinez-Fernandez, Hinojosa and Miranda (2010), "jobs that contribute to protecting the environment and reducing the harmful effects human activity has on it, or helping to better cope with current climate conditions".

Tab. 1 - Green technologies - Representative occupations in demand

Energy efficient building	Electricians, heating/air conditioning installers, carpenters, carpenter helpers, construction equipment operators, roofers, insulation workers, industrial truck drivers, construction managers, building inspectors.
Smart grid	Computer software engineers, electrical engineers, electrical equipment assemblers, electrical equipment technicians, machinists, team assemblers, construction labourers, operating engineers, electrical power line installers and repairers.
Wind power	Environmental engineers, iron and steel workers, millwrights, sheet metal workers, machinists, electrical equipment assemblers, construction equipment operators, industrial truck drivers, industrial production managers, first-line production supervisors.
Solar power	Electrical engineers, electricians, industrial machinery mechanics, welders, metal fabricators, electrical equipment assemblers, construction equipment operators, installation helpers, construction managers
Cellulosic biofuels	Chemical engineers, chemists, chemical equipment operators, chemical technicians, mixing and blending machine operators, agricultural workers, industrial truck drivers, farm product purchasers, agricultural and forestry supervisors, agricultural inspectors.

Source: Pollin and Wicks-Lim (2008)

In Germany, for example, ICT skills for women, the young, and the elderly are being promoted through different initiatives. Women are targeted through the “National pact for women in ‘MINT’ occupations”, which aim at bundling projects to encourage more female pupils and students to pursue MINT (mathematics, informatics, natural sciences and technology) careers and conducting new activities and campaigns. In addition, the youth in Germany are beneficiaries of the “Germany: IT Powerhouse” initiative; while older workers benefit from the Federal Government initiative “IT 50 plus”, in collaboration with the ICT business association BITKOM and the IG Metall metalworkers union. Italy’s E-gov 2012 Strategy will invest EUR 241 million during 2009-12 to increase digital innovation in schools, including: the widespread of Internet connection for all schools, digital boards for didactic purposes; and digital services for interaction with parents. Spain’s Internet in the Classroom programme disbursed over EUR 450 million between 2006 and 2009 to equip schools with broadband connections and IT equipment for educational purposes; the programme is entering its second phase under the title School 2.0. Spain has also developed AGREGA, a national

repository with downloadable educational content for teachers. Switzerland, the I-CH project is promoting vocational training for ICT professionals. It is a modular system currently offering over 100 modules for basic and advanced training. Finally, Hungary is promoting e-business and basic ICT skills through its five-year Training Framework Programme for Increased Adaptability in the Information Society (TITAN).

Referring to the last two points of national initiatives (labour market information and international sourcing of ICT skills), many governments are providing Internet based portals for job ads and searches. In a few cases, governments are also providing lists of occupations and skills, where shortages have been observed or are most likely to occur in the near future. To this theme, central in this discussion, is dedicated the next part.

### **3. Web-based tools (ICT)**

In an attempt to develop the quality and expand the reach of services for job seekers, policy-makers have promoted solutions delivered through ICT<sup>2</sup>. The platforms satisfying the principle of *transparency* of public governance demonstrate how technology representing an opportunity to develop more inclusive labour market policies aims to reduce the information gap about occupational opportunities within a local-global framework in which social dialogue should play an incisive role. These digital devices are also assigned the aim to ensure a participative citizenship supporting the *capability* of public and representative associations to raise awareness and exchange information and opinions about the action policy pursued.

Among the web-based tools introduced within national and international policies there are the European Job Mobility Portal (EURES) and the systems to forecast employment and training needs (i.e. Isfol, O\*Net, Noc). These IT platforms make available a set of quantitative and qualitative information on occupational dynamics in labour markets (local and non local). They can also introduce individuals and organizations using self-assessment techniques of their skills and possible training needs in respect of a specific profession (ie O\* Net Interest Profile, Ona).

#### *The European Job Mobility Portal (EURES)*

To reduce the individual and social costs of skill mismatching (such as, low job satisfaction of employee, wasteful turnover for businesses) Euro-

2. ICT is here defined as computing and telecommunications hardware, applications software and services in the relevant policy area, specifically telephone, Internet or other computer-mediated tools or services.

pean employment policy, since 2007 allocated funding for implementing EURES axis (*European job mobility network*) that provides information, guidance and recruitment services to employers, jobseekers and any citizen wishing to take advantage from freedom of workers mobility (*My EURES*). The program aims to ensure that job vacancies, applications and corresponding advice, are made transparent for the potential applicants as the employers. All information support the provision of EURES services for the recruiting and placing of workers in decent and sustainable employment through the clearance of job vacancies and applications. This support will cover all phases of placement, from pre-recruitment to post-placement assistance<sup>3</sup>.

EURES portal supports a European Classification of Occupations and skills (European taxonomy on Skills, Competences and Occupations-ESCO) which can provide employers, in particular small and medium-sized businesses, with a personalized service to access the potential workers available in the European Economic Area (EEA). EURES also allows consultation, information and statistics for country on the section *Living & Working* and look for CVs of suitable candidates and get in touch with them easily by registering for free to *My EURES* for employers. In particular find out how to post your jobs on the EURES portal by clicking on *Advertise a job*; be aware of the steps to consider in the recruitment process by clicking on *Recruiting abroad*. Regarding jobseekers EURES provides access to relevant workers mobility information, to job search facility so that Advisers Selecting *Search for a job* can access job vacancies in 31 European countries, updated in real time.

### *O\*Net Interest Profile*

It is a digital device which takes its name from O\*Net (*Occupational Informational Network*), an online platform allowing to consult all the current information on the workforce, along with the skills supply/demand in medium and short term<sup>4</sup>. It also allows having on-line access to the tools for self-assessment of skills that workers, students or any other of jobseeker have. But entrepreneurs too, wishing to fill the skill gap in their organizations, by improving skills credentials and training of workforce may use this kind of tools.

3. [www.ec.europa.eu/social/main.jsp?catId=1083&langId=en](http://www.ec.europa.eu/social/main.jsp?catId=1083&langId=en), 10 December 2014.

4. Introduced by the U.S. Department of Labor/Employment and Training Administration (USDOL/ETA) with the Workforce Investment Act (1998), the federal government intended to reform the system of education/training for adults (Adult and Vocational Education) by merging all programs of professional learning for youth and adults in a single structure which occupied to encourage the matching between professional needs expressed by the labor market and requirements of training and education of workforce.

It is in particular a *technique of self-assessment* inspired to the *theory of work adjustment* or TWA (Dawis & Lofquist 1984) and *theory of guidance* (Holland 1959), for which the achievement and job satisfaction are closely related to personal characteristics (work attitudes, work histories, education and training experiences, aptitudes, needs, interests, and personality traits) and kind of work carried out. According with Holland (or RIASEC model) we can identify six individual typological characteristics (*Realistic, Investigative, Artistic, Social, Enterprising, Conventional*) affecting six kinds of behaviour in the workplace. Empirically the model refers to the professions detected by the various classification systems adopted in conventionally and allows users to access other psychometric instruments (*Career Exploration Tools*) including *O\*Net Ability Profiler* (individuals may compare, by means of measurable indicators, their own skills than the skills required to hold a given highest professional performance). In addition the model allows users to enter a path of awareness and assessing of meaningful which they gave to a certain job (*O\*Net Work Importance Profiler*) and recognize probabilistically affinity with his own personal attitudes<sup>5</sup>.

During the time, O\*Net methodological framework has gained a considerable empirical relevance within the Americans policies and was inducted as a guiding tool into the education and training system (i.e American College Testing Program) and Local Career Centres (One-Stop Career Centres). The reliability of O\*Net and its tools is also confirmed by its transferability within other forecasting national systems. These include the Italian forecasting model for the occupational and training needs introduced since 2010 by Isfol (*Institute for the Development of Vocational Training of Workers*) based on the National (Istat NUP08) and International Classification of Occupations (Ilo ISCO/ESCO) and the European Qualifications Framework<sup>6</sup>.

#### *Skills Self-Evaluation Tools for Individuals...*

Among the digital device newly adopted in employment forecasting systems there are even the Essential Skills Self-Evaluation Tools of NOC (*National Occupational Classification*), proposed by the Conference Board of Canada<sup>7</sup>. It aims to meet the need for the institutions to know

5. [www.mynextmove.org/explore/ip](http://www.mynextmove.org/explore/ip).

6. In this instance users have online access to the O\*Net Interest Profile clicking "Compare your professional skills". See [www.professioniooccupazione.isfol.it](http://www.professioniooccupazione.isfol.it).

7. It is a private non-profit institution which operates at national level and carries out research and disseminating on management and on labour market. [www.conference-board.ca](http://www.conference-board.ca).

the ongoing employment dynamics during the economic downturn and the drop in productivity.

By the link: *How do you measure up?* Users may be accompanied to make a simulated experience through which it is possible to test their abilities and skills in specific tasks required for the specific professions. The tool explains via web the operational steps that users should offer and should make clarifying the meaning about the terms used (i.e. the notion of reading skills or computation).

A different useful tool available online is the *Test your skills* a self-administered psychometric test aims to guide the user to gain awareness about their personal skills compared with those required for some profession through a self-learning technique based on by trials and errors. The software fixes step-by-step solutions correct given by the user leading to identification of skill gap than a list of skills that are fundamental for the professional performance. In addition this test allows the users to know specific issues for each professional profile such as:

- a) psychomotor and sensorial movements acting during of their work (physical aspects);
- b) the attitudes who consider themselves essential to perform well in (attitudes);
- c) the projection of the future development of their profession (future trends affecting essential skills).

... *and trades*

In addition to individual paths of self-assessment *NOC* and others national forecast system make various devices available on-line for self-diagnosis of learning needs of enterprises.

Including those ranks the *Learning Plan* tested within the *Export project* funded by the Canadian government through the Human Investment Program aims to support training professionals in promoting self-assessment of skills acquired during their professional career. This link allowing users to define a learning plan to accompany organizations in their planning learning activities, mapping the competencies available and opening a portfolio aimed to reduce the skill gap between the abilities available and job requirements<sup>8</sup>. A more systematic approach to support the process of identification of training and professional needs of top-managers and entrepreneurs is *ONA (Organizational Needs Assessment)*. It is a tool of the Department of Human Resources and Social Development of Canada (imported in Europe) accessible online and aiming to adopt a best practice to identify the skill gap within organizations. Among

8. [www.esdc.gc.ca/eng/jobs/les/tools/assessment/es\\_self\\_assessment\\_trades.shtml](http://www.esdc.gc.ca/eng/jobs/les/tools/assessment/es_self_assessment_trades.shtml).

the methodological guidance provided there is the recommendation to involve workers in skills assessment, very important step to foster a positive organizational climate and prevent critical events that could slow the normal flow of organizational life (absenteeism, resistance to change, accidents at work, difficulty in achieving business goals, low motivation).

Among the web-based techniques within the organizations so-called *Made in Europe* it should be cited the OASI project (*Organisational Approach of Self-controlled Instrument for qualification demand in SME*) carried out by an international research team on the *State of the Art Training needs analysis* in European SMEs.

Among the most innovative tools adopted at macro level, for their relevance it is possible to include:

- *iO - OnlineDialog* model developed by Akademie Ueberlingen Neue Medien GmbH and Jupita Wissenstransfer Adil (Germany);
- *Blackboard Inc.* implemented by OCG – Österreichische Computer Gesellschaft (Austria),
- *Excelsior Informative System for employment and training* by Chambers of Commerce Union (Italy).

#### *iO Online Dialog*

It is a web-based, or standalone solution for recording competence data on a questionnaire based methodology developed in Germany by a network of consulting firms, trade associations and training providers. The output information is provided in diagrams, charts and profiles that serve as profiles for a comparison and therefore gives the information required about training needs and programmes. Due to the strict requirements formulated by the trade unions, this tool offers an anonymous evaluation as well as a personalized output.

In addition to the profile output of persons, teams or departments, this instrument also offers a search engine that searches after competence parameters and gives the opportunity to find suitable staff members for specific positions within the company. It is prepared to be used on all staff-levels and can follow a top-down or bottom-up methodology. In contrast to the other this tool concentrates on the people employed in the company and is not meant to be an instrument for assessment within a recruiting process. A benefit recognized is the possibility for small and medium businesses without financial capacity to develop own tool for training needs analysis, regarding which there was a large demand for adoption tool of the German SMEs.

#### *Blackboard Inc.*

This tool was developed by OCG-Österreichische Computer Gesellschaft. The aim of this non-profit organization is to promote new informa-

tion-technology under consideration of the effects on humans and society. It is not basically a tool for analysing educational needs within companies, but it provides e-Education infrastructure solution aimed at the education sector in all countries of the world and allowing individuals or groups to acquire skills that are required in the labour market. Blackboard Inc. is like an internet-based marketplace. Enterprises can offer their own tools, technologies and services on this space in the Internet. Users can choose between different “Building Blocks” which are put together to form a training program. The advantages of this tool are many: for example the option to use different languages, adapting training systems to different cultures; use common computer-standards and a version especially for enterprises additionally to the traditional version available for free or at very low costs.

This software is used by 2,750 individual institutions in 45 countries worldwide. Furthermore, more than 300 universities and 100 educational institutions use Blackboard Inc.

#### *Excelsior Informative System for Employment and Training*

The aim of this analysis is to get information concerning emergent professions and training needs particularly of national sectors (quantitative analysis on over 100,000 private firms). Excelsior elaborated a vocational role classification distinguishing 5 groups (technical and specialized professions, administrative professions, service management professions; low professional qualification). The questionnaire is made up in different parts: occupation state, forecast for current year, vocational roles hired, training, entrance and exit forecasted. The survey's yearly outcomes provide information concerning the short period trend of vocational roles employment for each industry and for each territory, worker's features (age, sex, educational level, language and technological knowledge, training) and diffusion of atypical agreements (apprenticeship, temporary). It was pointed out how is not possible to realize researches at the micro level<sup>9</sup>.

#### **4. Expanding influence, Persisting obstacles**

At the end of this synthetic presentation, it is possible to deduce the great efforts made by European institutions (and some national governments) in order to strengthen the tools set for helping individuals and firms to better cope with labour market changes. However the effective-

9. [www.excelsior.unioncamere.net](http://www.excelsior.unioncamere.net).

ness and the efficiency of these tools during transitional process still seems to take critical issues. With reference to the case of green employment, at the current time, no country provides a full set of tools and data for estimating employment effects and skill profiles associated with the transition to the green economy and is also difficult to identify an alignment between the research methodology adopted (often only quantitative or just qualitative) or in a slightly correct defining green jobs than the sectors identified in accordance with various standards. Nevertheless, analysis of employment and skills for the green economic transformation will require using multiple methods and sources of information. One is a methodological issue related to the inability of several national classification systems (macro level) measuring the impact and efficacy of these tools at the micro level.

In general, it is evident how the great number of tools developed may represent another limit to their diffusion and efficacy in terms of improving the matching between skills demand and supply. In this case, more integration from a systemic point of view should be reached, along with a higher level of coherence between purposes and methodologies.

Indeed, despite these tools are available on line and directly accessible by the user, also individual, it still remains not monitored on the levels of use of such tools, and particularly how they have been used effectively. Only few experiences conducted at firms' level are known, but not enough to identify weakness and strength elements. Indeed, the use of such instruments requires medium-high level of IT abilities often not owned by low-skilled workers to which these instruments should be of more help<sup>10</sup>. Thus, the expansion of services delivered through new technologies risks leaving behind the most disadvantaged, who are less likely to have the access and skills required to exploit the potential benefits associated with ICT (Lindsay, 2005). *Open Data Resource* enacts the political principle aiming to remove the social barriers which may limit the citizens' right to access and fruition opportunities for lifelong learning and their career development. In this case, some information campaigns and training initiatives could help to reduce the digital gap among the more disadvantaged, increasingly use and efficiency of web-based services, but also avoid limiting their diffusion to people higher educated.

The lack of coordination among the numerous institutional actors involved in skills forecast and matching processes (in short, a lack of social dialogue) may represent an important cause of failure. Close collab-

10. The low computer skills is still a critical data in EU countries: just 9 out of 28 Member States about 50% of those between 15-64 years has no computer literacy or very low-level. European Commission, *Rethinking education: investing in skills for better socio-economic outcomes*, Strasbourg, 2012, pp. 3-9.

oration between government, industry, social partners and research is essential in this regard. In this respect, Commission has been promoting the Sector Skills Councils and Sector Skills Alliances, notably in the automotive, construction and chemicals sectors. As noted in the Commission Green Action Plan for SMEs 27, the same would be necessary also for green sector, particularly for SMEs having fewer resources available to respond to needs transformation. Digital devices (networking platforms and IT systems) could then support social partners, at both cross-industry and sector levels, to strengthen their interaction processes, increasing the number of participants and fostering labour services innovations.

Finally, this analysis highlights the need to reflect over a series of criticalities still emerging at this step of tools elaboration, in order to favour the building of a real bridge between skills and needs, between workers and employment.

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## **Second Part**

### **People, Jobs and Recruiting Processes**



# Determining factors in the job search strategies: A multivariate analysis

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## 1. Introduction

In a context of increasing suffering of the labour market and, in particular, of a more difficult matching of labour demand and supply, especially among the youngest, the elements that help the education-to-work transition are a very relevant theme in the socio-economic literature, in particular due to the fact that the initial stages of working careers contain a number of elements potentially conditioning the entire career of the individual (Mrotz e Savage, 2006).

In this context, marked by complexity and rapid change, the training investment is no longer in itself a guarantee of professional success (Wolbers, 2003). In Italy, the traditional functions of the educational system (reduction of social inequalities inherited from the family and social environment, and increasing opportunities), increasingly clash against a poorly skilled labour market and growing economic difficulties (Cammelli 2012; Ballarino e Scherer, 2013): university career is thus marked by uncertainty and increasing constraints (Franchi, 2005; Ballarino and Checchi, 2006), while the gap between supply and demand is widening, with a labour market in which the skills acquired by large

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The article is the result of a common reflection of the authors, who have shared and discussed the research hypotheses, the theoretical interpretation and the results of data processing. However, the single sections can thus be attributed to: Luca Pesenti paragraphs 2, 3 and 4; Silvia Ghiselli paragraph 5. Introduction and conclusions were written by both authors.

sections of graduates are increasingly hardly necessary (over education)<sup>1</sup> or, more frequently, underutilized (over skilling)<sup>2</sup>.

The use of different job search methods is an interesting analytical tool to understand what determines success in the entry stage to the job market (Ballarino, 2006; Chiesi, 2006; Marzano and Palidda, 2008; Mandrone, 2011). Relationships (family and social) have traditionally played a priority role in providing access to the labour market while market and institutional channels have proved to be less effective than in other European countries, though the reasons and determinants for resorting to these channels have been poorly investigated: Giammatteo and Marchetti (2011) for example, found that there is a relationship between the intensity of job search (in the form of number of channels used) and a number of individual and economic factors that are capable of influencing behaviour in the job-seeking phase. This article will focus precisely on this issue (and, in particular, on the role played by individual activation during the study period and the job-seeking phase). We will specifically consider the strategies implemented by graduates of the year 2008 during their studies and after graduation to prepare them for the challenge of working and relate these items to the use of different job search methods. For this purpose, the data collected as part of a broader survey conducted by the Alma-Laurea Consortium and the Department of Sociology at the Catholic University of Milan in 2012 will be used in the form of original analysis (Rovati, 2013).

## **2. The Survey Characteristics**

The survey was carried out on a sample of about 5800 graduates of 2008 who had an employment three years after graduation, the assumption being that this period of time reflects the job characteristics much better than what can be observed among new graduates.

The questions covered a wide range of items which can be shortly described as individual activation, including: attendance of labour market guidance courses, participation in internships during the study period, type of channels used for finding the current job and the most successful ones among them (with a specific study on the role of social networks), the presence and characteristics of a possible “contact person” for finding work (defining gender, age, education level, employment status, type of bond and frequency of contact in the period of job search), the analysis

1. On the link between human capital and over education see Leuven and Oosterbeek (2011).

2. On the Italian case see instead Caroleo e Pastore (2013).

of adaptability to the labour market in the sense of being ready to move for job reasons. The survey also investigated the relationship networks of graduates, not only in terms of size, but also of “strength” of the bond (kinship, friendship or acquaintance) and professional status of persons belonging to the same network.

Participation was higher among hired employees (23%) than self-employed workers (16%). Moreover, as pointed out in similar surveys (Cimini, Gasperoni e Girotti, 2011), higher response rates were recorded among men residing in the North or coming from a university in that geographical area. Significant differences are also clear with reference to the completed degree course: participation in the survey was higher among the graduates in the science (32%), engineering (26%), geo-biology, languages and psychology groupings (23% in all cases); it was much lower among the graduates in the chemical-pharmaceutical (14%), law (17%) and letters groupings (19%).

In order to reduce the distortion due to respondent self-selection, the data – already submitted to the usual procedure of statistical “re-proportioning” performed on the AlmaLaurea samples to account for imperfect representativeness of the sample – were subjected to further weight adjustment.

The sample of respondents was composed primarily of employees (about 5.100), i.e. the subgroup on which this analysis mainly focuses. The sample consists mainly of workers with permanent contracts (46%) and, to a less extent, non-standard (19%, predominantly fixed-term), Collaboration/Consultancy (14%) or training contracts (10%). The remaining part is made up by other types of contracts such as occasional collaborations or professional consultancies and jobs without a contract.

### **3. The Job Search Methods**

In the literature, a mix of useful elements was found to determine job search effectiveness: the most relevant aspects are related to individual and family characteristics, the market situation and the economic conditions (Chiesi, 2006; Righi Sciulli, 2011). Among the elements that can be related to the individual, in our view a pivotal element is activation, namely: the individual’s resourcefulness during the study period, the level of adaptability to the market and the way the various job search channels are used. In our country, this topic is very much discussed in the literature on policy developments (Lodigiani, 2008; Paci & Pugliese, 2011), but much less popular in the analyses on the transition between the educational and occupational sectors.

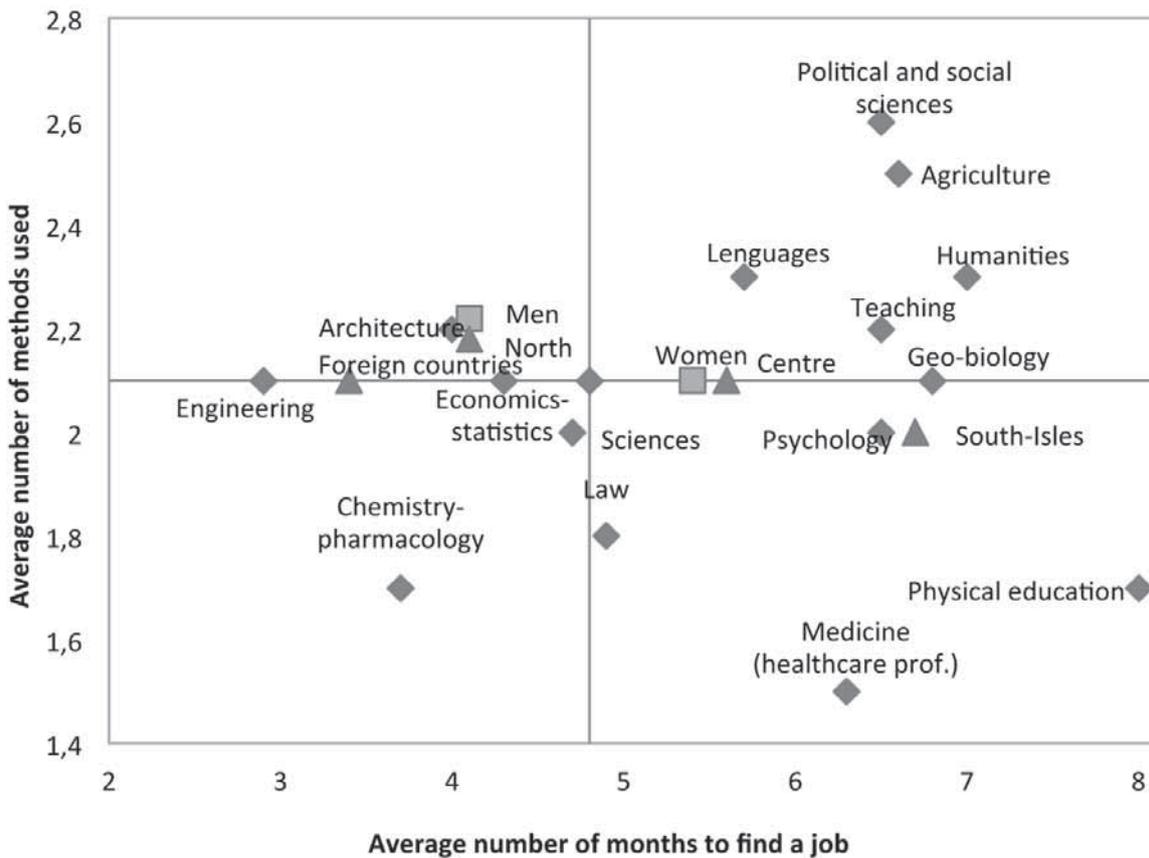
As pointed out above, Giammatteo and Marchetti (2011) mainly refer to job search intensity (to which they also add possible participation in non-occasional training courses). Here we propose a broader definition of the concept of “activation”: we refer, in particular, to the availability shown during the studies, or immediately after graduation, to implement one or more activities aimed at approaching the labour market, e.g. addressing public or private guidance services, resorting to the tutoring service established within the university job placement services, or even participating in internships or work experience in Italy and abroad. These elements are considered increasingly necessary to compensate for the gap between the Italian universities and the market needs (especially those degree courses that are weaker in terms of employability; Reyneri and Pintaldi, 2013).

If it is true that the relevance of the field of study is widely acknowledged for employment purposes (Ballarino and Bratti, 2009), together with the use and effectiveness of job search methods and relevant networks (Granovetter, 1973; Barbieri, 1997) – though the latter have rarely been the subject of in-depth investigation (Ballarino, 2006; Chiesi, 2006; Marzano and Palidda, 2008), – less clear is the role played by individual initiatives (e.g. participating in guidance activities, internships and in-house company periods), as well as by individual flexibility/adaptability to the needs of the market (especially the latter elements have been the focus of public debate in recent years, partly because of non-flattering judgments on the characteristics of the young Italian population expressed by various political leaders).

The first two elements of individual activation considered here refer to the intensity of job search in terms of the number of channels used and the time required to find the current job (Figure 1): on average 2.1 search methods were used, with an average waiting time of 4.8 months to find the job. Males and graduates from the Northern universities use more than one channel but for less time, while graduates from the Southern universities and the Islands are in the opposite quadrant (more time, fewer channels). In the lower left quadrant (minimum time and minimum number of channels) only the graduates in the chemical-pharmaceutical grouping can be found. The shortest job-seeking time is found among the engineering graduates, while physical education graduates have required the longest search period; finally, the degrees in socio-political disciplines have the highest use of search methods while the medical group graduates have used the lowest number of methods.

Women and men use the channels in a somewhat different way (Figure 2): females are more reliant on public employment services and competitions, while males rely more on self-promotion, university placement services and social networks (Figure 2). Of course, this is closely related

Fig. 1 - Average number of months to find a job and average number of methods used – by gender, field of studies and residence area



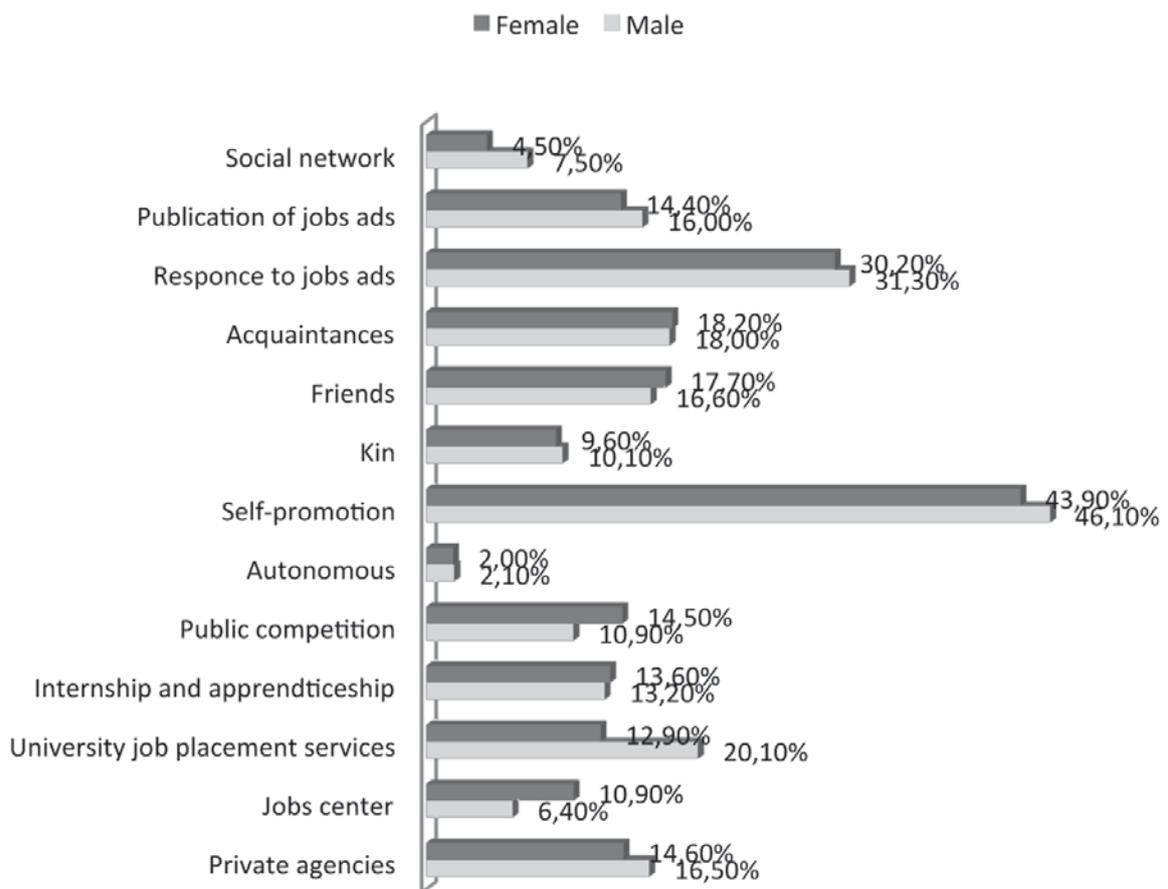
to the type of degree obtained, as will be seen shortly. It should also be highlighted that men needed over one month less than women did to find the occupation declared in the interview.

The type of degree correlates with very different search processes (Table 1). The direct channel (self-promotion) is used by the relative majority of graduates, but in a broader way by the physical education group and to a less extent by the medical, legal and linguistic groups. Instead, the architecture, agriculture, teaching, literary, political, social and psychological groups rely very much on relations. Public channels (competition and Job centers) are used by those holding weak degrees (teaching, letters, languages, social sciences and politics groupings) and by graduates of the medical group (who rely mainly on competitions, in 24.2% of cases). University placement is successfully used especially by the economics and statistics groups (25.6%), while an internship is used mostly by graduates in agriculture, physical education, medicine and social politics. Finally, private agencies are used mostly by graduates in languages, engineering, social sciences, politics, economics and statistics.

Finally, at geographical level there is a prevalence of direct and market methods among Northern residents, while relationship-based methods are used mainly in the Southern areas.

More generally, a trend already reported in the literature could be confirmed: the less search methods are used, the faster placement is (4 months for those who used only one method, 7.1 months for those who used three or more methods).

Fig. 2 - Use of job search methods according to gender (%)



Tab. 1 - Job search methods according to the field of studies (%)

	Private agencies	Jobs center	University job placement	Internship and apprenticeship	Public competition	Autonomous	Self-promotion	Kin	Friends	Acquaintances	Response to jobs ads	Publication of jobs ads	Social network
Agriculture	9,4	13,1	15,6	20,5	15,6	2,3	50,9	11,1	32,0	31,0	32,1	14,5	6,3
Architecture	8,9	7,9	10,3	9,6	7,1	4,0	49,8	19,7	29,4	24,1	29,4	15,3	3,5
Chemistry-pharmacology	9,8	4,6	5,7	11,3	6,8	2,4	56,3	8,8	11,1	20,6	19,8	11,6	2,1
Economics-statistics	18,3	8,2	25,6	10,6	12,3	1,4	43,0	7,2	11,3	16,4	34,6	16,9	6,6
Physical education		5,9	11,9	24,5	8,8	2,0	65,7	3,9	5,0	21,6	14,9	3,9	5,9
Geo-biology	16,3	7,4	6,0	19,0	17,1		45,4	8,3	17,6	22,9	26,6	15,1	4,2
Law	10,3	5,3	8,0	16,8	15,9	4,9	39,0	12,0	9,7	13,7	24,6	15,5	3,8
Engineering	18,0	5,3	23,7	10,1	4,1	1,6	44,0	7,9	16,0	15,1	34,7	17,7	7,5
Teaching	14,1	22,8	7,4	8,7	28,4		52,0	10,1	33,1	12,2	18,9	10,7	3,4
Humanities	12,1	15,6	7,4	16,2	24,4	2,4	49,2	12,5	19,2	20,7	27,7	11,9	6,0
Languages	24,4	17,4	13,6	11,2	20,3	3,8	39,6	7,5	22,3	15,6	36,2	14,4	5,3
Medicine (healthcare prof.)		1,8	5,5	20,6	34,2		36,0	11,5	9,7	15,8	5,5	4,9	1,2
Political and social sciences	21,7	15,6	18,9	20,7	19,8	1,6	43,2	12,1	22,1	19,3	36,5	16,3	8,6
Psychology	12,8	11,2	3,9	16,1	9,9	3,4	41,9	9,1	25,5	24,0	30,2	11,8	4,3
Sciences	11,3	7,1	16,5	6,1	18,6		46,6	9,0	15,2	13,2	30,1	16,3	5,6

#### 4. Individual activation as a job search determinant

In line with the above theoretical premises, we checked the role played by some elements of individual “activation” that are thought to be useful for a better “lubrication” of the mechanisms of entry into the labour market. In particular, they are related to three main areas: i) attendance of university tutoring services, ii) participation in guidance initiatives, and iii) participation in internships and apprenticeships.

The tutoring service offered by universities (including support in the drafting of curricula and preparation to job interviews) looks like the real weak element in the path, because only 7.2% of graduates declares participation in these experiences; average users are mostly men (except for some degree courses with greater female presence, such as in the teaching, literary and linguistic groups) and graduates in the faculties of agriculture, languages, economics and statistics (with percentages in all cases greater than 10%) (Table 2).

Tab. 2 - Percentage of graduates who have performed the following activities during university studies (multiple choices), according to gender and type of degree

	Guidance courses by public agen- cies	Guidance courses by private ac- tors	Tutoring services by University	Internships (in Italy)	Internships (abroad)
<i>Total</i>	29,6	9	7,2	53,9	8,8
<i>Males</i>	33,1	10,6	8,3	49,5	8,9
<i>Females</i>	26,9	7,7	6,2	57,3	8,6
<i>Agriculture</i>	17,7	5	11,7	56,4	22,2
<i>Architecture</i>	10,7	5,8	2,5	62,7	6,1
<i>Chemistry- pharmacology</i>	22,6	4,4	2,9	57,1	2,3
<i>Economics- statistics</i>	46,5	13,4	11,6	57,4	9,3
<i>Physical edu- cation</i>	7,2	4,7	0,7	55,5	0,9
<i>Geo-biology</i>	27,6	6,1	4,5	54	8,2
<i>Law</i>	23,3	9,6	3,2	23,2	3,6
<i>Engineering</i>	40,2	11,3	9,6	48,1	8,4
<i>Teaching</i>	13,4	4,7	7,1	53,4	4,2
<i>Humanities</i>	20,1	6,1	6,8	57,1	6,7
<i>Languages</i>	28,2	15	10,4	56,1	29,5
<i>Medicine (healthcare prof.)</i>	8,7	1,3	3,7	48,9	5,3
<i>Political and social sciences</i>	29	8,5	6,5	60,8	14
<i>Psychology</i>	19,1	6,1	3,5	74	4,5
<i>Sciences</i>	26,8	9,2	4,6	38,7	2,4

Regarding the issue of guidance, it is considered increasingly essential in the study paths to ensure adequate working returns. The literature points to the possibility that an appropriate guidance procedure represents an indispensable element of support to the growth strategies of human capital before and career opportunities afterwards, making the person more capable of interpreting the social and economic dynamics within which to develop one's own action (Mancinelli, 2003; Di Fabio, Bernaud and Palazzeschi, 2008). In spite of this, the percentage of users of career guidance services is still rather low: less than a graduate in three claims to have received guidance services from public agencies (such as the Career Days promoted by the University), less than one in ten from private actors. Again, resourcefulness is mostly a prerogative of men (but women are more present in the geo-biology, engineering and medicine groups, as well as in the aforementioned female-dominated faculties) and of graduates in economics-statistics and language groups, to whom engineering graduates should be added.

Of particular interest is the analysis of internships abroad, representing greater availability of young graduates to engage in active entrepreneurial strategies. In this case there are no obvious differences due to gender, while the type of degree once again shows very substantial differences. Definitely above average, of course, are the graduates in languages (one out of three followed an internship abroad), those in agriculture (22.2%) and in political and social sciences (14%) among whom obviously the attendance of courses in international relations plays a fundamental role. Instead, very low or almost null is the percentage of graduates in physical education (0.9%), in chemical and pharmaceutical disciplines (2.3%) and in sciences (2.4%) who follow an internship abroad.

Moreover, participation in internships abroad proves to be an excellent channel of access to work: it does not necessarily open the doors to more secure jobs (open-ended contracts are in fact less prevalent among those who did internships abroad than among others), but it is associated with higher net earnings (1414 euro, compared to 1263 euro earned on average by the sample population) and greater usefulness and effectiveness of the degree in relation to the current job, which are at top level in 41.2% of those who did an internship abroad and in 35.6% of those who did internships also in Italy (Rovati, ed, 2013).

## **5. Job search strategies: an overview**

In order to have a simultaneous view of the job search strategies adopted by graduates, a multiple correspondence analysis was performed, with subsequent cluster analysis. As a result, we have reduced the



Tab. 3 - 2008 second level graduates: clusters identified on the basis of job search strategies

Cluster	Frequency (%)	Gender	Grouping	Social background	Average number of job search strategies	Job search strategy	Was there a fundamental person in order to obtain the current job?	Current job	Earnings
1. Self-employed tendency	2	-	Law, Architecture	Both parents are degree holders; middle class	3.2	starting self-employment	yes	Without contract, occasional collaboration contract	1,096
2. Formal overactive	5	W	Political and social sciences	middle school; working class or clerical middle class	4.8	public and private placement office, response/publishing ads, public competition, university job placement service, post-graduate training, social network	no	Non-standard contracts or collaboration/consultancy	1,138
3. Direct relationship	4	-	Architecture	At least one parent is a graduated; middle class	4.1	contact by friends, relatives, acquaintances indication, or on her/his own initiative	yes	Without contract, occasional collaboration contract	1,160

4. Job wanted desperately	3	M	Humanities, Geobiology, Political and social sciences	middle school; working class	7.1	all the strategies except starting self-employment	yes	Non-standard contracts	1,125
5. On the market	17	-	Engineering	lower middle class	1.5	response/publishing ads, private placement office	no	Permanent contract, Non-standard contracts	1,310
6. The media	9	M	Engineering, Economics-statistics	secondary school-leaving certificate	3.3	response/publishing ads, social network, university job placement service	no	Permanent contract, Training contracts	1,369
7. Fully equipped	16	M	Engineering	middle school; working class	1.6	post-graduate training (master, internship, internship/practice), university job placement service	-	Collaboration/Consultancy, Permanent contract	1,318
8. Traditionalist	7	W	Medicine	elementary school; clerical middle class	1.3	public competition	no	Non-standard contracts	1,275
9. Less resourceful direct contact	16	-	Pharmacology, Law, Humanities	clerical middle class	1.0	direct contact with the employer	no	Without contract, other kinds	-

			ties					of self-employed jobs	
10. Pure relationship	20	W	Psychology, Chemistry-pharmacology, Architecture	-	1.7	contact by friends, relatives, acquaintances indication	yes	Without contract, occasional collaboration contract	1,144

“-“ indicates that there were no significant values according to the applied tests.

### 5.1. Which elements affect job search strategies?

Graduates tend to follow different strategies for finding a job, according to their professional objectives, the selected degree course, the family background and their relational networks. In other words, the choice to take a specific job search action depends on a variety of factors, often interdependent of each other.

In order to identify which are the factors affecting the choice to undertake a specific job search strategy, a two-group linear discriminant analysis was adopted and applied to factorial coordinates, with subsequent scoring procedure (Saporta, 1990, 2006). For the sake of simplicity, the attention was focused only on specific job search strategies: we have considered, in fact, the “pure relational” cluster (n. 10, about 700 respondents), the “less resourceful” one (n. 9, over 550 respondents) and graduates who addressed “market” channels or the media (n. 5 and 6, 950 people altogether). The first cluster was compared with the second and, similarly, the first with the third. In both cases, the reference mode against which the model has been implemented is the use of relational networks (for an immediate comparison between the models).

The relevance of the variables considered in the model was made easier to understand thanks to a scoring procedure, which has transformed the estimated parameters into scores: the higher they are the more they positively contribute to determining the use of relational channels<sup>3</sup>.

3. The total score (obtained by adding each score of each mode of the considered variables) ranges on a 0-1,000 scale (1,000 = profile with the highest probability to resort to relational networks; 0 = profile with null probability to resort to relational networks). The

The predictive power of the model is acceptable, although not so high (accurate classification rate: 72% for the first model – less resourceful vs pure relational individuals – and 64% for the second one –market vs relational channels). As highlighted in similar analyses (Crisci and Ghiselli 2010), when considering so complex issues, we should keep in mind that certain aspects significantly affecting the choices made by graduates are hard to observe and measure (e.g. the individual approach to the labour market, personal aspirations and inclinations). The verification of the essential “stability” of the model (assessed by means of a bootstrap method) and the fact that the uncertainty zone is never too broad further confirm the overall validity of the two estimated models.

Table 4 describes the results of the two models, reporting the scores associated with each variable considered. As you will note, some variables are not reported because they are irrelevant for the purpose of determining the use of a specific job search strategy considered in this survey. In detail, they are: cultural family background, academic performance (marks, degree completion time and age at graduation) and availability of a low/medium level of network relationships. The last element mentioned, in particular, suggests that graduates decide to use their network of relations only if they are of high status (e.g. with university professors, lawyers/engineers, managers/directors, councillors, parliament members). This is justified by the high educational profile of the examined cohort, composed of people who probably aspire to professional positions of medium-high level.

With regard to model 1, the theoretical profile associated with the highest probability of resorting to a relational channel (instead of a direct one) and corresponding to a total score of 1,000, refers to a woman who has a degree in languages, lives and has studied in Southern Italy; her father is involved in a high level profession, with rich social capital and network relations (although not with high status professionals). During the study period she has worked and made a training experience (in Italy) but has not participated in guidance initiatives; at the time of graduation she has stated her intention to seek employment in the private sector and to search earnings, career advancement, relevance to the completed studies and independence from her ideal job (job security is not important

model also divides the range of variation in three bands: the “green” one represents the profiles with good chance of using relational channels, while the “red” one represents those with low probability. The “orange” band represents the uncertainty zone, where it is difficult to attribute high/low probability to undertake this type of channel. In the model that compares direct strategy and relational networks, green, red and orange range bands are: 371-1,000, 0-260, 261-370. In the second model (on the market vs relational networks) the three bands are, respectively: 550-1,000, 0-363, 364-549.

Tab. 4 - Elements that affect the job search strategies relating to occupation at three years from degree completion

<i>Variables</i>	<i>Score Model n. 1: less resourceful, direct contact vs pure relational</i>	<i>Score Model n. 2: market vs pure relational</i>
<i>Grouping</i>		
Languages	168	0
Psychology	134	150
Teaching	123	174
Geo-biology	100	79
Architecture	98	114
Political and social sciences	89	90
Sciences, Chemistry, Engineering	59	43
Medicine, Healthcare prof., Veterinary	59	161
Agriculture	57	116
Law	47	66
Economics-statistics	34	30
Humanities	3	87
Pharmacology	0	101
<i>Gender</i>		
Men	0	0
Women	24	23
<i>Geographical area of residence</i>		
North, Centre	0	21
South	7	0
<i>Geographical area of university</i>		
North, Centre	0	22
South	24	0
<i>Father profession</i>		
High level: entrepreneur, liberal professional, high/medium level manager	8	33
Medium-low level: self-employed, white collar, manual worker	0	0
<i>Associative social capital index</i>		
Not high	0	0
High	23	53
<i>Relational social capital index</i>		
low ( $\leq 0.1$ )	0	0
medium (0.13 – 0.20)	14	22
high (0.21+)	33	40
<i>Relationship with high status professionals</i>		
yes	0	20
no	14	0
<i>Carried out training periods (during the university studies) in Italy</i>		
yes	6	0
no	0	18
<i>Carried out training periods (during the university studies) abroad</i>		
yes	0	0
no	98	86

<i>Work activities during the university studies</i>		
yes	16	27
no	0	0
<i>Participation (during the university studies) for guidance initiatives</i>		
yes	0	0
no	7	35
<i>Type of work sought (statement at the time of degree)</i>		
public-sector subordinate employment	6	38
private-sector subordinate employment	20	0
self-employed	0	132
no preference	17	18
<i>Earning prospects*</i>		
yes, definitely	20	26
not yes definitely	0	0
<i>Career prospects*</i>		
yes, definitely	16	0
not yes definitely	0	42
<i>Job security*</i>		
yes, definitely	0	0
not yes definitely	28	0
<i>Relevance to studies completed*</i>		
yes, definitely	30	26
not yes definitely	0	0
<i>Independence or autonomy*</i>		
yes, definitely	23	16
not yes definitely	0	0
<i>Employment condition at one year on from degree completion</i>		
Not Labour Force	11	69
Labour Force	0	0
<i>Number of working activities done after the degree completion</i>		
Only 1	0	33
2	44	15
3	13	6
More than 3 different activities	21	0
<i>Number of job search strategies</i>		
Only 1 strategy (or never searched the job)	0	101
2/3 strategies	353	39
More than 3 strategies	379	0

\* Aspects considered important in job-seeking (statement at the time of degree). Not considered: Physical education graduates, residents abroad and missing answers

for her). One year after the degree she was still outside the labour market (probably pursuing further education). After graduation she only had two jobs and used at least three different channels for finding the job in which she was in 2011.

Beyond these general considerations, it is clear that some variables significantly contribute to promoting the use of relational channels: for

both models implemented, in particular for the first one, the number of job search channels plays a decisive role, up to 40% (it has an impact of 10% in the second model). Also the degree course is relevant, accounting for almost 20%. On the other hand, there are variables (relationship with high status professionals, work activities during the university studies, geographical area of residence or of study, and so on) that appear to have a modest impact, in the order of 2%. In this respect, also gender seems to have a minimal impact, although it is true that women tend to make greater use, all other conditions being equal, of their networks of relationships.

In model 1, the higher the number of channels used, the higher the probability of using relational channels; an opposite trend is true for model 2. This is justified by the very meaning of active job search, which clearly indicates how difficult it is to find a job. If a graduate experiences major difficulties after trying various approaches (including – of course – direct initiative, which is the most common strategy), probably he/she will resort to his/her network relationships, hoping to receive suggestions about companies seeking graduates. All of these are active job search strategies, but involving the role of a mediator. On the other hand, however, there is also a greater likelihood that a graduate consults ads in newspapers or message boards, submits applications to private employment agencies or university placement offices (strategies that fall within the market channels).

Interesting results emerge from the assessment of the activities performed when attending university, evaluated in terms of participation in internship programmes and guidance initiatives during the studies. This kind of experience shows a tendency to reduce the use of friends' or parental networks. This is particularly true with regard to the participation in an internship programme abroad. Going abroad affects the subsequent career choices of young people, that tend to remain outside our country. In this case it is natural to lose one's own network of relationships.

Also the professional targets stated on the eve of graduation play a significant role. Take, for example, the graduates who had declared their intention to take the road of self-employment. Which are the job search strategies followed by these graduates who, in the case of the implemented models, do not seem to have crowned their dreams (the analysis in fact excludes actual self-employed people)? First of all, they are more likely to resort to network relationships than follow market strategies but, at the same time, they are less likely to do so if the comparison is made with direct channels. Why? Among those who had declared their intention to start a self-employed activity, those who resort to direct market strategies at three years from degree completion most likely have a permanent contract; those who resort to their relational networks are

more likely engaged in other kinds of self-employed jobs or jobs without a contract (often the prelude to actual self-employment). In the first case it is as if the dream expressed at the time of graduation had been set aside forever, while in the second case it seems as if it had only been postponed. Then the use of one's own network of relationships can, for graduates, be a valuable support to the crowning of their professional targets. Indeed, it is not a coincidence that within the group of graduates with greater reliance on network relationships there is, in particular, a stronger presence of architects and law graduates.

## 6. Conclusions

It is well-known that the use of specific job search strategies produces inhomogeneous employment yields in terms of career and earnings. What drives a graduate to search a job using some channels instead of others still remains to be understood, in particular the role that each one plays (with its determinants), as well as the availability (even prior to the job seeking phase) to undertake preparatory actions to enter the labour market (here defined as “individual activation”). First of all, descriptive analysis showed a gender gap, with different levels of activation between men and women: except for the internship experience in Italy, men show a greater tendency to undertake a plurality of job search actions. Similarly, the type of degree is confirmed as a discriminating element: graduates in languages, economics-statistics and engineering show higher levels of activation. Homogeneous groups obtained through cluster analysis show the presence of a wide range of experiences with marked polarizations. From the “job wanted desperately” group, whose members have undertaken 7 different job seeking initiatives and have been in several jobs after degree completion, with very limited professional fulfilment (3 years after graduation) – confirming evidence from the literature according to which increasing the number of channels used in job search increases the difficulty in finding a suitable job – to the “less resourceful, direct contact” graduates, the least active of all, who have resorted, in particular, to direct contact with the employer.

It is a qualitative polarization since the first group represents 3% of the sample while the second one accounts for as much as 20% of the interviewed students. In-between, the “direct relationship” graduates have looked for a job specially using contacts with employers on the advice of friends, relatives, acquaintances or directly on their own initiative, while the so-called “pure relationship” graduates, although less active in job seeking, have contacted the employer mainly on the recommendation of acquaintances, friends or relatives. The “on the market” graduates

have answered ads in newspapers or have turned to private employment agencies, “the media” graduates have addressed especially the media, answering or reading ads, using social networks or contacting university placement services, while the “traditionalists” have notably participated in public competitions.

More in depth analysis (multiple correspondence analysis) confirms the hypothesis that there is a link between individual activation and use of job search strategies: in particular, access to relational networks is less relevant when using fewer channels (the relational approach seems to step in only at a later time, after other search strategies have failed) and more limited in case of high levels of individual activation, in particular when the graduate has had an internship experience abroad. Family background and academic performance have no effect on the choice of using relational strategies (compared to direct or market ones). However, an interesting distinction can be made: graduates tend to resort to their network of relations only in case they are of high status, thus more likely to effectively help them hit their professional goals. Gender differences are very limited, while the impact of the educational path is much stronger: this suggests that, a priori, there are no different search strategies adopted by men and women. These vary according to the professional goals, strongly determined by the type of degree obtained, which is almost always the main predictor of the selected job search strategy.

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# Looking for a Job Online. An International Survey on Social Recruiting

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## Introduction

The diffusion of social media platforms and social network sites across many different contexts has inevitably and substantially affected also the practices and dynamics of employment and recruitment. These are now privileged environments for job search, thus allowing new ways for demand and supply to match. One of the most important and popular social network sites is a professional social network, LinkedIn, which consents to manage a profile displaying professional information and to connect with other professionals and potential hirers all over the world. Similar websites dedicated to different kinds of businesses and to specific market niches proliferate on the web.

This paper will examine the use of social network sites as a new channel for job search and hiring, looking at the implications this has on candidates and recruiters. This will be done thanks to an online survey, conducted between March and June 2014, which collected responses from 17.272 candidates and 1502 recruiters from 24 countries worldwide and which includes a specific focus on the dynamics concerning Italy and the Italian labour market. The main questions this article will tackle concern different aspects in the matching between demand and supply in the labour market. First, it will be explored what kind of candidates and firms use social media in the recruitment process, to learn whether and to what extent job seekers and recruiters use digital tools in their activity.

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Second, it will be questioned what is the effectiveness of social media in the matching between supply and demand in the labour market, looking at how the two aspects reciprocally meet in the digital environment, which dynamics seem to vary and which others are being reproduced. Finally, we will look at how candidates represent themselves online, with the aim of understanding how digital reputation impacts on job search and may potentially change the role of social capital (and digital ties) as ‘social recruiting’ becomes common practice.

## 1. Job markets and the Internet

Despite linguistic conventions, the job market is a very particular kind of market (Reyneri, 2011) where salaries do not exert the canonical function of rebalancing supply and demand. The relation of exchange between employers and workers is not an equal, but a structurally asymmetrical one; labour is not an anonymous commodity but an increasingly ‘cognitive’ good (Moulier-Boutang, 2007). The behaviour of actors involved in this socio-economic dynamic does not generally adhere to a rational economic criterion, as the exchange implies a relationship of trust over time, which attaches to the identity of the subjects.

For such reasons, and to a greater extent than when it comes to exchanging ‘physical’ goods, in the matching between labour supply and demand in a labour market a key element to consider is the degree of *embeddedness* of the job seeker in a network of social interactions (Granovetter, 1973, 1985). Recent Eurostat data (2013) confirm the relevance of social networks and personal contacts across labour markets; an estimated 69% of European job seekers turn to friends, relatives and personal contacts to find a job, which gets as high as up to 77% in Italy. Personal relations are not just the most commonly utilized means to seek for a job, but also the most effective one; in Italy, in 2010, an estimated 35% of employed workers found their job via friends, relatives and personal contacts (it was 24% only in 1997). These figures combine with the recourse to networking via professional contacts, indicated as effective by 9% of respondents (Radicchia, Mandrone, 2011).

The use of relational channels to get jobs is common practice especially in Italy, Spain, Greece, Ireland and Austria, whilst the literature shows how in Germany, France and Belgium the organizational mediation operated by public and private actors remains prevalent (Reyneri, 2011). This may be even more common across certain professional sectors, as for instance in the knowledge and creative industries where the recourse to professional contacts and personal networks to get jobs is widely acknowledged (Grugulis and Stoyanova, 2012), and Italy makes no exception

(D'Ovidio and Gandini, 2014). Indeed, the use of relational channels to get jobs is also strongly controversial, as it is often seen as a vehicle for self-interested dynamics delinked from meritocracy and connected to a negative perception of *clientelism*. On the other hand, however, it is arguably true that public and market regulations in countries like Italy have hardly reached an adequate degree of effectiveness in the allocation of labour (Reyneri, 2011).

In the UK, Denmark, Netherlands, France and Ireland, the privileged channel to search for job offers have always been newspapers (Reyneri, 2011). Indeed, the large-scale diffusion of the Internet quite considerably changed this landscape. The spread of digital platforms which favour the matching of demand and supply in the labour market in an innovative way has been largely received as a potentially positive instance, capable of challenging traditional modalities of supply-demand allocation and enabling greater transparency, thus opening new possibilities to those who were traditionally excluded from the labour market (Kuhn, Skuterud, 2004).

More than a decade after the boom of Internet access in the early 2000s, and now that the pervasiveness of Internet resources has colonized almost every aspect of sociality, still few works have directly addressed this issue. Recent data are showing how job markets are increasingly 'digitalized'. The most recent Eurostat report (2013) reports an average 17% of respondents who declare having used the Internet to search for a job in the three months preceding the survey, with higher values reported in Sweden (29%), Finland, Norway and Iceland (27%) – and a below-average rate of 13% in Italy. The literature on online job search is still incomplete and somewhat disorganised in this sense, but casts a light on the emerging critical elements in this context.

First, it may be noted that those who are more active on social media for job search are also the most qualified ones. The literature calls this a 'digital job search divide' (Mossberge, Mary, Tolbert, Stansbury 2003). In Italy, a mere 57% of Internet users believe they have the necessary skills to search for jobs online. This percentage increases up to 70% in the age range 20-24 and 67% in the range 25-34, but dramatically decreases in the age groups of 35 or above, and of 20 or below, indicating this may not only be due to the lack of technical skills (Radicchia Mandrone, 2011).

Internet job search has a number of advantages. It is relatively inexpensive and may be undertaken also by people with limited time to dedicate to job seeking, such as those already employed, who often access the Internet mostly from the workplace – and it may also be an option for those who have less interest or fewer chances to find a job (Kuhn, Skuterud, 2004). Yet, Internet job search is not alternative, but complementary to traditional methods. Based upon findings emerging from the

existing literature, it may be excluded that the degree of extension of the search, and the number of means utilized for it, is correlated to a greater efficacy. Blau and Robins (1990) show how job search is more effective when it concentrates around few methods. The mere addition of the Internet as a method does not guarantee, *per se*, greater chances of a successful job search.

However, there are also a few disadvantages. These mostly concern the number and the types of people utilizing these instruments, but also the quality of the search. A greater availability of information around open positions does not translate automatically in better information. On the contrary, existing research on online job ads shows a sensible decline in the quality of the information advertised, if compared to printed media ads (Fountain, 2005; Marchal, Mellet and Rieucan, 2007).

Thus, it may be argued that if the Internet has arguably facilitated the publication of job ads and the reach of potentially interesting information on open positions, it has not substantially modified the dynamics and the critical instances pertaining to traditional job search. Indeed, the passage from the early days of the informational Web to the contemporary forms of relational Internet, known as Web 2.0, has introduced a new form of discontinuity. If the use of the Internet has enacted some forms of disintermediation in the automation of job search processes as well as in the regulation of job markets, although with the pros and cons here discussed, the rise of social network sites (Boyd and Ellison, 2005) may well induce into a transformation in the dynamics concerning the relational forms of job search and labour markets. The term ‘social recruiting’ was coined on purpose to define Internet job search via social network sites (Vicknair, Elkersh, Yancey and Budden, 2010). This phenomenon poses new research questions and potential challenges.

First, it may be tempting to question whether the recourse to social network sites for job search practices has reproduced those dynamics of ‘digital job search divide’ that connoted the early Internet job boards. Second, it seems interesting to enquire about the perception of efficacy of these tools, and if there are differentials in relation to those using them (both demographically and in terms of skills). Lastly, it appears useful to go more in depth on the specificity of these tools when it comes to delivering information about a candidate, to highlight the peculiar role and specificity of the *reputational* dynamics that unfold in and across the online environment. Reputation, and especially digital reputation, is increasingly acknowledged as an asset that contributes to the achievement of certain outcomes (Hearn, 2010) especially across highly-skilled, knowledge intensive labour markets (Gandini, 2014) and its impact and extent is expanded over the online sphere, given the role of metrics as ‘proxies’ for reputation assessment across personal profiles. This article will directly challenge the case of Italy in relation to these dynamics.

## 2. Research Methodology

In order to respond to these questions we have constructed a survey with exploratory purposes, which was distributed in collaboration with Adecco, one of the leading job agencies worldwide. The survey, administered online between March 18 and June 2, 2014, had the aim of understanding how candidates search for jobs on social media, which instruments they use, and how they represent themselves online.

It collected responses from 17.272 candidates (8.992 complete responses and 8.280 partial responses) from 24 countries. Specifically, there were more than 11000 responses from Southern Europe, and among those, more than 7500 from Italy. It also collected more than 4000 responses from Eastern Europe and MENA, 9000 from Western Europe, 300 from the US and 200 from APAC<sup>1</sup>. The candidates' sample presents a substantially balanced distribution with a majority of men (52%), born after 1981 (46%), and mostly graduates (43%). Those who are employed mostly retain non-managerial positions (59%).

In the same context we also interviewed 1.502 recruiters (873 complete responses and 629 partial responses) and collected about 600 responses from Eastern Europe and MENA, more than 500 from Western Europe, nearly 3000 from the whole Southern Europe and among them 269 from Italy – with a few dozen responses coming from APAC and US. This specular survey had the aim of understanding how firms and companies operate on social media, which instruments they use, and what they look for in the recruiting process.

The recruiters' sample is mostly composed of females (66%), and shows a majority of candidates born after 1981 (46%), and graduates (76%) in a sample that is equally balanced between those with more or less than five years of experience. There is a large presence of recruiters in a managerial position (37%), in firms with more than 250 employees (56%), or in recruiting agencies (51%). The survey was distributed online and diffused through the communication channels of Adecco. The results therefore are not representative of the population of the countries under enquiry, but should be interpreted in the framework of an exploratory study over a largely IT-skilled population interested in job search. The analysis below will look at the data in a global perspective, focusing more in depth on Italy as a result of the good number of responses collected, which engaged

1. APAC includes Australia and Singapore. Eastern Europe and MENA include Bulgaria, Czech Republic, Greece, Croatia, Hungary, Morocco, Poland, Romania, Russia, Slovenia, Slovakia, Turkey, Tunisia, Arab Emirates, and Ukraine. Western Europe includes the Netherlands, Switzerland, and the United Kingdom. Southern Europe includes Spain, France, and Italy and finally the USA.

with over 7500 candidates and 270 recruiters. As seen, Italy seems to be peculiarly interesting given its 'historical' recourse to relational channels to get jobs.

### **3. The uses of social recruiting in the matching between demand and supply**

The research shows that respectively 55% of job seekers and 73% of recruiters interviewed in the European area utilize social media for job search or HR purposes. In Italy, job seekers present a rate of usage that is higher than the European average values reported (67%) whilst recruiters remain slightly below the average rate (66%). Among both job seekers and recruiters LinkedIn is largely the most used social network site for professional purposes (35% of job seekers and 58% of recruiters), followed by Facebook (17% of job seekers and 28% of recruiters). More than half of the companies where the recruiters interviewed are employed, have at least one active account on a social networking site, with an equal presence on LinkedIn and Facebook (53%). In Italy this decreases significantly, respectively at 48% for LinkedIn and 43% for Facebook. Relevant rates of use emerge also for other social media platforms, such as Twitter (31%) and YouTube (18%).

In 2013, more than half of the overall recruitment activity broadly involved the Internet – not only social media platforms. It is widely expected by both parties that the percentage of use for 2014 will continue to grow (61%). Comparatively, social media are the digital resource that is expected to experience the largest increase in usage in 2014. Recruiters believe social media use for recruitment will grow more than other areas of potential expansion of 'digital' HR practice.

The differences that emerge among the various geographic areas are quite significant. A peak of use of social media platforms for job search can be found in Western Europe (63%) and Southern Europe (57%, with Italy scoring a below-average rate of 45%). Quite surprisingly, the US rate at just 52%, a comparatively lower rate than the European area, whilst APAC and Eastern Europe/MENA report significantly lower rates of use (47%). It is interesting to note how the distribution in the use of digital technologies among recruiters presents a somewhat opposite trend. Despite the high number of candidates active in online job search through social media, the Southern European area emerges from this report as that with the greatest delay in the use of social network sites by recruiters (34% vs 66%) and their companies (57% vs 73%). Eastern Europe and MENA, that present lower rates of adoption by candidates, score instead the highest percentage of adoption by recruiters (74%).

For what concerns the job seekers, the element that seems to affect more the likelihood of social media use for job search is the education title. Graduates are significantly more active than non-graduates; in Italy, social media use for job search is reported at 67% among those with a “licenza media” (secondary school) but gets as high as 86% among those with a postgraduate degree. Gender is also emerging as a marker of difference, with women reported to be more active in digital job search over men. Age, on the contrary, seems to be scarcely relevant, although it should be noted that age is a factor that has a substantial effect on whether the candidate has access to social media in general. Italy in this regard makes a significant exception, as the use of digital tools for job search substantially diminishes alongside the age of the respondent.

Based upon the occupational condition, the use of social media for job search appears to be significantly higher among those who are searching for their first job (74%, which gets to 80% in Italy) as well as among those who are temporarily redundant (67%). Among the different activities that constitute online job search practice, the adaptation of non-digital practices to the digital domain is very frequent. Candidates in fact mostly browse through job ads (63%, which gets to 69% in the Italian sample) and look for potential hirers (55%).

In terms of ‘relational’ job search practices, younger workers seem to be more active than the other groups. It is reported a significant importance is given to practices of “personal branding”, “professional networking”, and “reputation analysis of potential hirers”. This confirms the strict relationship between online activity and the role of identity, reputation and the self; social recruiting makes no exception to this global trend. Women seemingly do less personal branding than men, but appear to be more careful in regards to what others say about a potential employer. Those who are already employed are generally more active online than people out of work in regards to online job search practices. This specific group in fact scores a lower rate only in relation to online job application submissions, a result which is easily explained with the minor urgency of finding new employment.

On the recruiters’ side, 82% of companies employing at least 250 employees have a profile on at least one social network site, compared to 69% of small sized companies having between 10 and 50 employees. In relation to the professional sector, the most active ones are recruiting companies (92%), followed by telecommunications (77%), chemicals (73%), and technology (73%), and media firms (72%). In the majority of cases, the use of social media by recruiters is more often voluntary (58%) or strongly recommended (37%), and only in rare cases is it mandatory (6%). The use of social media is more often mandatory in Eastern Europe and MENA (8%), whilst in Italy is as low as 2%.

The most recurrent activities that are pursued through social media by recruiters in their HR activity are job advertising (65%), the search of non-active candidates (60%), and the verification of CV information (51%). A surprising result emerges in relation to the professional figures that are searched for more frequently through social media by recruiters. Also, if in the early days of social media these tools were mostly used to search for by medium/high profile professionals now the tendency seems to be overturned. The most sought-after figures across social media are largely non-managerial ones (66%), with lower search rates for middle managers (54%) and senior managers (41%). In Italy, these differentials are even more solid, with the search for non-managerial positions rated as high as 78%; middle managerial positions show a search rate of 47%, that goes down to 35% for managers and 26% for senior managers. The only exception to this trend seems to be represented by Eastern Europe and MENA areas, where managers are the most sought-after profiles.

Approximately 1 out of 3 recruiters attended training courses organized by the firm (1 out of 4 in Italy). The diffusion of policy guidelines among recruiters on how to manage social media is still infrequent, with 61% of interviewees reporting that their company does not provide them with such support. As concerns training and formation, this is more frequent in companies with 250+ employees and decreases significantly with the dimension of the firm, and especially in Southern European countries. Interestingly, for those who report no formation, the expected utility increases with the dimension of the enterprise – the bigger the company, the greater training seems to be needed. On the contrary, among those who did attend training, a greater perceived utility is reported among microbusinesses. This confirms the fact that small enterprises are less inclined to provide formation, but when this occurs, the experienced return is greater, as it generally represents a strong element of differentiation from their competitors.

#### **4. The Effectiveness of Social Media in the Matching Between Supply and Demand**

A reported 49% of job seekers utilize social media to distribute their CV. Among these, approximately 1 over 4 (29%) were contacted by a recruiter at least once, and 9% of them received a job offer. The geographic area scoring the best results in terms of matching seems to be Western Europe (17% of seekers actually got a job), followed by Eastern Europe and Mena (13%). In Italy, although activity is quite intense (56% of candidates submitted their CV online at least once), results are inferior (only 23% were contacted and only 7% got the job).

The use of social media to distribute CVs is more frequent among those aged 50 and above. Yet, among those who are contacted by recruiters, the younger candidates seem to have higher chances of being offered a job. Those with a postgraduate degree are more active and generally better off, as they get contacted and hired more often. Seekers currently employed generally obtain better results in terms of getting contacted, if compared to those out of work. No significant differences emerge in terms of gender, except for a slightly better result obtained by male candidates.

Another element that is strongly correlated to the success of the online job search is the ‘wealth’ of the candidates’ offline and online social networks. Job seekers in the sample appear to have strongly integrated networks, made of a combination of offline and online relationships, and often the same relationship is maintained alive across both channels (69%). We distinguish here between ‘rich’ networks, which are those with high levels of social capital, medium and weak networks, with lower levels of social capital. Having a ‘rich’ network seems to have direct implications with the effectiveness of the job search. The use of social media for job search, the possibility of being contacted by a recruiter and then finding a job increases as the number of online social relations increase. The disposal of rich online social networks can get also better results than rich offline networks in the job search (13% vs 11%) and this is true also in the case of Italy (10% vs 9%).

Among the different social networking sites, LinkedIn is largely considered the most effective platform in terms of matching between supply and demand. The index of effectiveness for LinkedIn<sup>2</sup>, calculated with values ranging between -1, lowest effectiveness, and 1, highest effectiveness, shows the highest result (0,13). In Italy this value is slightly lower, scoring at 0,08. Among the other social networking sites, Facebook rates at -0,29 (in Italy this is as low as -0,30) and therefore should be considered the “less ineffective” social networking site. These rates are considerably different to those reported among recruiters, where both platforms get higher values. LinkedIn is rated at 0,60 (0,63 in Italy) whilst Facebook gets to 0,05 (in Italy this remains negative, however, with a score of -0,03).

If we compare the perception of effectiveness per geographic areas, the candidates who are more satisfied of the use of social media for online job search are those from Western Europe, whilst the less satisfied are those from Southern Europe. Perhaps this is due to the lower results achieved in relation to an overall high rate of activity, as seen above. This probably combines with the higher unemployment overall, which affects

2. The index was calculated transforming the existing range of values between 1 and 7 in a range between -1 and 1. From each value X was deducted the median value of the range (4) and the result was divided by the median value minus one (3).

Southern European countries. Among recruiters, the perceived efficacy shows opposite results. Southern European recruiters are those most satisfied together with Eastern Europe and MENA areas, whilst Western European recruiters show lower levels of satisfaction. This is likely to be due to a more competitive job market overall.

In terms of demographic characteristics, the relationship between the effectiveness of social media for job search and the education title held by the candidate seems to be quite strong. The increase in the perceived utility of social media is directly proportional to the level of education. The index of effectiveness for postgraduates is located at 0,47 (in Italy this gets to 0,86). The candidates who seem to appreciate LinkedIn most are women and young professionals. Those employed consider these tools to be generally more effective (0,32), whilst those out of work are more inclined to be distrustful of LinkedIn's effectiveness (0,02).

## **5. Web Reputation and its Impacts on Job Search**

The study of the use of social media and the diffusion of social recruiting practices cannot be complete without looking at one of the elements that are more central in the digital domain: the personal reputation. LinkedIn is the resource that recruiters use most to assess the web reputation of a candidate (68%, and in Italy it gets as high as to 71%). Facebook is also very used (52%, but only 38% in Italy) and this is especially interesting if we consider that candidates claim to use Facebook more as a personal channel, dedicated to friends, rather than a professional one. Interestingly, these social media are used more often than traditional search engines (29%, in Italia 25%).

Recruiters believe that the most interesting information they can retrieve online concerns the precedent professional experiences (attractiveness index of 0,63, index value from  $-1$  min attractiveness to 1 max attractiveness<sup>3</sup>) and also candidates retain these as important (index of attendance of 0,33). On the contrary, the display of professional prizes and awards is perceived as relevant by recruiters (0,38) but is largely overlooked by candidates ( $-0,03$ ). Recruiters use social media also to assess the personality insights that can be derived from the observation of the profile (0,32), although seekers do not seem to pay the same attention to this practice (index of 0,13). They, indeed, attribute significant importance to the number of contacts displayed (0,10), an element towards which recruiters seem to be largely disinterested ( $-0,13$ ). This may be inter-

3. *Ibid.*

preted as a tendency by recruiters to skeptically approach ‘pure metrics’, such as the number of contacts, perceived as a sort of ‘noisy’ and potentially deceiving information that does not provide trustworthy elements for professional assessment, whilst the public display of previous work experience, which is more difficult to fabricate artificially, is generally more trusted.

It is also interesting to enquire what candidates search for in the profile pages of the companies to which they submit their application. Seekers seem to look for job ads (attractiveness index from  $-1$  to  $1$  of  $0,50$ ), and information about the firm ( $0,41$ ), alongside the content posted by the firm ( $0,32$ ). Social media profiles operated by the firms are largely perceived to be informational “dashboards” rather than channels that are able to create relationships.

Concerning the elements which may negatively affect the web reputation of a candidate, approximately one third of recruiters admit having discarded a potential candidate as a consequence of the information, the pictures, or the content posted on the candidate’s profile (in Italy, this is only 1 over 4). This may be interpreted in two different ways. On one hand, candidates may be disqualified as they present information that differs substantially from the information provided in their CV; or, else, they may be discarded as of the ‘sensitive’ content they post on their profiles.

Among the different elements which seem to negatively influence the assessment of the web reputation of a candidate, recruiters seem to pay particular attention to the comments posted, especially when they report of activity that violates University or workplace rules (index  $0,36$ , in a range that goes from  $-1$  = lowest probability of a negative evaluation, to  $+1$  = highest probability of a negative evaluation). Pictures and ‘selfies’ are relatively less relevant than comments or other content in this dynamic. Also, the age of the recruiter seems to have an effect on what may negatively affect a candidate’s web reputation, since younger recruiters appear to be less strict in relation to “sensitive” information.

Seekers on the other hand seem to have a general awareness of the kind of information that may affect the recruiters’ opinion and largely declare to avoid posting sensitive comments or pictures (the index of attendance is largely below  $0$ ). However, the tendency to post sensitive material seems to be greater among younger candidates. Discarding a candidate on the basis of the content posted online should probably be interpreted as a “strategy” perpetrated by the recruiters to reduce the (often large) number of candidates for a job by searching for material that may not be “sensitive” per se, but sufficiently ambiguous to detrimentally affect one’s reputation.

It is striking to see that the percentages of recruiters who admit having requested a candidate’s Facebook password (or another social media

password) during the job interview is relatively high (6%), especially in Eastern Europe and MENA (12%), and is greater than the percentage of candidates who have received this type of request (2%). In Italy this figure is limited at around 1% in both samples. Among the candidates who declare being requested a password, more than one third accepted.

Recruiters use social network sites to assess the profile of any candidate, not just those who encounter via social media, but also those they come to meet through other channels. Online profiles are increasingly perceived as a reliable source of information for the evaluation of one's professional capacity, especially by recruiters who can assess a candidate on the basis of the 'public image' displayed. On the other hand, candidates can exert both active and 'passive' strategies for job search, using profiles as 'shopping windows', playing with the platform and the publicness of the profiles. Whilst Google rankings and metrics often provide with biased results on contacts and reputations, social network sites allow professionals and individuals to 'tell' their story and enact strategies of self-marketing and promotion which may be profitable in terms of job search.

Yet, these channels still present limitations and shortcomings. Individuals generally have one social media profile per platform, with scarce or no possibility for personalisation of features and layouts. However, if compared to the traditional CV, social network sites present the truly disruptive element of the visibility of social relations and, across professional social networks such as LinkedIn, also of references and recommendations.

## **Conclusion**

If we combine all the elements described we can categorize job seekers according to three clusters. In the first and bigger one (71%), which may be labelled as "the non-connected cluster", candidates present education titles, occupational levels, and professional statuses that are comparatively lower than the other profiles. The average use of social media is generally low, especially for professional purposes, as are the 'digital' skills. Candidates in this cluster display a rather hesitant attitude to post information about one's professional experience on social media and a greater attention towards the publication of information that may affect or compromise the personal reputation. They also achieve the worst results in terms of online job search.

A second intermediate profile, which may be called "the semi-connected cluster", includes about 27% of job seekers who are generally young, graduates, with mid-level occupations and professional status, an average use of social media. They achieve intermediate results in terms of online job search.

Finally, a smaller cluster (only 2% of job seekers), which may be called “the highly-connected cluster”, comprises of “excellence” candidates who have considerably high skills and education titles (largely postgraduate), higher occupational statuses and a recurrent use of social media, also for professional purposes. These have greater digital skills and a generally positive attitude towards the publication of professional experiences, but pay significant attention to the release of information that may affect their web reputation. This group achieves the best results in terms of online job search.

If we go back to the main questions that drove the research, the ‘digital job search divide’ hypothesis seems largely confirmed. The most influential element for job seekers is the education title; for recruiters, what matters most seems to be the size of the company. Among them, those who work in SMEs and attended training or formation courses report greater benefit in the use of social media for HR if compared to those working in big companies. This is probably due to the fact that, in smaller-size companies, social recruiting becomes a distinctive element that brings advantages and increases competitiveness. It may be reasonable to imagine this may be true also for job seekers.

Interestingly, there are strong territorial imbalances and a strong delinking between the level of activation of recruiters and candidates. The recourse to continuous formation modules dedicated to social media and job search could represent a significant incentive towards the rebalance of supply and demand.

Digital divide remains significant and emerges even stronger especially in relation to the perceived effectiveness of social media use for job search. This analysis offers a new element to this picture: the ‘wealth’ of both online and offline networks as an advantage in the job search. The hypothesis that may be brought along – which deserves a dedicated study – is that social network sites seem to foster the circulation of information about positions and jobs across network relations that are more open and extended than face-to-face networks. In other words, it may be questioned whether these tools reiterate – or change – the extent to which weak (professional) ties are more relevant for job search than strong (friendship) ties.

The research confirms the increasing centrality of reputational dynamics in the job search. The fact reputational mechanisms are used to circulate information and to assess a candidate’s credentials and skills poses advantages in the quality of the matching. Yet, this also entails the necessity of paying attention to the protection of the information released. Recruiters confirm that candidates may be discarded on the basis of the content posted online, rather than on the basis of pictures. These couples with the worrying insight that a number of recruiters asked candidates

to provide their Facebook password. This practice is illegal, but it seems alarming that some candidates accepted to do so in order to get the job. There seems to be the necessity to raise the awareness around this issue; dedicated formation and training may be beneficial also in this regard.

To conclude, this research highlights some of the dynamics characterizing social recruiting and open up a few potential spaces for new research. It would be interesting to administer a similar survey to a representative sample, in order to assess the results emerged here, and to operate a similar study with longitudinal panel data. Also the role of the platform as the intermediary of the processes of social recruiting appears to be worth a specific look, to enquire on the modalities through which digital professional networks are constructed and cultivated and what is the role of self-disclosure in the processes of job search.

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# Employability and job search during unemployment: An explorative study

*Emanuela Ingusci\**

## 1. Theoretical background

Over the past few years the world labour market has been modified profoundly by constant and rapid changes in the market. (e.g., Kompier, 2006; Martínez *et al.*, 2010). The European data on the labour market show that the number of unemployed workers is constantly growing (Servais, 2012) with some significant differences within the countries of the European Union (e.g., Wagenaar *et al.*, 2012). For individuals experiencing unemployment, job loss is often a stressful life event, characterized by financial hardship, uncertainty, loss of social networks, and lower levels of psychological well-being (Price *et al.*, 1998). Unemployment is a pervasive and ongoing societal issue which has well-documented and demonstrable negative consequences. When compared with employed people, unemployed individuals have higher levels of depressive affect (Feather and O'Brien, 1986), lower levels of self-esteem (Muller *et al.*, 1993), and higher incidences of psychological distress (Henwood and Miles, 1987). Unemployment can also influence the relationships in the family; well-being and role function (Atkinson *et al.*, 1986) and lead to lowered subjective perceived competence (Warr *et al.*, 1988). Winefield *et al.* (2002) suggested that many negative psychological outcomes of unemployment are due to the influence of the Western work ethic which promotes the perception of a person being a failure if unemployed. While the experience of unemployment has generally aversive effects, the impact on individuals' psychological well-being is not homogeneous (Van Hooft *et al.* 2004).

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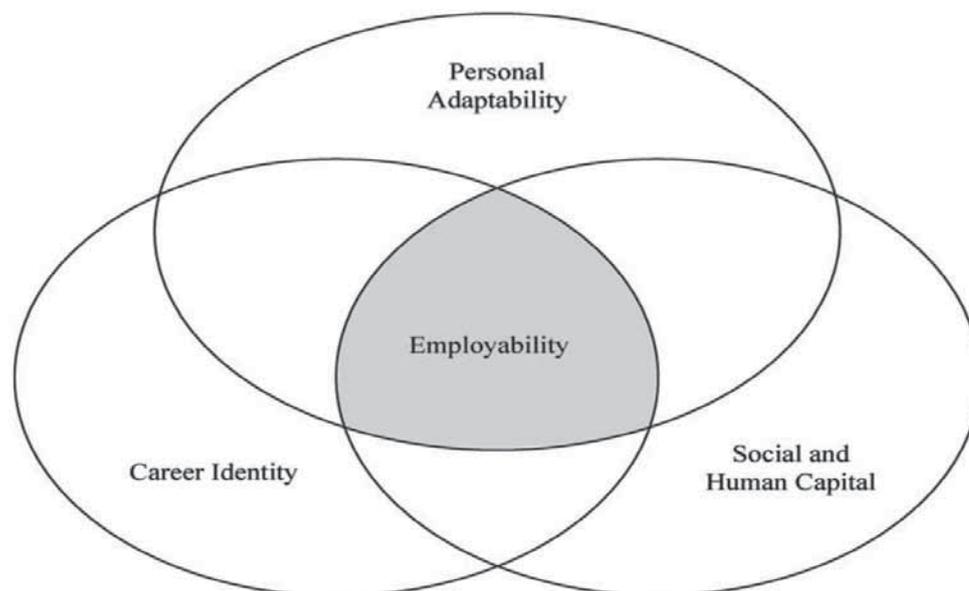
Studies on unemployment tend to focus their attention on unemployment within different social groups. In particular, youth unemployment, which is one of the most, debated topics today. There are three lines of research in this regard: The first approach (Feather, 1990) studied the phenomenon from an evolutionary point of view, considering the development of individuals and the impact of career transitions and periods of job loss; while a second approach (Jehoel-Gijsbers and Groot, 1989) analyzed the effects of unemployment on some variables such as professional identity. Lastly a third approach focuses on the behavioural effects of unemployment regarding health (drug abuse, youth crime). The status of unemployment determines a set of behaviours that affect the personal and professional lives of individuals. The strategies used by the unemployed to seek employment are determined by the outcome expectations of the actions to be implemented. The action concerned may relate to the identification of marketable skills, direct and indirect contact with potential employers and professionals who can facilitate the exchange of information by extending their social network, or the ability to effectively manage a selection interview (Pace *et al.*, 2007; Caplan *et al.*, 1989).

## **2. Employability and its dimensions**

The term Employability was coined in Europe in the 1950s in order to classify an individual as either employed or unemployed. Since 1990 Employability has become a necessary requisite to address the challenges posed by an ever – changing labour market; the concept is linked to a person's ability to adapt to change (Fugate *et al.*, 2004). Employability also requires a set of competences together with the knowledge of how to use them. These skills make up the personal resources needed to competitively deal with today's labour market. The concept of Employability has been developed from the psychosocial approach of Fugate *et al.* (2004). Employability is defined as «a form of specific job adaptability active and proactive in identifying and implementing career opportunities» (Fugate *et al.*, 2004, p. 16); the authors start from the idea that individual Employability is primarily a psychological construct referring to the characteristics of the person, activated when the individual is looking for a job or adapting to changes in the surrounding environment. The theme of Employability inevitably brings attention to the hot topic of the labour market and the elements that characterize it, namely flexibility, uncertainty, change and innovation, crisis and anxiety in the management of the new status lived in different periods of employment (unemployed, busy period, temp contracts, etc.). Individuals, who directly experience these changes, require an active form of adaptation to the new context

of work. Fugate *et al.* (2004) included this ability to adapt in the concept of Employability, defined as a “psycho-social construct” detectable in features and in behaviour of individuals, key to the process of adaptation to the demands of work and of organizations. Employability also called “Employability potential” psycho-social perspective is the set of skills possessed by an individual, allowing him to be eligible to successfully occupy certain positions and work to develop, in the course of his or her working life, new skills in response to the demands of the job or to change and improve his or her job position, identifying and implementing the best career opportunities (*ibid.*). The focus, however, is not only on the ability to find a good job as mentioned above, but also on the ability to transfer the skills acquired from context to context, constantly renewing them through learning and training throughout life. Employability is closely related to the construct of proactivity, when the individual is active in identifying opportunities for personal development, changes the environment surrounding him or her and perseveres to make it more familiar and is able to move within it more confidently, at the same time the individual is able to adapt to these changes acquiring information useful to the management of work (Fugate and Kinicki, 2008). Employability as a multi-dimensional construct is the result of the interaction of three dimensions related to each other, as shown in Figure 1.

*Fig. 1 - Heuristic model of employability (Fugate et al., 2004, p. 10)*



## 2.1. *Career identity*

Career identity is a fundamental resource for ensuring unity between past experience and professional future of individuals in a productive context which tends to have a progressive fragmentation of individual career path and to a diversity of social and organizational roles. Career identity is a dimension of employability, which is similar to other constructs like role identity, occupational identity and refers to how individuals define themselves in a particular work context (Fugate *et al.*, 2004). Career identity is a longitudinal dimension because it involves the past, the present and the future career of an individual. Moreover, it changes over time; it also includes organizational and contextual variables which characterize the current labour market. It represents the way people define themselves in a career context, and can be conceptualized as a “cognitive compass” used to direct and govern career opportunities. This dimension of Employability also provides the purpose and the direction in which an individual’s energies flow in order to identify and implement career opportunities in the best way (Fugate and Kinicki, 2008). Furthermore, the authors (*ibidem*) suggest that a heavy dose of career identity corresponds to the identification of individuals with their career choices and work, a concept that refers to the multidimensional construct “Career commitment” (Carson and Bedeian, 1994). Career commitment consists of three components: career resilience which means persistence in tackling adversity encountered in their career; career identity in other words career choices and the direction and identification with these choices; career planning that means determination of career goals and personal development. Career commitment, motivation of individuals to reach career goals and assumptions, are closely related to the concept of Employability, a person with a clear definition of their professional choices (career identity), with the self-confidence and strength to address the difficulties encountered in their career (career resilience) and clear planning to achieve clearly defined stages for the development of their career (career planning) will have a greater ability to adapt to work (Fugate *et al.*, 2004) and of finding suitable employment that fulfils their expectations. Fugate *et al.* (2004) identify the dimension of career identity as a resource that can be used in order to achieve greater career opportunities and ease of work.

## 2.2. *Employability activities*

For young people unemployment, concerns a particular phase of the life cycle that tends to take on the characteristics of a complex path of learning and acquiring useful skills to increase employability. The

activities individuals undertake to improve and maintain their employability, such as engaging in development activities and extending their knowledge and work experience, are essential. Previous research (Sutton, 1998; Van Dam, 2004) studied employability activities during employment and showed links between attitudes and behaviour, implying that employees who have more positive attitudes toward employability interventions in general will undertake more activities to develop and maintain their employability than employees who have less positive attitudes. This form of selective acquisition of skills shows individuals are predisposed to learning by Employability orientation, in other words interventions and activities aimed at strengthening, developing and maintaining individual employability (Van Dam, 2004); in this scenario, the adaptability and orientation to learning promote Employability orientation and positively increase employability (Van Dam, 2004). Research by Van Dam (2004) has revealed how Employability orientation is important but not sufficient to produce individual employability, in other words, it is necessary to have a link between positive attitudes towards learning activities and the implementation of actions related to Employability, better defined as Employability Activities (*ibidem*). Employability activities include a series of proactive and adaptive behaviours carried out by an individual in an effort to develop better working conditions or to seek a job suited to their characteristics. Job search behaviour, participation in events that foster the probability of employment and the construction of effective relational networks are some of the more general activities related to Employability.

### **3. Employability and Job search behaviour**

One of the most important concepts related to employability is job search behaviour. Job search behaviour is a construct that has only recently been given considerable attention within the framework of studies regarding the psychology of work and organisations with regards to transition processes (university to work, work to work etc.). Several variables have been taken into consideration in relation to the Job Search Behaviour construct; the relationship between the JSB and turnover (Blau, 1993; 1994; Kopelman *et al.*, 1992), loss of employment and re-employment (Kanfer and Hulin, 1985; Wanberg *et al.*, 1996), intervention programs for the active search of work (Caplan, *et al.*, 1989; Price *et al.*, 1992).

Starting from the widely studied theoretical model of Soelberg, new questions have arisen about the underlying processes involved in job search behaviour. Blau (1993, 1994), discussing these theoretical premises, has identified two important stages in the research process: prepara-

tory job search behaviour and active job search behaviour. The Psychosocial value of Blau's model is based on some specific points:

- The task of finding a job is linked to the process of construction of social representations of a job. The contacts with the labour market are driven by a system of representations and preferences that the individual has developed in the previous educational period or in past working periods. This representation is also influenced by different factors at different times of a person's life (economic, personal and professional factors). Therefore, an early psychosocial factor of influence of job search behaviour is the fact that this behaviour is linked to individual representations and expectations related to employment;
- Job search activity also depends on a number of characteristics of the individual. They are, in this regard, the perceived effectiveness and the perception of control over reality, the degree to which the individual believes that the reinforcements which follow their actions depend directly on their behaviour – locus of control – as well as the degree of proactivity in determining individual commitment, intensity and focus in search behaviour. Thus the second factor is made up of the personal characteristics of the individual who can act with varying degrees of intensity in active search of work (Blau, 1993, 1994);
- Job search is strongly influenced by the relationship between subject and relevant social context. A third factor is, therefore, the characteristics relating to the context and the subject's ability to relate to the context and to benefit from it in order to achieve its objectives (Depolo *et al.*, 1993). The three interconnected factors act in setting search behaviour.

There are many approaches used to measure job search. Previous studies used one-item measures, including the number of employers contacted, number of applications fielded. Other studies have used multi-item measures focusing on either effort or time spent looking for a job. Various multi-item behavioural measures exist (Linnehan and Blau, 1998). Blau identified two job search dimensions: preparatory and active job search. These two dimensions fit into Soelberg's conceptual model of job search and choice. During the preparatory behavioural phase, individuals identify a set of initial job alternatives to consider through various sources (formal and informal). In the active behavioural phase, individuals actually apply for and acquire information about the position identified during the preparatory phase.

## 4. Methodology

### 4.1. *Aim of the study*

According to Fugate *et al.* (2004) employability is particularly relevant when talking about unemployment. Employable individuals are less likely to be psychologically harmed by job loss, and more likely to engage in deeper job search. Despite the substantial progress made in this literature in the last 20 years, a few studies (Mc Ardle *et al.*, 2007) have investigated employability and job search during unemployment. In these studies subjects were paid to participate in the research. In contrast, in this paper participants were asked to fill in a questionnaire while waiting to be seen in an employment Agency; so participation was voluntary without any economic contribution. Furthermore, in this paper, to measure job search behaviour we use the two-factor scale of Blau (1992, 1993); while to measure employability we use the employability activities scale of Van Dam (2004). Finally, the overall aim of this exploratory study is to identify, in particular, the relationships between employability (career identity and employability activities) and job search behaviour in a sample of unemployed workers applying for employment through employment agencies. The hypotheses are following:

H1: significant differences exist for gender and age groups.

H2: Employability, in particular career identity and employability activities are positively related to job search behaviour (preparatory and active) during unemployment.

### 4.2. *Sample and procedure*

Data were collected in 2012/2013 from 385 unemployed individuals registered at the employment Agencies in a small town in the south of Italy. Most of subjects were female (N = 280) 72.7%, while 27.3% were male (N = 105). The participants were young unemployed workers (M age = 25.89 SD = 8.301). Regarding education, 51.7% had a high school diploma focusing on humanities or sciences, while 28.8% had a high school diploma focusing on technical and professional studies. Just 10.13% of the participants had a university education. The participants completed the questionnaire in paper format in office hours and were unpaid volunteers. Informed consent was requested and privacy was guaranteed. The distributed questionnaires were introduced with a short text explaining the principal aim of the study. Participants were told that the information provided was strictly confidential; they were told that there were no right or wrong answers, they were told to think about their past work expe-

rience and the use of job search strategies. Data was gathered through public Employment Agencies. Participants were invited to fill in a questionnaire based on the *Job Search Behaviour Scale* (Blau, 1993, 1994) and by the adaptation of the scale used by Carson and Bedeian (1994).

#### 4.3. Measures

1. *Job Search Behaviour Scale* (Blau, 1994). This consists of 12 items based on the original two factors (Preparatory Job Search Behaviour –6 item – and Active Job Search Behaviour – –6 item). The subjects were asked to indicate the frequency with which they put into practice each of the behaviours presented by the items in the past six months, considering a five-point Likert scale where 1 corresponds respectively to *Never* (0 times); 2 = *rarely* (once or twice); 3 = *sometimes* (three to five times); 4 = *often* (six to nine times); 5 = *very often* (more than ten times). The five-point Likert scale meant that the frequency of each individual search behaviour was measured more accurately, unlike scales used in other studies which used a dichotomous response mode (Blau, 1994).

2. *Career Identity*. This was measured using 4 items from Career Commitment Measures (Carson, Bedeian, 1994); a 5-point Likert scale was used for all items, with 1 = strongly disagree and 5 = strongly agree. The subjects were asked to indicate the degree of agreement for each item presented (“I identify myself with my career” or “I feel emotionally close to my career”).

3. *Employability Activities*. Six items were developed by Van Dam (2004) to measure Employability Activities. A 4-point response scale was used for all items, with 1 = strongly disagree and 4 = strongly agree. The items were for example: “I’m trying to develop my knowledge”, or “I’m trying actively to search new work experiences”.

#### 4.4. Data analysis

Results of the analyses are shown in tables 1-2-3a-3b. The job search behaviour scale was submitted to t-test analysis for independent samples in relation to control variables (gender, age groups) (H1). To test hypothesis (H2), multiple regression analyses were performed, considering both preparatory and active job search behaviour as dependent variables. We preliminarily standardized quantitative variables as they were measured on different scales, in order to interpret  $\beta$  coefficients correctly.

## 5. Results

Table 1 reports means, standard deviations, correlation coefficients, and Cronbach's alpha coefficients for control variables, job search behaviour and career identity.

Tab. 1 - Means, standard deviations, correlations and Cronbach's alpha coefficients

Variables	<i>M</i>	<i>SD</i>	1	2	3	4	5	6
1. Age	25.89	8.33	-					
2. Gender	1.73	0.44		-				
3. Career identity	3.98	0.84	-.23**	.01	.89			
4. Employability activities	3.81	0.80	-.02	-.06	.44**	.88		
5. Preparatory job search behaviour	2.76	0.98	.14**	-.06	.17**	.51**	.81	
6. Active job search behaviour	3.03	0.94	.18**	-.04	-.06	.42**	.58**	.82

N = 385; \* p < .05; \*\* p < .01. Values along main diagonal are coefficient alphas for scaled variables  
Gender: 0 = female, 1 = male

As Table 1 shows, age was negatively correlated with career identity, employability activities were significantly correlated with career identity, preparatory job search behaviour was significantly correlated with age, career identity and employability activities; finally active job search behaviour was significantly correlated with age, employability activities and preparatory job search behaviour.

In order to verify significant differences between men and women in job search behaviour (H1), the t-test was adopted, using a 0.05 criterion for statistical significance. Table 2 reports the descriptive statistics of men and women, t-values, degrees of freedom, p-values and  $\eta^2$ . The  $\eta^2$  indicates the effect size (i.e. it shows the percentage variance that is explained by an independent variable, in this case the gender). Cohen's (1988) guidelines state that effect size can be considered as "small" (20% of explained variance) if  $\eta^2$  is between 0.02 and 0.04, "medium" (50 % of explained variance) if it is between 0.05 and 0.08, while it is "large" (80 percent of explained variance) if it is more than 0.08.

Tab. 2 - T-test and descriptive statistics of men and women

	Mean	SD	t-value	df	p	$\eta^2$
Job search preparatory behaviour	(2.73) 2.86	(,9395) 1.0929	1.18	383	0.01	0.032
Job search active behaviour	(3.37)3.42	(,4717) 0.5865	0.94	382	0.00	0.062

Notes: In mean and in SD: without parenthesis men values (n= 105), in parenthesis women values (n = 280)

T-test analysis for age groups did not show significant differences. Conversely, the findings of t-test for gender showed that men had a significantly higher score than women toward both preparatory and active job search behaviours. This means that men develop strategies about job search more than women; regarding preparatory job search behaviour, they plan their job search, allocating resources (i.e., time, effort, money) to help produce initial job alternatives to consider. They gather potential job leads from different sources (newspaper, previous employers). For active job search behaviour, they actively develop networks with relatives, friends, acquaintances and potential employers to communicate their status and skills for a future job. They communicate their availability using behaviours such as sending out resumes, telephoning and meeting potential employers (Blau, 1994). Tables 3a and 3b (regression) show that career identity and employability activities contribute to explain preparatory and active job search behaviour (the model explains the 42% of variances).

Tab. 3a - Multiple Regression- Job Search preparatory Behaviour

	$R^2$ adjusted	F	Sig.	B	Standard Error	Standard coefficients $\beta$	T	Sig.
Career identity				,32	,04	,322	6,56	,000
	,42	94,36	,000					
Employability activities				,21	,06	,210	4,35	,000

Tab. 3b - Multiple Regression- Job Search active Behaviour

	<i>R<sup>2</sup> adjusted</i>	<i>F</i>	<i>Sig.</i>	<i>B</i>	<i>Standard Error</i>	<i>Standard coefficients <math>\beta</math></i>	<i>T</i>	<i>Sig.</i>
Career identity				,35	,04	,354	6,77	,000
	,19	47,66	,000					
Employability activities				,49	,05	,495	9,67	,000

Career identity directs and regulates preparatory job search behaviour, such as preparing or revising a resume, or reading the classified ads in a newspaper, journal or on web sites (Blau, 1994; Fugate and Kinicki, 2008). It also increases active strategies to find a job, such as sending resumes to potential employers, contacting or attending an employment agency, talking with friends or relatives about possible job leads. Employability activities influence positively both preparatory and active job search behaviour. Employability activities are: acting to increase knowledge and work experience, being informed about job vacancies or engaging in development activities not directly related to a job.

## 6. Discussion and Conclusions

Research on employability (Fugate *et al.*, 2004; Mc Ardle *et al.*, 2007) is usually focused on the employability and psychological characteristics of individuals. The present study was aimed at researching employability from a different point of view. It considered in fact, career identity, employability activities and their relationship with job search behaviour in a sample of unemployed workers. The relationship between career identity and job search behaviour studies have produced significant findings in samples of temporary workers (De Cuyper *et al.*, 2010) while the number of studies on unemployed workers is limited (Mc Ardle *et al.*, 2007). Looking at the literature regarding employability activities and job search behaviour, research has shown a significant relationship between both constructs (Van Dam, 2004; Van Dam and Menting, 2012) in employed workers, but there is a lack of research about employability activities and job search behaviour during unemployment.

Contrary to studies which measured career identity with identity awareness and career self-efficacy scales (Mc Ardle *et al.*, 2007), the present contribution used a career commitment scale (Carson and Bedeian, 1994).

The scale includes items such as “My career represents an important part of me” “My career has high personal significance”. Moreover, the dimension of employability activities as predictor of job search behaviour starting from studies of Van Dam (2004, Van Dam and Menting, 2012) were used. According to Van Dam (2004), the actions individuals undertake to improve and maintain their employability, such as engaging in development activities and extending their knowledge and work experience, are important during employment and overall during unemployment. Results of the study are partly supported by the literature.

Several studies reported that gender and age are related to job search behaviour. Wanberg *et al.* (1996) cited an investigation of gender by Leana and Feldman in which women were found to exhibit less job search behaviour than men; Wanberg *et al.* (2001) found, however, that women had more intentions of seeking a job than did men. Drentea (1998) states that job search methods can affect the gender composition at work. Her results showed that women who use informal methods and active behaviour such as networking tend to find male-dominated jobs, whereas those who use formal methods tend to find female-dominated jobs. On the other hand, Kulik (2001) did not find significant differences between men and women on job search behaviour. This might result from the wider range of opportunities open equally to men and women in today’s job market. Results from regression analysis, indicated that career identity and employability activities are related to job search behaviour. In particular, the two constructs increase the preparatory job search behaviour. In the context of the current labour market, characterized by rapid changes and economic difficulty, identity needs to be categorised as from an organization or a specific job, because it represents a broader concept, which includes personal values, motivation to work and career interests (Hall *et al.*, 1997). Employability activities are considered a subset of activities that individuals can undertake to manage their careers. Many studies define different career-management strategies, such as the use of self-set goals, positive cognitions, and behavioural strategies, self-awareness, taking responsibility, and acquiring specific organizational skills, i.e., interpersonal skills (Van Dam, 2004). According to Van Dam (2004) these different approaches have a common element, which is the necessity of engaging in employability enhancing activities. Van Dam states, finally, that there is no career when one is not employable (2004). This can explain the positive relationship between employability activities and both preparatory and active job search behaviour.

### 6.1. *Limitations and operative implications*

There are some limitations to the study which must be cited. First, the cross-sectional nature of the study limited the possibility to assess causal relationships between the variables studied. Moreover, the self-reported data were another limitation because people may not perceive themselves accurately. Another limitation concerns the characteristics of the sample considered. Future studies should also seriously consider control variables such as age, because the perception of job loss and consequently job search intensity can be different in young, middle age and mature unemployed workers. Further studies could investigate whether the replication of the study in different geographical areas (for example, in the north of Italy) provides different results. Further research may replicate the study in other countries with different labour markets and different economic and social contexts, specifying past work experiences of unemployed workers too, in order to increase the chance of generalizing the results.

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# **New Graduates Social Capital: Nodes and Ties in the Transition from University to the Job Market**

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## **Introduction**

The role of interpersonal networks in the job market was brought to the attention of in 1973 with Granovetter's work on *The Strength of Weak Ties*. Though it never explicitly mentioned this term, the manifesto of new Economic Sociology (Granovetter, 1985) offered a fundamental contribution to the debate on "social capital" that Bourdieu had started during those years (1980) and that later found a theoretical formulation in Coleman's work (1990). These two branches of studies merged to give birth to a new independent research project that spread internationally and focused on two main subjects: how social ties influence people's behavior and how people can use these networks to achieve specific targets such as the search for a job. In the last decade this field of research saw further development guided by the concept of "social resources" proposed by Nan Lin (2001) who defines social capital as a set of resources embedded in the social structure and that can be accessed or used through intentional actions.

Istat and Isfol (2011) data confirms that in Italy, among the forms of regulation, the micro-social one, based on interpersonal relationships, is the one that prevails over the institutional/public regulation and over the anonymous one of the market. Researches led so far in Italy (Barbieri, 1997; Morlicchio, 1999) show some data against this prevailing international trend: strong ties seem to prevail over the weak ones and this is

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mainly depending on the types of activities but also on the phase of life of the person who's in search of job and on some cultural and institutional aspects. It is therefore useful to connect the general questions concerning the relation between social capital and job searching to specific categories of candidates.

The persisting world economic crisis has had a very hard impact on every class of the Italian population, including the highly educated one. AlmaLaurea survey made it possible to fully analyze the occupational history of graduates during the first five years following the achievement of their university degree with the use of the comparison of a large amount of information regarding the graduates' characteristics and their social and educational background during equal periods of times<sup>1</sup>.

In this situation it is useful to investigate what the role of social capital is when new graduates face the growing difficulties of placement in the job market. In this paper the analysis was conducted following three main questions:

1. What is the importance of relationships in the job placement of new graduates?
2. What is the morphology of social networks that result effective in job searching?
3. What are the characteristics of people who were used as contact by workers who are professionally successful and satisfied?

To answer these questions between June and August 2012 a specific web survey was led on a sample of Master Graduates of 2008 (both from the 3+2 system and the 4 years system) who had participated to the AlmaLaurea survey in 2011 stating that they had found an occupation. It reached a percent of answers of 22% corresponding to almost 6000 interviews.

## **1. The strength of relations in new graduates placement in the job market**

Graduates should be the candidates with less interest to access the job market exploiting personal relationships: they are young and have few or no work experience, so their social networks are poor while, on the other hand, they can exploit a strong human capital which can be of advantage to access the other available channels for job searching.

1. The survey involved almost 400 thousands graduates from 57 different universities both before and after the 2001 university reform. The candidates were interviewed one, three and five years after their graduation. For further readings see AlmaLaurea 2012.

This premise is only partially confirmed by our survey: 24% of the people interviewed stated that they had resorted to relational paths to find a job and 27% of them indicated a specific person who helped them obtaining the job. None of the channels was completely lacking of people who had, at least once, had recourse to relational paths. Among those who found their job through institutional channels they were 14%; 17% among the market channel; 29% among educational channels and 59% among those who found their job through interpersonal relationships. These results confirm, once again, the strong roots that each form of exchange has into relational mechanisms: even when jobs were found through institutional or market paths, their success can be attributed (at least partly) to the information obtained through the social capital.

What can be surprising is the fact that only part of those who declared to have found a job through a relational path has later indicated a specific person as main contact. This incongruence can be connected to the desire to keep secret the informal way followed to find a job: a reticence previously noted (Bianco, Eve, 1999) as a common behavior in a context, like the Italian one, where the common knowledge tends to associate informality with illegality and questions made to find out whether personal channels were used or not can be interpreted as a mean to discover illegal recommendations or corruption. Or it may be due to the fact that the contact person, although it was present, did not have a decisive role in obtaining the job, as stated in the question. It can, therefore, be argued that these results are an underestimation and that personal relations have an even heavier role.

The results showed that people who resorted to relational paths to find a job came mainly from the agricultural faculties (42%), the psychological faculties (37%) and the chemical/pharmaceutical faculties (34%); on the other hand fewer needs of personal contacts was shown by graduates from medicine schools (15%) and educational schools (17%) traditionally more related to institutional channels. The recourse to a person of contact is not restricted to the local level: those graduates who decide to find a job abroad have informal contacts with people who can help them with their search for a job (32% vs 31% in the South of Italy and 26% in the Center-North of Italy). In general, the presence of a person of contact turns out to be extremely useful in every case of mobility, and especially for those who lived in the Center of Italy and found a job in the South (66% vs 27%) or abroad (39%).

People who found a person of contact are mainly graduates coming from high class families: their fathers are self employed (35%); entrepreneurs (33%) or managers (32%) against a 24% of graduates whose father is a factory worker. Their profile is, therefore, weak in terms of age and human capital, but they are supposed to be able to exploit a strong social family network.

Having recourse to contacts doesn't lead to more permanent jobs: people who used this channel are more often workers with fixed-term contracts (33%); with no contract (37%) or with temporary wage contracts (34%). It is very rare, on the contrary that a personal contact leads to a permanent contract (23%). The personal contact is not a guarantee of professional satisfaction either: the average wage of those who recurred to a person of contact is 1200 € and they declare that their satisfaction with their job is of 6,96 on a scale from 1 to 10. Those who found their jobs through other channels have, on the other hand, an average wage of 1288 € and they declare a satisfaction of 7,09 on the same scale. Furthermore, only 35% of graduates who have found their job through a personal contact declare to feel accomplished in their work<sup>2</sup>, while among those who recurred to different channels it grows to 39%.

However, a more accurate analysis requires taking into consideration all the elements that can affect the candidate's professional satisfaction. A model of logistic regression identified the elements that, *ceteris paribus*, affect the probability to have a high level of professional accomplishment. Later, through a scoring technique, we attributed a score to the characteristics that turned out to be significant to picture the profiles of graduates who were highly or scarcely satisfied with their profession. The analysis was conducted on more than 3500 interviewed. The candidates taken into consideration are required to be not self-employed nor have started their job before graduation. To point out which were the aspects that affected the case of study and determine the weight of each of them we run a discriminant function analysis on two different groups considering: gender; father's profession; relational and educational social capital; faculty; attendance to classes; degree of graduation; working experience during the study period; channels used to find a job; number of working activities after graduation; job typology; full time/part time; firm's economic sector; public/private; geographic area of the job.

After this we ran a discriminant function analysis only on those factors that turned out to be significant in order to evaluate those variables that are more effective on the case examined. Through a scoring procedure we assigned a score (Table 1) to each variable in proportion to its effectiveness in finding a job (Saporta, 2006). The overall score assigned to each graduate is the sum of the single score of each variable considered. It varies on a 0 - 1000 scale where "1000" is the profile associated to the maximum probability of having a high professional satisfaction. On the contrary "0" is associated with the profile of a candidate whose prob-

2. The index of professional realization is a synthesis of the main factors of work success: time spent to find a job; retribution; average satisfaction with the duties that the job requires and use of the competences acquired during university.

ability to have a high professional satisfaction is zero. Graduates with a score between 546 and 1000 are in the “green group”, representing profiles of candidates associated to a high probability of professional satisfaction. On the opposite side, graduates with a score between 0 and 361 are in the “red group”, representing profiles of candidates associated to a low probability of professional satisfaction. The “orange group”, finally, covers the uncertainty area and represents profiles of candidates whose professional satisfaction is difficult to predict and whose score stands between 362 and 545. The width of this “orange zone” and the percent of graduates that it represents give an evaluation of the effectiveness of this model. Furthermore, the capacity of prediction of this model must be considered more than acceptable in consideration of the fact that the information given is correctly classified for the 67% in average and for the 70% among graduates who result highly satisfied with their job.

*Tab. 1 - MA graduates with a job, not self employed, three years after their graduation: scores attributed through a “scoring technique” to each variable useful to determine a high professional satisfaction. (Survey representing Italian Graduates)*

<i>Variables</i>	<i>Score</i>	<i>Variables</i>	
Gender		Existence of a person of contact	
Male	26,72	Yes	11,04
Female	0,00	No	0,00
Last profession of Father		Working at the time of graduation	
Employer, Cooperative associate, Co-entrepreneur, self employed	24,71	Changed the job he/she had at the time of graduation	9,37
Entrepreneur, self employed	42,09	Started working after graduation	0,00
Manager/ CEO or Business Executive	17,75	Number of working experiences after graduation	
Employee	11,40	only 1 working experience	34,39
Factory Worker	0,00	2 working experiences	9,42
Field of study		more than 2 working experiences	0,00
Medicine	255,24	Typology of job	
Chemistry – Pharmacy	180,00	Permanent job	72,09
Science	116,84	Temporary job	0,00
Engineering	114,72	Full Time/Part Time	

Physical Education	104,52	Full Time	91,22
Economy-Statistical Sciences	83,45	Part Time	0,00
Education	69,56	Field	
Languages	50,97	Public	63,32
Geo-Biological Sciences	49,68	Autonomous/Non profit	0,00
Law	36,79	Firm's Field of Activity	
Psychology	27,13	Agriculture/Industry	39,13
Architecture	26,07	Services	0,00
Arts-Humanities	17,77	Geographic Area of Work	
Political Sciences	12,76	North	71,29
Agriculture	0,00	Center	35,07
Degree of Graduation		South and Islands	0,00
Below average	0,00	Abroad	114,92
Above average	27,01	Graduates' initiative <sup>1</sup>	
Attendance of classes		Disappointed	0,00
university completed in due time	20,40	Adaptive but weak	24,78
1 year after due time	17,93	With temporary jobs but looking for better conditions	41,10
2 or more years after due time	0,00	Entrepreneurial élites	66,04
Channel used to obtain the job		Relational social capital	
Market channel	32,33	Poor	0,00
Institutional channel	34,36	Medium	10,70
Relationship channel	0,00	Rich	59,48
Educational channel	53,33	Associative social capital	
		None/Low	14,21
		Medium/High	0,00

The field of study can influence up to 25% (in case of medical professions). In a similar way, the geographic area, the full time job and the permanent job contract have a strong influence on positive results (11% for working abroad, 9% for full time jobs and 7% for perma-

ment contracts). Other variables result less influent: study performances (attendance to courses and degree of graduation), gender and number of working experiences after graduation have an incidence of about 2-3%. The analysis of channels that resulted effective to obtain the job shows how determinant the educational channel is (53 points) and, though in lower percent, the institutional and market channels (34 and 32 points). The relational channel, on the contrary, turned out to be ineffective. It is also true, though, that having a high social and relational capital and having recourse to a person of contact when settling in a new workplace have a positive influence on professional accomplishment (69 and 11 points respectively), which confirms, once again, the strength of relationships in institutional and market exchanges. Each variable with the highest score/score of “0” corresponds to the hypothetical profile of a candidate with the maximum/minimum probability to have a high professional satisfaction.

From this first analysis we notice a difference between exploiting a relational channel and using the social capital also in different channels. Though relational channels proved to be ineffective – if only considered as such – it is useful to underline that there are differences among people interviewed that belong to two main factors: the morphology of their social networks and, for those who used them for job searching, the characteristics of the person of contact and of his/her relation with the candidate.

## **2. Morphology of networks that are useful in job searching**

One of the central questions about social capital and job searching regards the quantity and qualities of ties that the candidates can exploit. To analyze the social morphology of new graduates we used a simplified version of “position generator” initially proposed by Nan Lin (2001) and later used in many different researches. This measurement instrument is based on a set of significant structural positions of a society in which the candidate is asked to indicate his/her contacts and his/her relationship with the person who occupies that position.

The combined analysis of the number of contacts, their position and the graduates’ social networks strength allows identifying nine clusters of graduates<sup>3</sup>.

3. A first study of the graduates’ social nets was developed through the ACM that permitted to transform the original quantitative variables into coordinates of the factorial space. The 36 variables, corresponding to 12 professional figures, were considered as active variables or variables on which was developed the ACM. Each variable was consid-

The solitaires (16%) have extremely poor relationship. This group is composed mainly by women who come from families where at least one parent has a university degree. They haven't had any working experience during their course of study and they come mainly from chemical-pharmaceutical faculties, psychology and law. They have scarce mobility both for studying and working reasons (they live, study and work in the Center-South of Italy). They would be available to change their residence for working reasons but only to remain in the same geographical region. They tend to distrust people.

The snobs (16%) have a poor but very specific high status relationship net; they come from middle class or bourgeois families where at least one parent has a university degree. They have never worked during their studies and they have had experiences of study abroad. They come mainly from the faculties of Architecture and Engineering. They work abroad in a percent higher than the average.

The flaneurs (15%) have rich and socially variegated relationship and they have high-status relatives or friends but they also declare to have multiples ties to people with different professions and jobs. These graduates and some of their relative belong to associations of various kinds. They have had working experiences during university and they come from bourgeois families in which at least one parent has a university degree. They indicate three main aspects as most relevant as job changing factors: a challenging workplace, a job that gives responsibilities and autonomy and a permanent and secure job. They mainly come from medicine, chemical-pharmaceutical and geo-biological faculties of Northern Italy's universities. They declare to trust people very much.

The populars (13%) have family relationships with low class workers. They come from low class families and their parents come from the working class and have a degree of primary or secondary school at the most. They are mainly women and come from the faculties of humanities and psychology. They haven't had working experiences abroad but they have worked during university. Among the factors that they consider worth for changing their job they mention the job stability, and the possibility of flexible working hours. They wouldn't be available to change their residence to work. These graduates have scarce mobility and they have studied and work in the South of Italy.

ered individually, according to the type of tie that it had with the graduate. The ACM results were used to group clusters of graduates that resulted internally homogeneous but heterogeneous between one another, also avoiding potential problems connected to interdependence between the variables considered (Saporta 1990). For each statistic unit the coordinates of the new system of factorial axes were calculated and later used to measure the distance between each candidate. The described analysis was related to more than 5700 workers, including self employed and employees.

The socials (11%) have a very rich network of friends. They are mainly men who live, have studied and work in the North of Italy. They are members of many associations. They would be willing to change their residence only to move to a neighboring region. They come from agricultural and political sciences faculties, they have worked during their university's studies and their families are white collars workers.

The job keepers (10%) have a rich network of relatives and friends of different kinds and social classes: in particular they have high status family ties, but they also have acquaintances and friends among many other professionals from every social class. They declare to be active participants in various kinds of associations, both personally and with their family. These graduates come from bourgeois families where at least one parent has a university degree, they live in the South of Italy but tend to move to the North for work. During their university career they have studied abroad and worked, which explains the average higher age of graduation and the slightly lower degree achieved. These graduates tend to keep the job they have started during university and are self-employed in every aspect of their profession. They come mainly from economic-statistical and political sciences faculties and they state that the most important job changing factor is the possibility to be more autonomous and have more responsibilities. They would be willing to move their residence even abroad and they trust people very much.

The rising (8%) are part of a process of social mobility. They are graduates with a strong network of acquaintances but who have a scarce network of relatives and friends. They participate very actively to various kinds of associations both personally and with their families. They are mainly men, self employed and, probably because of the economic difficulties of the family they come from, they have worked during university and have not had the chance to study abroad. They graduated at a slightly higher age than the average of the population. They live and have studied in the North of Italy. They would not be willing to move to change their job or, at the most, they would move in a city of the same region where they live. They come mostly from the faculties of medicine and architecture.

The distant (6%) have a very rich network of weak ties (acquaintances). They are mainly men who live, have studied and work in the North of Italy and belong to bourgeois or working class families. Their parents have a degree of secondary or high school. They declare that the aspects that they recognize as job changing factors are a higher pay, a professional growth or the job stability and a higher autonomy or responsibility in their job. They come from engineering faculties.

The connected (5%) have a rich network of relations of various kinds and social level. Their most important net is inside the family because

they count among their relatives or friends union leaders, local politicians and journalists. A member of their family belongs to a professional or union association. He/She and one of their family members belong to a sport/cultural/recreational association. These graduates live, have studied and work in the South of Italy, they are mainly women who declare that the factors that would lead them to change their job are the professional growth, job autonomy and responsibilities and high earnings. They would be willing to change their residence to move in any Italian region. Their parents have a degree of high school, they have had working experiences during their studies and they come mainly from law and political sciences faculties.

It is possible to associate these profiles to the processes of job searching and to the results obtained. The market channel of job searching proved to be more effective than the average for the solitaires (52% vs 48%), the socials (50%), and the distant (49%); the institutional channels proved to be more effective than the average for the snobs (18% vs 16%), the flaneurs (18%), and the rising (18%); the relational channels proved to be more effective than the average for the job keepers (27% vs 24%) and the connected (26%). Graduates who had recourse to a person of contact for job searching are those who can exploit a higher index of relational social capital: the job keepers (31% against an average of 27%), the rising and the socials (30%). On the opposite side we place the solitaires (22%) and the distant (25%).

The clusters that are associated to a higher professional satisfaction are those of the distant, the flaneurs (42% of them has a high index of professional satisfaction) and the socials (41%). Lower professional satisfaction is recorded, on the other hand, among the popular (32%) and the connected (33%).

If we compare the index of professional realization with the recourse to a person of contact we can isolate four main cases: a) graduates who do not exploit their social networks during job searching and who don't reach acceptable levels of professional realization (among these the solitaires and the popular); b) graduates who exploit other channels and reach good results like the snobs, the distant and the flaneurs; c) graduates who exploit their networks but reach scarce results like the connected and d) graduates who exploit their networks and reach a high level of professional satisfaction like the socials the job keepers and the rising.

To sum up, considering the general characteristics of the social network, we can argue that new graduates who had recourse to relational channels belong mainly to the clusters of the job keepers and the connected who can exploit a rich network of relationship of various type and social level. It is interesting to note, though, that while job keepers show a level of earnings and of professional satisfaction higher than the

average, the connected result below the average in both aspects. We can, therefore, conclude that the availability of a rich social network represents a requirement to access relational channels, but that professional realization depends on different factors, one of which being certainly related to the characteristics of the person who served as a contact between the candidate and his employer.

### **3. Characteristics of the persons who served as contact for graduates**

When a new graduate uses the social capital for job searching a fundamental factor, beside the morphology of the network, is determined by the characteristics of the person of contact and his/her relationship with the candidate. Research conducted in Italy contradicts Granovetter's study on "the strength of weak ties" (Granovetter, 1973): family and friends show better results compared to weak ties, especially when searching for a first job. The only exception – which is for us the most interesting aspect – is represented by skilled workers (Barbieri, 1997; Morlicchio, 1999).

Combining our information about the characteristics of the persons of contact and his tie to the candidate<sup>4</sup> it is possible to group graduates in four main clusters:

The weak ties (43%): their person of contact is a manager (27% vs 14% of the overall) or a self employed (26% vs 16% of the overall) with a professional degree (8% vs 5%) that they are tied to by acquaintance (26% vs 15%) or by working relationship. It is more often a woman (39% vs 35%) aged from 30 to 39 (39% vs 24%) or from 40 to 49 (27% vs 24%) whom they have seldom (few times during a year 43% vs 31%) been in touch with during the period of their job searching. Their age is slightly higher than the average (27 vs 26), and a graduation degree higher than 91; they have found their job, often in the field of chemicals or energy (8% vs 6%) through a market channel. Their degree is quite useful for the chosen job.

The friendship ties (21%): their person of contact is a temporary worker (31% vs 7%) or an employee (42% vs 22%) or an unemployed (18% vs

4. A first analysis of the person of contact and the correspondent impact of his/her influence on the graduates' occupational results was developed through an ACM. The variables that were considered "active" were: gender of the person of contact; age; study degree; position in his/her profession; type of tie; frequency of contacts at the time of the job search. The results of the ACM were used to identify clusters of graduates. For each statistic unit the coordinates of a new system of factorial axes was calculated and, in a second time, used as measure of the distance between individuals. The analysis was conducted on more than 1300 candidates with an occupation, not self employed, who declared they had a person of contact whose influence was fundamental to obtain the job.

4%); more frequently a woman (48% vs 35%) aged between 20 and 29 whom they are connected to by a friendship relation (61% vs 23%) and whom they have been seeing more than once a week (37% vs 28%) during the period of their job searching. These candidates are mainly graduated in engineering, their age at the time of graduating is slightly lower than the average and they have found their job through a relational channel. They work mainly in the tertiary sector (transports, advertising, informatics and other services) and more often than the average abroad (12% vs 7%).

Educational ties (20%): they have found their job through the contact of a university professor or manager (91% vs 28%), more often a man (77% vs 65%), with a university degree, aged between 40 and 69 and tied to the candidates because of an educational reason (74% vs 22%). These graduates come mainly from the geo-biological faculties. They work mainly in the field of education and research (21% vs 12%), in health structures (16% vs 10%) and in the public sector (30% vs 17%). They declare they have found their job through an institutional channel and they earn more than the average (€ 1261 vs € 1203). They value their degree as very effective (50% vs 34%): indeed, the competences they acquired during their studies are used more than the average (59% vs 44%) and they are highly satisfied with their job (7,2 vs 6,9).

Family ties (16%): their person of contact is a relative (69% vs 16% of the overall), often an entrepreneur (36% vs 6%) or a self employed (15% vs 2%). They are men, aged from 50 to 59 (39% vs 23%) or from 60 to 69 (15% vs 9%) with a high school degree (43% vs 17%). Candidates whose person of contact was a relative declare that they have seen him/her frequently during the period of their job searching (everyday 63% vs 27%). The candidates are graduates who come from bourgeois families (37% vs 28%) where at least one parent has a university degree; their father is self employed (20% vs 13%) or an entrepreneur (8% vs 5%). They come from the faculties of Law, Chemical, Pharmacy and Architecture. They live, have studied and are employee in the South of Italy (30% vs 18%) in the private/non-profit sector (94% vs 83%), in business activities (15% vs 7%) or in building activities (10% vs 7%). Their monthly pay is lower than the average (€ 1074 vs € 1203). They are relatively less satisfied with their job than their colleagues. Their university degree is not very useful for their job both with respect to the use of the competences acquired during university and with respect to the degree required to do the job.

This analysis shows the importance of educational ties. Though this result has a specific connection to the candidate's characteristics, it also shows to have a particular importance that requires to be more deeply analyzed. New graduates whose point of reference was an educational tie are only one fifth of the overall of those who declared to have a person of

contact, but they show a higher rate of professional satisfaction (43% of highly satisfied candidates' vs 35%).

This evidence takes particular strength when we examine the data connected to the effectiveness and the use of the competences acquired during university to do the job. The survey was conducted on more than 1000 graduates who declared they have found their job with the help of a fundamental person of contact and who are not continuing a job they had before graduation. With the help of a model of logistic regression and of the application of a scoring technique<sup>5</sup>, we were able to underline that, apart from the chosen faculty (which, as we have seen in the previous model, can affect the results obtained up to 270 points on 1000), having an educational tie with the person of contact represents the most influential variable with respect to the effectiveness of the acquired competences during the studies (153 points); the following variables are working abroad (99 points) and having a profile associated with entrepreneurial attitude (69 points). If we focus our attention on the social capital we can confirm the moderately positive effect of relational social capital (9 points) and we notice the importance of participating to social activities and to be part of associations (33 points).

Regardless of the channel used to find a job we can, therefore, argue that a high social capital provides adequate instruments for a higher coherence between the course of study and the job.

The characteristics of the person of contact that result determinant for the use of the competences acquired at university are connected with: an educational tie (153 points); a tie with an entrepreneur or a self employed (68 points); a tie with a manager or a CEO (39 points); a tie with a graduate (58 points) aged under 40 (25 points) or over 50 (19 points). These generational differences can be explained by the typology of the tie: in particular, graduates declared to have educational ties (which, as we said, is the most effective tie for the use of the competences acquired during university) mainly with persons aged over 50, and professional ties (the second in order of importance; 43 points) with persons aged between 30 and 39. It is interesting to note that the gender of the person of contact has scarce influence: having recourse to a man gives an advantage for professional realization of only 9 points on 1000.

5. The discriminant function analysis considered as exogenous variables: gender; father's profession; relational and educational social capital; faculty, attendance to studies and degree of graduation; working experiences during studies, channel used to find current job and number of working activities after graduation; type of activity, full time/part time, geographic area of working; characteristics of the person of contact. In the scoring model the red belt corresponds to scores between 0 and 348; the orange one between 349 and 536 and the green one between 537 and 1000. The percent of correct classification corresponds to 66%.

## Conclusions

In the analysis of the modality in which job supply meets demand, literature and public opinion indicate among the main critical points the scarce transparency of relational channels and wishes for a strengthening of the institutional and market channels. The study of the role of social capital in job placement of new graduates has shown mechanisms that have not been very much explored so far and that dispute this assumption.

If we consider the three main questions we conducted this study with, we can, first of all argue that “relationships count” in the job placement of new graduates, though new graduates have recourse to relational channels less than the other candidates and though relational channels don’t determine a higher professional satisfaction. The impact of social capital is indirect and it is interesting to note that candidates had a person of contact also inside market and institutional channels: even when they don’t represent a “bridge” between job supply and demand, social networks promotes the circulation of information and trust mechanisms useful to profitably use other channels.

This confirms thesis already acknowledged in literature about the rooting of social exchanges making unrealistic the ideas of transparency and impersonality normally attributed to the market.

Concerning the second question about the morphology of social networks for job placement and for professional satisfaction, it is useful a reflection on the quantity and the quality of available ties and on those that were exploited for job searching. New graduates who had recourse to relational channels are mainly those who belong to the clusters of the job keepers and of the connected who can exploit a rich net of relationships of various type and social level. But while job keepers, show a higher than average level of retribution and satisfaction, the connected stand below the average for both these aspects.

The result obtained depends mainly on the characteristics of the person of contact and on this point was focused the last part of this research. The analysis showed that personal ties (relatives, friends and acquaintances) are more frequent but less effective for professional satisfaction. The most useful ties to obtain well paid and highly satisfactory jobs are those with university professors to whom one on five candidates state to be related. This result disputes the generalizations that lead to an aprioristic refusal of relational channels and promote a further reflection on the “quality of ties” and on the role of networking in job searching.

From this first investigation we are therefore able to open two new lines of research oriented to the implementation of the models adopted and to the enrichment of the interpretative picture. In particular, it would be interesting to re-propose a more extended version of the position gener-

ator weighing every single profession on the basis of its social prestige and to conduct a research on the quality of the role of the university professor in the job supply and demand process. These insights would be useful to identify new policies to enhance relational channels in the matching between demand and supply of labor.

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# **Analysing the role of human capital in sustaining employability in later life: A comparative study**

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## **1. Introduction**

Two of the most influential trends that are impacting the job landscape in Europe are the demographic change process – especially population ageing – and the incremental business flexibility due to innovation and globalization (UKCES, 2014; EC, 2002). Overall, we are facing a great change in the qualitative and quantitative structure of the labour forces and the erosion of the standard employment relationship. On the one hand, globalization has intensified economic integration, has increased the levels of competition, and has accelerated the requests for continuous technological advances. These tendencies have led to an increased need for companies and workers' flexibility that means increased ability to adapt to continuous and rapid changes, respectively in order to be able to compete and to find or maintain a job. On the other hand, due to the population ageing process, despite the current economic crises, the long-term perspective is one of labour shortage for all EU member states. In order to face this not-too-distant future, increased levels of labour market participation seem to be the most effective solution. Among others, this means prolonged work careers and increased – if compared to nowadays levels that are far from Europe2020 strategy benchmarks (EC, 2010) – labour market participation of older workers. The described tendencies could result in opportunity/risk scenario for older individuals, who are called for a prolonged activity in the labour market but, at the same time, need to

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maintain and increase their capability to find a job or to remain employed in evolving contexts.

The ratio for the present paper stands on the joined observation of the two above-mentioned contemporary issues – need for increased older workers' labour market participation and increasing flexibility of work – that calls for analysis of older workers' capability to find, maintain or change job in late career. Therefore, our aim is that of investigating the concept of employability when referred to a specific workers' age group: the older workers. The promotion of increased levels of older individuals' participation in the labour market is, in fact, at the core of the contemporary political debate on maintaining long-term sustainability of our social protection systems (EC, 2002). It depends on *i*) enabling institutional environments that sustain and promote older workers' employment; *ii*) individual's readiness for work in changing socio-economic contexts. This perspective of analysis is broad, as it includes both the supply-side factors – individual characteristics – and the institutional factors that affect whether a person can find, maintain or change job.

To translate this approach into empirical investigations, the paper focuses on – *i*) the comparative analysis of older workers' employability levels across different European countries with different institutional contexts; *ii*) the regime-based analysis of individual employability variables that predict better/worse older workers' occupational performances, with a special focus on human capital variables. We applied techniques of longitudinal analysis to the SHARELIFE data, the third retrospective wave of the international Survey on Health, Ageing and Retirement in Europe, which allows us to consider the whole career of older workers in the sample.

The paper is organised as follows: first, we discuss the existing research and literature on the concept of employability; in the second part, we focus on individual and institutional variables that influence older workers' employability and employment inclusion; next, we present the design of our study and we discuss the first results. Lastly, we draw conclusions and hints for further research.

## **2. Employability: concepts and meanings**

Since the '90s the concept of employability has shifted at the core of the scientific and political debate on labour market policies and trends (McQuaid, Lindsay, 2005). The goal of promoting employability, especially for those groups potentially at risk of unemployment and social exclusion – young people, the low-skilled, the long-term unemployed etc. – has commanded a central place in labour market policies in Europe

and in most EU member states. At the supra-national level, several institutions have contributed to this shift. Employability promotion has been one of the four original pillars of the European Employment Strategy (CEC, 1999). The United Nations has declared employability as a priority for the promotion of youth employment (UN, 2001). Again, it has been argued that the OECD has played a crucial role in promoting «active policies to improve the employability of the unemployed, across international boundaries» (Sinfield, 2001 in McQuaid, Lindsay, 2005, p. 199). Despite this centrality, the concept of employability is still quite obscure and its meaning and use remains contested in both theory and practice.

From the individual perspective, employability is defined as the worker's capacity and willingness to remain attractive in the labour market (Sanders, de Grip, 2004). This capacity depends, first, on individual attributes. De Grip *et al.* (2004) identify three attributes that measure the capacity and willingness of individuals: mobility (changing jobs and organizations), training (skill enhancement), and functional flexibility (changing shifts, working beyond job description). Fugate *et al.* (2004), identify three dimensions of employability: the first refers to the professional identity that motivates a person to realize career aspiration; the second refers to personal adaptability; the third refers to the degree of awareness about career opportunity, also depending on networking skills. Sanders and de Grip (2004) mention training participation and task flexibility as “employability instruments” that sustain the ability to remain attractive in the labour market.

Gazier's work on employability (1998 & 2001) has systematized the volume of different conceptualizations of employability in different operational definitions developed across the last decades. In particular, the latest conceptualization emerging from the literature, that according to the author has collected the largest consensus, is that of interactive employability. This concept links individual employability to the employability of others and to the opportunities and institutional features (rules, regulations etc.) of the labour market. Gazier states that interactive employability «maintains the focus on individual adaptation, but introduces a collective/interactive priority» (Gazier, 1998, p. 300). The concept of interactive employability underlines that employability policies should also focus on different kinds of barriers to individual employment, rather than only on individual attributes. This definition is coherent with a contextualized construct of employability: the capacity and willingness to remain attractive in the labour market and their influence on the employment performance depends also on contextual factors that enable individuals to use their instruments. In this sense, one of the key differences among the definitions of employability developed across time is the narrow or broad perspective under them. We refer to the fact that some of the definitions

look at employability primarily as a personal attribute and as an individual responsibility, while others adopt a more contextualized approach by emphasising both labour market demand-side and supply-side factors of influence.

### **3. Older workers' employability and employment performance: individual and institutional determinants**

As it refers to both unemployed people seeking work and to employed people seeking better jobs (McQuaid, Lindsay, 2005), when referred to the older workers, the concept of employability acquires even more importance. In fact, compared to the younger workers, workers at the last stage of their career experience more difficulty in maintaining their job during restructuring processes, in securing re-employment after an unemployment episode and in experiencing job mobility episodes (Taylor, Walker, 1998; Brewington, Nassar-McMillan, 2000). The condition and performance of older individuals in the labour market and their rate of early retirement can be positively or negatively affected by accelerated economic changes due to globalization (Blossfeld *et al.*, 2006) depending on individual attributes, work regulation models and country-specific institutions that filters these possible effects. As underlined by Blossfeld, Buchholz and Hofäcker (2006, p. 2) in the adjustment process that follows changes in technology and work «older workers increasingly face a more difficult structural labour market position for a number of reasons» that calls for a contextualized and longitudinal approach to the analysis of their employability. First, older employees, especially those with higher educational levels, experience more difficulty in changing firms in late career as job security often increases with seniority. The same is for wages: older workers often earn more than their younger colleagues. These two characteristics of work in late career make it difficult for older individuals to experience job moves across firms. Again, when there is a need for reducing costs and restructuring, older workers are often pushed into early retirement, as their younger colleagues are more flexible and less expensive options. Second, skills and competences of older workers are often at risk of obsolescence due to the sharp acceleration of economic, technological and organizational changes. This on the one hand limits their opportunity of re-employment after a job loss and, on the other reduces the return on training investment for this age group. Overall, in a context of globalization and change «the higher job security and wage levels of late-career employees are often at odds with the faster obsolescence of their skills and competences, the lower profitability of their re-training investments and their lower competitiveness with regard to the better qualified younger generation for newly created jobs» (Ibi, p. 3).

This structural disadvantage is exacerbated or reduced by institutional filters. This concept refers to those nation/regime specific policy and productive configurations that can mitigate or worsen the effects of the socio-economic instability on older workers' ability to gain or maintain a job. By adopting the comparative perspective in analysing the effects of these institutional filters, according to some scholars, globalisation in the long-term should reduce the differences between national contexts, bringing about a convergence of labour market regulation and, more generally, of welfare systems (Mills *et al.*, 2009). However, there is no obvious convergence to similar institutional models, both in the regulation of labour markets and of social protection systems, but rather a slight easing of national differences (McBride, Williams, 2001; Kautto, Kvist, 2002). The patterns of life courses, and therefore careers, are still very different and they are determined by national arrangements that retain the ability to affect the economic and employment conditions of its citizens.

With regard to the management of older workers' employment, have been identified two ideal types of strategies through which each national context can react to the pressures of globalisation. On one hand, it is possible to provide incentives to transition to retirement, so that redundant older workers with obsolete skills leave the labour market; on the other, it is possible to implement policies to extend the careers by investing in older workforce's adaptability to new labour demands, although this may mean an increased risk of employment instability. The first one is defined *employment exit strategy*, while the latter represents the *employment maintaining strategy* (Bucholz *et al.*, 2006). Of course, modern economies do not follow completely one of these strategies, but it is easy to expect that each national context is closer to one perspective than it is to the other.

### 3.1. *Regime-based classification and inter-regime differences*

Based on the welfare regimes classification (Esping-Andersen, 1999; Ferrera, 1996), recent studies have analysed the combination of institutional factors that make each welfare regime closer to the *employment maintenance* or *employment exit* models of older workers' employment regulation (Blossfeld *et al.*, 2006; Hofäcker, 2010). In the Conservative and Mediterranean regimes, neither the structure of education systems – with training fully concentrated in the first part of the life course and few lifelong learning policies – nor the pension schemes, which provide opportunities for early exit and generous benefits, promote the extension of older workers' careers. The Mediterranean regime has regulatory systems that provide a high degree of protection for adult and older workers, who are

very unlikely to experience episodes of unemployment (Hofäcker, 2010). For these welfare regimes is thus conceivable that the incidence of unemployment for workers over 50 is very limited. Social-democratic countries are more oriented towards upgrading their aging workforces in order to keep them active in the labour market. Above all, investments in training and widespread active labour market policies that encourage the return of the unemployed have helped maintaining a high degree of employability for workers aged 50 and over. In addition, the provision of benefits conditional on participation in retraining programs and pension systems that, while generous as in the case of Sweden, offer no favourable exit routes, have led to the emergence of an employment maintenance strategy focused primarily on the public role (Kvist, 2001). Northern European countries face unemployment, even of adult and elderly workers, with strategies aimed at the swift recovery of the labour market. It is therefore conceivable that there is a greater risk of becoming unemployed even in old age compared with countries in Central and Southern Europe. However, these episodes of unemployment are relatively short-lived and do not represent a source of definitive exit from the labour market.

Different institutional arrangements also mean that even in the same regime some groups of workers are more at risk of experiencing employment instability because of the different weight of some individual characteristics especially related to human capital in influencing work trajectories (Naschold, De Vroom, 1994). Hofäcker (2010) – starting from the previous definition of employment maintenance/exit strategies – has classified the importance of some individual characteristics in sustaining employment in later life. In particular, the scheme classifies specific individual/work indicators and set different levels of strength of the effect of these indicators on older workers' occupational performance within different institutional settings. Those indicators referred to work conditions are: *i*) the type of industry (declining or expanding sectors); *ii*) the firm size (small, medium or big enterprise) and *iii*) the employment status (dependent or self-employment). The individual-level indicators included in the scheme mainly concern the human capital: *i*) educational level; *ii*) occupational status; *iii*) participation in lifelong learning. In globalized economies and societies the versatility of education and occupational skills play a central role for the maintenance within the labour market and for the ability to get new types of job (Ibi, p. 143; Ocse, 2006, p. 177).

As for what concerns the first group of indicators, due to the rapid transformation of both the economic and the occupational structure of our societies, we are facing the progressive decline of traditional industries and a move towards the so-called service society. Older employees in these declining sectors are those most at risk of occupational exclusion within employment-exit oriented countries, while within employment-

maintenance contexts the transformation of the economy could lead to increased level of job mobility for older workers. Firm size is the second indicator listed in the scheme: within medium and big companies there is a need for changing organizational structures in time of crises and, mainly due to seniority-related labour costs, older workers are particularly affected by processes of staff reduction. At the opposite, within small enterprises the older worker's competence and experience is often at the core of the processes of value creation and this acts as a form of protection for them. The disadvantage effects depending on work conditions are much stronger in Mediterranean countries than in Conservative, Liberal and Social democratic countries: in fact, in the first there has been the most significant decline in industrial employment and there is a strong divide between large and very small firms. Concerning the "human capital" group of indicators, the author stresses the already commented issue of the vanishing of jobs with low skills demands, that of skills obsolescence and the fact that older workers with lower levels of education are less inclined to update their competences through lifelong learning (Ocse, 2006). In general, the degree of influence of human capital variables on late career patterns is stronger in those countries with higher levels of stratification and standardization of the education system, with higher levels of labour market segmentation and with a less developed lifelong learning system. Namely, the strength of these variables is higher in Mediterranean and Conservative countries than in Liberal and Social Democratic ones.

#### **4. Research design, data and methods**

We apply a broad/contextualized definition of employability to run a comparative analysis on the influence of older workers' human capital on their employment performance in different European countries. Therefore, our aim is that of analysing one of the employability components – human capital – that has been defined as fundamental in influencing older individuals' participation and performance in the labour market. We seek to describe the strength of the effect of human capital variables on late-career trajectories and the strength of its influence on employment performance in different institutional contexts classified by the literature as *employment maintenance/employment exit-oriented* context.

For what concerns the operationalization of the concept of human capital, we rely on the classical economic theory contributions, in particular from Mincer who distinguishes between two types of training: formal and informal (1958). With the first type, he refers to formal education acquired at school and university, while the second type under-

lines the importance of work experience as a central element of the skills acquired on the job. The positive association between education and status in the labour market has already been pointed out by several scholars of different disciplines. In particular, in the last few decades education seems to have acquired a fundamental role because of rapid changes in the economic and occupational structures and, consequently, changing educational requirements (Riddell and Song, 2011). As underlined in social stratification research by modernization theory (Blau, Duncan, 1967; Treiman, 1970), occupational status attainment should rely more and more on merit, particularly knowledge and skills, then the education could represent one of the most important characteristic in the labor market. Concerning informal learning – those skill and competencies acquired “incidentally” living the workplace (Maranto, Rodgers, 1984) – it has always been a valuable resource for maintaining and/or increasing employees’ performance and its importance starts to increased when it became clear that most learning does not occur in formal learning situations, but mainly informally (Marsick, 2006).

Our aim is that of evaluating to which extent these two different human capital measures are associated to job loss risk for workers age 50 years or over 50 within different institutional contexts.

Concerning the definition of the institutional contexts, we refer to the above commented literature on older workers’ employment instability in Europe (see § 3.1) in particular, on the classification of different welfare regimes, according to their employment maintenance and employment exit strategies. We briefly remind that countries classified under the Mediterranean regime represent the pole of the employment exit strategy. Countries of the Conservative regime are closer to the employment exit than to the employment maintenance pole. Countries of the Liberal and the Social democratic regime represent the employment maintenance pole.

The hypothesis at the base of our study concern *i*) the key role of human capital (defined by education and job experience variables) in protecting older workers from job loss risk and *ii*) the capacity of regime-specific institutional contexts of filtering the effect of individual human capital on employment transitions, resulting in differentiated older workers’ late-career patterns.

In order to test our hypothesis a longitudinal approach is preferable. We use data from the “*Job episode panel*” derived from SHARELIFE (Brugiavini *et al.*, 2013.). SHARELIFE is the third wave (2008-2009) of data collection of the Survey on Health, Ageing and Retirement in Europe (SHARE)<sup>1</sup>, which focuses on older individuals’ life histories. Almost

1. The Survey of Health, Ageing and Retirement in Europe (SHARE) is a multidisciplinary and cross-national panel database of micro data on health, socio-economic status

30.000 men and women across 13 European countries took part in this round of the survey. Due to data availability, we focus on countries classified under the Mediterranean, the Conservative and the Social democratic regimes. The respondents are representative for the European population aged 50 and over in Social democratic regime (Denmark and Sweden), Conservative regime (Austria, France, Germany, Switzerland, Belgium, and the Netherlands) and Mediterranean regime (Spain, Italy and Greece).

Taking into account approaches previously explained, we identify in our data two measures as *proxy* of formal and informal human capital: respectively the educational level derived from Isced 97 classification and the job tenure expressed in years. We selected male individuals with at least one employment spell at the age of 50 years or more and then we followed them until they left the labour market (retired or inactive)<sup>2</sup>. Table 1 shows a brief description of our sample by resuming some characteristics of older workers at first observation considered in our analysis, for each group of countries.

We applied to our data techniques of discrete time event history analysis (Allison 1982; Yamaguchi 1991) which allow us to consider the effect of time (age, cohort and period effect) on individual changes of status. We estimated a multiple destination model to consider combined effect of these two variables on risk of transition from employment to unemployment (and others labour market status<sup>3</sup>). In particular, in order to evaluate the combined effect of our two measures of human capital without missing the temporal dependence and controlling for other variables, we run a competing risks model in which we estimate the effect of explan-

and social and family networks of more than 85,000 individuals (approximately 150,000 interviews) from 19 European countries (+Israel) aged 50 or over. This paper uses data from SHARELIFE release 1, as of November 24th 2010 (DOI: 10.6103/SHARE.w3.100). The SHARE data collection has been primarily funded by the European Commission through the 5th Framework Programme (project QLK6-CT-2001-00360 in the thematic programme Quality of Life), through the 6th Framework Programme (projects SHARE-I3, RII-CT-2006-062193, COMPARE, CIT5- CT-2005-028857, and SHARELIFE, CIT4-CT-2006-028812) and through the 7th Framework Programme (SHARE-PREP, N° 211909, SHARE-LEAP, N. 227822 and SHARE M4, N. 261982). Additional funding from the U.S. National Institute on Aging (U01 AG09740-13S2, P01 AG005842, P01 AG08291, P30 AG12815, R21 AG025169, Y1-AG-4553-01, IAG BSR06-11 and OGHA 04-064) and the German Ministry of Education and Research as well as from various national sources is gratefully acknowledged (see [www.share-project.org](http://www.share-project.org) for a full list of funding institutions).

2. It was not possible to consider women because there are too few job episodes among less recent birth cohorts, especially in Mediterranean countries.

3. We will concentrate our attention on the first risk (to be unemployed instead of employed), while other transitions out of work will be not presented here with the only exception of employment-retirement one. Please refer to the authors for the complete analysis.

Tab. 1 - Sample's characteristics by welfare regimes

	Scand.	Cons.	Med.
Total experience	31,5	31,8	32,4
Total unemployment duration	0,1	0,3	0,8
Total jobs episodes	3,9	2,9	2,1
Status (%)			
<i>Employed</i>	94,3	92,2	92,2
<i>Unemployed</i>	0,7	1,9	0,7
<i>Retired</i>	2,1	1,6	4,1
<i>Inactive</i>	2,9	4,3	2,9
Education (%)			
<i>Less than 2nd stage</i>	36,3	34,6	66,7
<i>2nd stage</i>	36,0	36,9	19,9
<i>3rd level</i>	27,7	28,4	13,4
Job tenure (%)			
<i>&lt;=5</i>	22,8	12,2	6,7
<i>6-10</i>	14,9	10,1	7,0
<i>&gt;10</i>	62,3	77,7	86,3
Total individuals	1173	3613	2049

Data: SHARELIFE

atory variables on the probability of exit employment into unemployment, retirement and inactivity<sup>4</sup>. Here we focus our attention to the probability to become unemployed, as a *proxy* of employability intended as ability to maintain job thank to personal characteristics, predicted by model, considering particularly how education and job tenure shaped the risk at different ages. The dependent variable refers to individual status (employed, unemployed, retired or inactive), while explanatory variables refer to education in three categories (Isced 0-2, Isced 3-4 and Isced 5-6)

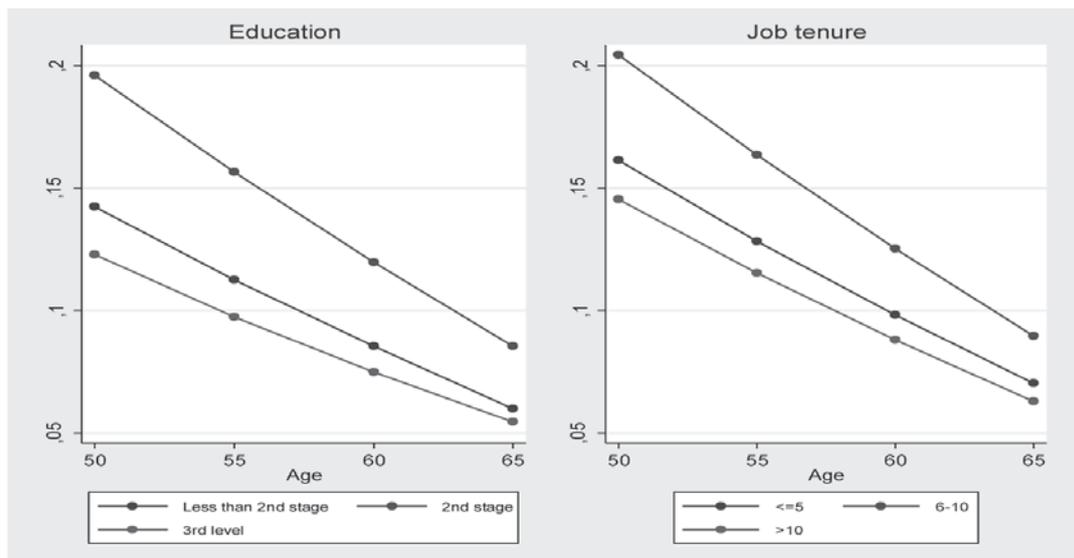
4. Competing risk model has the same form of a multinomial logistic model (MNL). One issue that comes up with MNL models in the context of competing risks models but not in the normal use of MNL models is obviously temporal dependence. As in the traditional discrete time duration models we need to take account of temporal dependence. In these models we did this by correcting the standard errors for the individuals' repeated observation and by controlling for age and cohort effects (Yamaguchi, 1991).

and job tenure in three categories (5 years or less, from 6 to 10 years and more than 10 years). Moreover, models are controlled for age effect (age and age squared), birth cohort effect (until 1929, from 1930 to 1939 and 1940 and after), total years of working experience, numbers of job transition, total unemployment duration in whole career and country. We present the results of these estimations as graphs of predicted probability using *margins* command in Stata to give a more clear explanation of what we found (Williams, 2012).

#### 4.1. Results

Figures 1, 2 and 3 show the predicted probability of unemployment by education (*formal human capital*) and job tenure (*informal human capital*) for the regimes analysed.

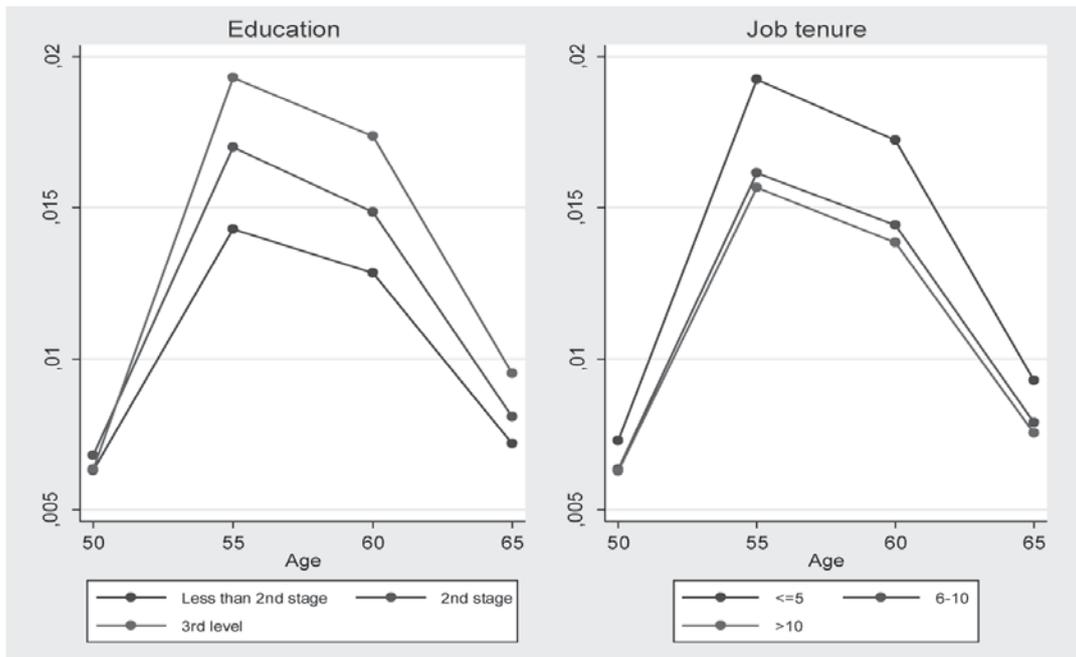
Fig. 1 - Predicted probability of unemployment by education and job tenure – Scandinavian regime



Source: Authors' calculation on SHARELIFE data

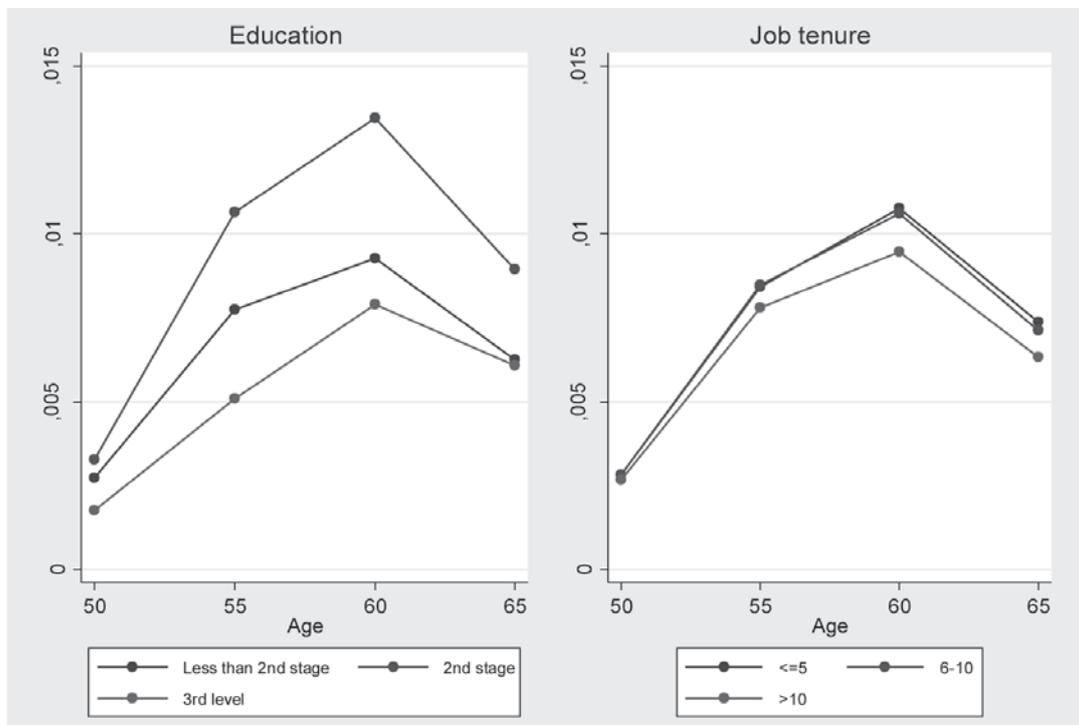
First, in all the countries here considered we found a low probability of transition from employment to unemployment, even if different career patterns, linked to workers' age have emerged for each welfare regime. While in the Scandinavian countries unemployment risk, the highest found among countries analysed here, decrease with age, in Conservative and Mediterranean countries there is a peak, respectively at 55 and 60 years, that gives a "bell shape" to the predicted probability of becoming

Fig. 2 - Predicted probability of unemployment by education and job tenure – Conservative regime



Source: Authors' calculation on SHARELIFE data

Fig. 3 - Predicted probability of unemployment by education and job tenure – Mediterranean regime



Source: Authors' calculation on SHARELIFE data

unemployed. These results probably find their explanation in the different architecture of policies targeted to older workers. During the last decades, the Nordic countries have always promoted the lengthening of the working career and, despite a higher level of job instability – thanks to policies aimed to increase older workers' employability – they have registered good levels of labour market attachment. On the other hand, Conservative and Mediterranean regimes by the end of the 70's saw the emergence of institutionalised alternative pathways of transition from work to retirement, implemented to counter the redundant and low employable older workforce. In many cases, these pathways included short periods of unemployment before the real retirement (Guillemard, Rein, 1993).

Looking at the two measures of human capital, we find once again some differences among groups of countries. With regard to the education of older workers (taking into account that there are different levels of unemployment probability) Scandinavian and Mediterranean countries show a higher penalization for middle-educated older workers, probably underling the already mentioned process of employment polarization that is growing in many Western labour markets. Conservative regimes instead register highest probability of job loss for the high-educated workers. This could be the result of a combined effect: *i*) of the push towards technological growth of production systems that penalizes those who have a high, but obsolete, endowment of knowledge; *ii*) of public policies aimed at protecting only less educated and less employable mature workforce for which the most likely transition is the permanent withdrawal from work.

Again, different is the picture regarding the experience acquired on the job. Long job tenure represent a protective factor against job loss in all the countries, confirming what other scholars (Maranto, Rodgers, 1984) found about the fundamental association between experience and productivity, despite the already mentioned obsolescence of competences typically referred to older workers. However, Scandinavian countries show highest predicted probability of leaving job due to unemployment for those with a medium job tenure: here we have to consider the different production system, with lower presence of small enterprise compared to Central and in particular southern Europe and then less importance given to firm's specific skills (Pagano, Schivardi, 2003).

## **5. Conclusions and further research**

The paper has focused on older workers' employability, by adopting a broad or contextualized perspective to the analysis of this concept. In fact, we have focused on one of the employability indicators, the human capital, by observing its influence on late career instability in differenti-

ated institutional contexts. Our aim were to test the strength of the influence of human capital variables on older workers' job instability and to analyse how this influence is "filtered" by differentiated institutional settings, typical at the welfare regime level. Summarizing our results, first, despite what some scholars have stated, unemployment at older age still represents a very unusual phenomenon: older workers of our sample, in all the countries, seem able to maintain their job in late career. With regard to the effect of education and job tenure, intended as proxy of formal and informal human capital, results of our models demonstrate that education represents a protective factor in Nordic and Mediterranean countries, allowing older workers to keep their jobs, while in Conservative countries the more educated workers are those at the highest risk of losing their jobs. Job tenure, and the related job experience, preserve older workers' job, particularly in those national contexts where small and medium size firms have a greater spread and thus where employability is driven also by informal way of training. The results confirm the importance of taking into account the influence of institutional contexts, with their differentiated combination of labour market policies, training policies and productive structures. The same factors, such as formal and informal indicators of human capital, produce different outcomes in different welfare regimes. Starting from these first exploratory results, next steps of the research should investigate the role of formal training on the job in sustaining older workers' employability and, if the levels of unemployment in old ages will increase for the next age cohorts, the ability of older workers to secure re-employment after a job loss.

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## **Third Part**

### **Knowledge, Skills, Abilities: Capacity Building and People Development**



# **Rethinking learning and people development in the 21<sup>st</sup> century: The Enhanced Reality Lab – e-REAL – as a cornerstone in between employability and self-empowerment**

*Fernando Salvetti\**

## **1. Glocal, liquid, networked, virtual and polycentric: The world in which we live and work**

Whatever the future, it will not be as we imagine it. The world of 2015 is different from the worlds of 1915, or even of 1967, and envisaging future scenarios is not so easy. The prospective visions become obsolete quicker than expected. We can't draw the precise line of our future and are expected to deal more and more with uncertainty. And such a circumstance could be either positive or negative, depending on our position in the world, as well as – from a geopolitical and cross-cultural perspective – which world happened to have us as inhabitants.

Our world today is “glocal”, liquid, networked, virtual and polycentric. The shift from traditional mass media to a system of horizontal communication networks organized around the Internet and wireless communication has introduced a multiplicity of communication patterns at the source of a fundamental cultural transformation, as virtuality becomes an essential dimension of our reality. And the virtual is neither the false nor the imaginary. The virtual is the power that something has of becoming something: for instance, a tree is virtually present in a seed as well as a scientific discovery could originate a number of patents, or a patent could create the conditions for a new discovery. The virtual and the actual are two ways of being different that can coexist: like in the case of the virtualization of a company based on information and communications tech-

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nologies that allow the staff of the company to be geographically separate and hence near to the service they provide (Lévy, 1994, 1995, 2011).

So, even if the word ‘virtual’ in the common language is often meant to signify the absence of existence, whereas ‘reality’ implies a material embodiment, we can say that in the today’s world a relevant change happened: virtual is something that may be easily actualized, it just has not undergone any kind of concretization. The virtual creates its own universe that is very different and separate from the real but can interfere with the actual reality, creating effects in the real world: a sample are the occupants of a simulated reality – or virtual world, like *Second life* – that can create identities different from the ones they have already established in the physical world. So virtual reality “reinvents a nomadic culture” by using a medium of social interaction and connectivity (Lévy, 2011). A person can shift from one social position to another in a fluid manner. Many times nomadism becomes a general trait of the liquid people as they flow through their own life like tourist, changing places, jobs, marriages, values and sometimes more – such as political or sexual orientation – excluding themselves from traditional networks of support.

The contemporary multiplication of spaces has made us nomads once again: we leap from network to network, from one system of proximity to the next forcing us to undergo a process of “heterogenesis”. Human interaction is no longer constituted by place and time as separate entities: they blend together mixing public and private all through the medium of communication devices. An example is when virtualization allows a person to merge the private space of his home to the public space of his workplace through telecommunication; this is an instance where virtual reality does not have clearly defined limits, as physical reality does (Lévy, 1994, 1995, 2011). Being nomadic doesn’t mean that we can become pure avatars, living a double existence: we are not totally independent of a referential space-time since we must still bond to some physical substrate and become actualized somewhere sooner or later. A person cannot exist in the pure “mixed reality”, or in the virtualized space forever – the person’s experience is still mediated and tied to a physical device. Anyway our networked world has becoming more and more polycentric, as a matrix marked by a relevant number of networks and interconnections where we can’t find an only and unique central hub. The shift to a decentralized network of communications makes senders receivers, producers consumers, and rulers ruled – upsetting the logic of understanding of the first media age. Virtualization does not simply accelerate already known processes or suspend, or even annihilate, time and space: it creates qualitatively new velocities and mutant space-time systems.

That is the “revolutionary potential” of virtual reality: to expose the presuppositions underlying the social formations of late capitalism and

to open new fields of play where the dynamics have not yet rigidified and new kinds of moves are possible. Virtualization calls into question the classical notion of identity, conceived in terms of definition, determination, exclusion or inclusion. For this reason virtualization is always heterogenesis – that has not to be confused with alienation, its intimate and menacing opposite. Virtuality enhances multiple identities as well as polycentrism, and a polycentric world could be a very interesting place where to live and work (Lévy, 2011; Hayles, 1999, 2012), even if hard to be understood.

Every part of our world is increasingly interdependent with many others. “Glocal” is a neologism that is becoming ever more relevant in our vocabulary. “Glocalization” is a multidimensional process. The global scene can be considered as a matrix of possibility, from which highly varied choices and combinations can be, and have been, produced: through the choice and combination of the global theme of cultural symbols, separate and distinct local identities are woven together. We are becoming fluid and many-sided (Fugate, 2004). It’s a universe in which is not easy for people finding an orientation. At the very end, we live in confusing times because the intellectual categories that we use to understand what happens around us have coined in different circumstances, and we can hardly grasp with what is new by referring to the past (Codeluppi, 2005; Salvetti and Bertagni, 2010a, 2010b, 2010c; Bertagni, La Rosa and Salvetti, 2010; Salvetti, 2014b; Hofstede, 2010; Bauman, 1998a, 1998b, 2000, 2005, 2011a, 2011b; Beck, 1986, 2004; Geertz, 1983, 1993, 1999; Guy, 2010; Schein, 2010; Uhrich, 2010; Bresciani and Eppler, 2010; Cantoni, Rapetti and Tadini, 2010).

Our liquid modernity, from an individual perspective is marked by increasing feelings of uncertainty. The increasing globalization also brings with it a rise in the differentiations, not just in the homologies. To increasingly global interconnections are associated some increasingly local and localized differentiations such as differences in the style of consumption, tastes, fashions and style codes, as well as in the models of behavior and social actions. The “glocal” world is characterized by the contradiction between economic and technological interdependency and political fragmentation, between social interconnection and cultural heterogeneity. “Glocalization” is the world’s new disorder.

We live in confusing times also because all experience is and remains “local”; that is, all physical experiences are proximal to our physical bodies. Despite the sophistication of technology – allowing us to communicate and experience people and places far from us and multi-task, we still engage this technology (thus, have the experience) in the time and place in which we are physically located. The localness of experience is a constant. However, we do not necessarily construct our concepts or understanding of events (local or distant) from a uniquely local perspec-

tive (Meyrowitz, 1985, 2004). Different media allow us to incorporate external perspectives with which to understand and relate to the local and the distant. Media have expanded our range of experience. We have social connections with people who are not proximal to ourselves. Likewise, while becoming more engaged with others distant to ourselves, we may become less engaged with the people in the places where we live. Additionally, media expand our concept of a generalized elsewhere. This generalized elsewhere allows us to construct a broader understanding of the world, where our immediate community is not the only lens that serves us the construction of this concept. Our locality is no longer necessarily the center of our constructed world or the sole source for our experiences in the world. Modern media help us to establish a much broader concept of the social arena – enhancing our connections to distant people and places and potentially weakening our local relationships, and establishing our locality as a mere “backdrop” for our experiences. Thus, we may live in a place without truly integrating into it. Further the pervasive nature of modern media (mobile phones and smartphones, tablets, wearable devices, etc.) makes it difficult to restrict our experiences to the local only. Effort is required to establish restricted boundaries around our experiences. Because of this, our definitions of a situation are varied and unstable, as our boundaries are permeable and ever changing. The same is for our identities. So at the very end we are very challenged by blurred outlines of our world (Girard, 1990; Salvetti and Bertagni, 1998).

## **2. Capital and commons, collaboration, competition and coopetition: ways of world-making**

As humans we create meaning by interacting with our natural and social environment, by networking our neural networks with the networks of our natural environmental and with social networks. This networking is operated by the act of communication. Communication is the process of sharing meaning through the exchange of information and by other reciprocally meaningful signals. For society at large, the key source of the social production of meaning is the process of socialized communication. Socialized communication exists in the public realm beyond interpersonal communication. Created in the commons of the Internet this communication can be locally based, but globally connected: it is built through messaging, social networks sites, and blogging, and is now being used by the millions around the world who have access to the Internet. The ongoing transformation of communication technology in the digital age extends the reach of communication media to all domains of social life in a network that is at the same time global and local, generic and custom-

ized in an ever-changing pattern. What characterizes the current system of communication, based in the digitalized, networked integration of multiple communication models, is its inclusiveness and comprehensiveness of all cultural expressions (Castells, 2008, 2010, 2013).

Our world is constructed around flows: flows of capital, information, technology, organizational interaction, images, sounds and symbols. Flows are not just one element of the social organization: they are the expression of processes dominating our economic, political and symbolic life. So the networked world is shaped – and dominated – by flows. In a nutshell: flows are purposeful, repetitive, programmable sequences of exchange and interaction between physically disjointed positions held by social actors in the economic, political and symbolic structures of society (Castells, 2008, 2010, 2013).

Within the networked world, power is multidimensional and is organized around networks programmed in each domain of human activity: networks of power exercise their power by influencing the human mind predominantly – but not solely – through multimedia networks of mass communication. Thus, communication networks are decisive sources of power-making. Networks of power in various domains of human activity are networked among themselves. Global financial networks and global multimedia networks are intimately linked, and this particular meta-network holds extraordinary power. But not all power, because this meta-network of finance and media is in itself dependent on other major networks, such as the political network, the cultural production network (which encompasses all kinds of cultural artefacts, not just communication products), the military and security network, the global criminal network and the decisive global network of production and application of science, technology and knowledge management. These networks do not merge. Instead, they engage in strategies of partnership and competition by forming ad hoc networks around specific projects. But they all share a common interest: to control the capacity of defining the rules and norms of society through a political system that primarily responds to their interests and values. This is why the network of power constructed around the state and the political system does play a fundamental role in the overall networking of power.

The financial crisis that has shaken all the countries that are part of the system usually called as “global capitalism” is not simply an economic crisis. It is a crisis of the values underlying the flows of capital creating virtual wealth out of speculative maneuvers enacted with the help of powerful computer networks and mathematical models. It is a crisis that results from the disregard of human well-being and natural conservation, counting on the bail out of many cynical lords of the space of financial flows by the powers of the state using the real wealth produced by their

subjects. Furthermore, the financial crisis is coupled with a crisis of crisis management, as the crisis of political legitimacy spreads around the world.

At the same time, millions of people are actively and peacefully engaged in finding new ways of sharing, living together, and searching for a meaningful life. The majority of citizens do not trust their governments, their parliaments, and their political parties, as well as the major economic players. A new economic paradigm seems to be rising in many regions of the world, where the market capitalism is shifting towards practices that could be named as “collaborative commons”. Those two economic systems often work in tandem and sometimes compete: even at this very early stage, what is becoming increasingly clear – accordingly with Rifkin (2014) – is that the capitalist system that provided both a compelling narrative of human nature and the overarching organizational framework for the day-to-day commercial, social and political life of society has peaked and begun its slow decline as a pretty unique reference paradigm.

In a market-exchange economy, profit is made at the margins. Within any process related to any value-chain, each party is marking up the transaction costs to include a profit margin large enough to justify their participation. But what if the marginal cost of producing plummeted to near zero? A trend exists: there are already millions of “prosumers”: consumers who have become their own producers. Within the next two to three decades, prosumers in vast continental and global network will be producing and sharing green energy as well as physical goods and services, and learning in online virtual classrooms at near zero marginal cost. At the same time many of the leading players in the near zero marginal cost revolution argue that while nearly free goods and services will become far more prevalent, they will also open up new possibilities for creating other goods and services at sufficient profit margins to maintain growth and even to allow the capitalistic system to flourish in a number of niche markets.

The collaborative commons paradigm seems to be ascendant and by 2050, it will likely settle in as the primary arbiter of economic life in most of the world. An increasingly streamlined and savvy capitalist system will continue to soldier on at the edges of the economy, primarily as an aggregator of network services and solutions (Rifkin, 2014, 2011, 2009).

During the latest two centuries, modern economic growth and the diffusion of knowledge have made it possible to avoid the “Marxist apocalypse” but have not modified so much the deep structures of capital and inequality. When the rate of return on capital exceeds the growth rates of output and income, as it did in the 19<sup>th</sup> century and seems quite likely to do again in the 21<sup>st</sup>, capitalism generates arbitrary and unsustainable inequalities that undermine the “meritocratic values” on which demo-

cratic societies are supposed to be based (Piketty, 2013). There is no natural, spontaneous process to prevent destabilizing, in egalitarian forces from prevailing permanently. The greatest democratization occurred in our Western world during the second half of the 20<sup>th</sup> century, however, without the mission having been redefined. If ensuring “equal opportunities” was the objective, it has been achieved in terms of mass education, but certainly not in terms of social advancement because inequalities have grown (Herzog, 2010).

### **3. Fostering employability and self-empowerment in the 21<sup>st</sup> century**

The 21<sup>st</sup> century world is really different from that for which the principal education systems were designed. It is not possible anymore to continue offering education in the traditional way. Pretty much in any country education failure begins as early as at the primary school: as an output, we live in a world where common people are often lacking primary knowledge and skills and where experts – despite their lengthy education – are insulated within their particular disciplines instead of thinking out-of-the-box (Cummins, 2012, Salvetti, 2014e). If the educational institutions – both at K-12 and higher levels – do not adjust their methods, they will run the risk of being marginalized by the new trends of knowledge’s production and sharing: from peer to peer production to experiential learning, from online cooperative learning to the home-schooling experience (Salvetti and Bertagni, 2010c).

As Nelson Mandela (2003) used to say, education could be the most powerful weapon we can use to change the world. To enlarge the number of people benefiting of “equal opportunities” related to social inclusion, what is really needed is the dissemination of knowledge as well as the investment in capacity building and training programs aimed at fostering people’s skills and development. Work and employment have been transformed. There is a wide range of variation of the transformation of labor in the new economy, depending on the level of development and the institutional environment. The occupational profile of the labor force has been enhanced in terms of required skills and educational level. Education and training have to adjust accordingly, at any level.

Technology is casting a spotlight on the innovation of massively open courses, of dynamic new study options that are available to everyone, regardless of background or location. Rapid and dramatic developments in technology, the internet and online learning have outpaced projections from just a few years ago. And while the concept of internet-enabled study is hardly a new phenomenon, Massive Open Online Courses (MOOCs) could be the spark that ignites significant changes in the way

the world teaches and learns. The evolution of MOOCs will not only have a profound effect on how we teach in the future, but who we teach. MOOCs and their technology could be used to “virtualize” education on a mass scale, delivering low-cost learning opportunities to developing countries that have skipped the “landline generation” – countries such as India and Kazakhstan, and Africa’s emerging economies where mobile phones are the primary form of communication (Agarwal, 2015).

It is much easier to connect thousands of people to the internet and provide them with subsidized tablets, than to build hundreds of bricks-and-mortar campuses. Flexible, mass stream and open-source learning are revolutionizing the landscape of education: for instance, in a near future a growing number of people will go to university having done the first year of content online; then they will have the campus experience for two years, before going on to get a job in industry where they will become continuous learners for the rest of their lives. Or we can easily imagine for the near future an area (not necessarily a nation, it could be smaller than a country or a cross-country region) of online home-based activities organized around small neighborhood learning clubs, all connected through high-bandwidth Internet software (Sawyer, 2006).

An idea still in the concept phase, expected to become a next trend, calls for the replacement of four consecutive college years in young adulthood with multiple residencies distributed over a lifetime. Nowadays four-year residential college with selective admissions is a privilege for the elite in the academic world, but their undergraduate programs effectively discriminate on the basis of age. Admissions officers typically prefer that the best and brightest be children. Yet leaving home at a young age to live on a campus full-time is not without serious financial, psychological and even physical risk. People make major investment decisions when they are choosing colleges, but with minimal information about quality and fit. Today’s arbitrarily segregated world of teenagers and young adults would become an ever-replenished intergenerational community of purposeful learners. This utopian ideal is admittedly quite a distance from the institutional arrangements we have inherited, which encourage the nation’s most privileged young people to enter and finish college by the ripe old age of 22. But the status quo is not sustainable. Unrelenting demand for better-educated workers, rapidly developing technological capacity to support learning digitally and the soaring costs of conventional campus life are driving many educational systems toward substantial change (Kirst and Stevens, 2014).

Also regarding vocational training, competency-based assessments to acquire what we can term “just-in-time skills”, acquired mainly via informal learning, will allow people to access education and training wherever and whenever they like. This modularization will disrupt

traditional attitudes towards current educational models. Furthermore, a modular and skills-based education will allow the industry – rather than traditional institutions – to play a greater role in driving standards, and thus funding education and training in the future. This is about responding to the need for individuals to have more diverse skills.

So, will universities and vocational training in more conservative institutions disappear? No, of course they won't. But we will increasingly see a share of the student population opting for a very different education experience. Technology, online platforms (LMSs, MOOCs, portals etc.) and industry will all play a unique role in this evolution, and while traditional institutions will face challenges in the future, it's likely that they will still form the bedrock of learning and influence how the world teaches and learns (Mourshed, 2015).

While the future of education will be more technologically driven, it must still be organic, interactive, and experiential so as to allow students to mature and be creative, too. An only sample: the flipped classroom. The traditional pattern of teaching has been to assign students to read textbooks and work on problem sets outside school, while listening to lectures and taking tests in class. In flip teaching, the students first study the topic by themselves, typically using video lessons prepared by the teacher or third parties. In class students apply the knowledge by solving problems and doing practical work. The teacher tutors the students when they become stuck, rather than imparting the initial lesson in person. Complementary techniques include differentiated instruction and project-based learning. Flipped classrooms free class time for hands-on work. Students learn by doing and asking questions. Students can also help each other, a process that benefits both the advanced and less advanced learners.

#### **4. Rethinking learning and people development: trends, knowledge, skills and abilities for the “glocal” world**

By the 20<sup>th</sup> century, all major industrialized countries offered formal education and training to the population. When the curricula took shape in the 19<sup>th</sup> and 20<sup>th</sup> centuries, scientists didn't know very much about how people learn. Even by the 1920s, when schools began to become the large bureaucratic institutions that we know today, there still was no sustained study of how people learn. As a result, the major parts of the educational institutions we have today were designed around commonsense assumptions that had never tested scientifically (Sawyer, 2006; Foucault, 1975). Today, in our “glocal” society, we know that almost all around the world the buzzwords are complex problem setting and solving, communication, creativity and innovation, flexibility, soft skills, contextual and

cross-cultural intelligence – at any level and as an output of any educational process (Bertagni, La Rosa and Salvetti, 2010). So, as citizens of the “glocal” world and at any socio-economic level, we are in need to communicate both verbally and in writing (at least in two different languages), to understand the basics of math and informatics at a simple operational level, to have a shared background of standards against which to measure what counts as a reliable source of information, and, more deeply, to share “an epistemic common currency” because we often have to decide what to do in the face of disagreement – finding a non violent way to master the conflict. At a better level, then, we should be able to commit ourselves to a particular attitude of “open inquiry”, being aware that commitment is distinct from absolute belief – in such a way we could reduce the impact of problems like intolerance and even terrorism (Popper, 1945; Lynch, 2012; Salvetti, 2013b).

While the 19<sup>th</sup> and the 20<sup>th</sup> centuries were, in education, mainly about standardization, the 21<sup>st</sup> century is about visualization, customization, cheapification, gamification and some other relevant trends summarized below (Sawyer, 2006; Bertagni, La Rosa and Salvetti, 2006; Morin, 2008; Salvetti and Bertagni, 2010a; Bertagni, La Rosa and Salvetti, 2010; Petriglieri and Wood, 2010; Boutall, 2010; Friedlander, 2011; EUISS, 2011; Beard and Wilson, 2013; Shell, 2013; Salvetti, 2013a; Jagannathan and Geronimo, 2013; Reynolds, 2014; Gartner, 2014; Kirst and Stevens, 2014; Scoble and Israel, 2014; Gardner and Dawis, 2014; Agarwal, 2015; Mourshed, 2015):

- a) Making knowledge visible as well as making more tangible the intangible: what really matters is helping people to learn by making visible the deep knowledge they need to learn – often with simple and intuitive apps based on sophisticated technologies.
- b) Mobile, informal, collaborative, lifelong: four qualifiers that are very worthy when it comes to fostering people development, self-empowerment and employability in the today’s “glocal” world.
- c) Learning how to learn matters more than the learned contents.
- d) A learner centered design, as well as learning in online communities.
- e) Maria Montessori. Still a landmark in education.
- f) Finland. The Ministry of Education has created a vision that stresses collaborative teaching and learning, networking and team work.
- g) Singapore’s Master Plan for IT in Education: it integrates computers into all aspects of education, with the goals of helping students to think flexibly, creatively and collaboratively.
- h) Motivation and cognitive engagement in learning environments.
- i) Neurobiology of learning: facilitating learning, retention, recall and effective use and application of the learned information by the insights gleaned from neurobiological and cognitive neuro-scientific experimentation.

- j) Learning scientists are not simply trying to help students memorize textbook facts better, because memorizing isolated facts and step-by-step procedures is not enough in today's knowledge society, that is in need of people enabled to deal with systems thinking and complex, real-world problems.
- k) Flipped classrooms, differentiated instruction, project-based learning.
- l) Just-in-time skills acquired mainly on the job and by informal learning, modular and skill based education.
- m) The boundary between formal schooling and continuing education will increasingly blur. The milestone of high school diploma could gradually decrease in importance, as the nature of learning in schools begins to look more and more like on-the-job apprenticeship and adult distance education.
- n) Today's standardized tests are deeply flawed, because they assess only the surface knowledge emphasized by "instructionism" and do not assess the deep knowledge required by the "glocal" world. For example, mathematics tests do not assess model-based reasoning; science tests do not assess whether preexisting misconceptions have indeed been left behind nor do they assess problem-solving or inquiry skills.
- o) The video-game industry is a leader in holding mainly young people's interests and getting them to acquire all sorts of arcane skills, at vastly lower cost than the educational system.
- p) Between now and 2018 we'll see the number of smartphones, tablets and other connected devices skyrocket.
- q) We are approaching the era of personal cloud, software-defined anything as well as the Internet of everything, smart machines, 3D printing.
- r) The wall separating school and life needs to be broken down: people may leave school for the real world sooner and that doesn't mean an end to learning. Lifelong learning matters and calls for multiple educational activities distributed over a lifetime.
- s) We are interconnected in a polycentric world, more than ever. Connecting global talents across time and space is a must.
- t) MOOCs: virtualization of education on a mass scale. It's too early to tell if and how massive online open courses will affect the landscape of education, but the sector has indeed been forever changed.
- u) App mindset. Apps are shortcuts designed for accomplishing specific tasks. They're ubiquitous, powerful, and strongly structured. The app mindset motivates youth to seek direct, quick, easy solutions—the kinds of answers an app would provide. People growing up in our time are not only immersed in apps: they've come to think of the world as an ensemble of apps.

v) Multiple intelligences. People have many different and discrete facets of cognition, so they have different cognitive strengths and contrasting cognitive styles. A radically different view of the mind and the intelligence, that yields a very different vision of education.

We need to educate and train people to have a general aptitude for identifying and dealing with problems, as well as meta-cognitive abilities allowing them to make connections between pieces of knowledge. There are several particularly effective strategies for doing this: “dialogic” thinking that allows the complexity of the world to remain as such (without dividing it into rigid self-referencing sections); “recursive” thinking aimed at understanding systemic dynamics and the circular process of reality; “holographic” thinking by which we can enrich parts of our knowledge with the whole, and the whole with parts of it. The holographic approach is itself linked to the recursive approach, which in turn is linked to the dialogic approach: therefore, a task that is a priority for educators and trainers is understanding the different dimensions of reality, encompassing them as a whole and facing the complexity that binds unity and multiplicity and vice versa – stimulating the development of “general intelligence” capable of addressing the complex and global (Lipman, 1991, 1993, 1995, 1998; Bruner, 1991; Dewey, 1910; Montedoro, 2003; La Rosa, 2002, 2010).

Knowledge is not the result of a passive transmission of information, but the product of personal and inter-personal exchange. Knowledge is constructed within the context of a person’s actions, so is “situated”: it develops in dialogic and interpersonal terms, through forms of collaboration and social negotiation. Significant knowledge – and know-how – is the result of the link between abstraction and concrete behaviors, in order to make the intangible more tangible. Knowledge and action can be considered as one: facts, information, descriptions, skills, know-how and competence – acquired through experience, education and training. Knowledge is a multifaceted asset: implicit, explicit, informal, systematic, practical, theoretical, theory-laden, partial, situated, scientific, based on experience and experiments, personal, shared, repeatable, adaptable, compliant with socio-professional and epistemic principles, observable, metaphorical, linguistically mediated. Knowledge is a fluid notion and a dynamic process, involving complex cognitive and emotional elements for both its acquisition and use: perception, communication, association and reasoning. In the end, knowledge derives from minds at work. Knowledge is socially constructed, so learning is a process of social action and engagement involving ways of thinking, doing and communicating (Salvetti and Bertagni, 2013; Pépin 1998; Polanyi, 1966 and 1974; Putnam, 1975; Von Glasersfeld, 1987; Sosa, 2009; Feyerabend, 2010; Watkins, 1984; Pinker, 1997; Foucault, 1966 and 1969; Albert, 1968 and

1978; Popper, 1934 and 1972; Hayek, 1982; Bachelard, 1927; Morin, 2008; Nozick, 1981).

Which are the key-competencies and capacities to be honed in order to foster people employability? – Language literacy (at least bilingual, better multilingual), interpersonal communication skills, information technology and math literacy. And much more besides: Systems thinking, ability to deal with uncertainty and multiple information sources, proactivity, multi-tasking orientation, emotional and social intelligence. Last but not least, the ability to deal with diversity, cross-cultural sensitivity and openness – or some tolerance with the several forms of diversity we’re challenged to deal with in our “glocal”, liquid, polycentric and networked world.

How to empower people and their key-competencies and capacities? How to communicate and deal successfully with them? How to improve the employment prospects of people? Mainly due to the current economic stagnation in many countries, as well as to the high youth unemployment worldwide, we are facing a growing sense that traditional education and training models no longer create a pathway for the majority to reach their hopes and aspirations. Quality is often poor; the outcomes are uncertain and scarcely measurable. What education and training offer is often disconnected from the needs of the “real world”.

## **5. A cornerstone in between employability and self-empowerment: e-REAL**

When it comes to rethinking learning and people development for the 21<sup>st</sup> century, taking seriously both employability and self-empowerment, e-REAL is at the forefront by design. It stands for enhanced reality lab and is a place to experience challenging situations in a small group setting, engaging all participants simultaneously on different levels: with peers, thematic experts, and learning facilitators, both on-site, and remotely. e-REAL is a lab based on visual thinking and knowledge visualization, facilitated by enhanced – or augmented – reality tools. It is a highly interactive and face-to-face lab that promotes proactive data and information research: everything is available, but learners have to actively look for it. It allows also knowledge sharing with remote teams, as well as interactive and cooperative e-learning (Salvetti and Bertagni 2014a and 2014b; Salvetti, 2014c, 2014d, 2013a).

Integrating training on soft skills with those that are technical and specialized is a major aim of the lab. By utilizing e-REAL, a myriad of skills are fostered: both behavioral and cognitive, as well as metacognitive skills. Finally, technical skills are also honed, because it is mainly by fostering technical and job-related skills that soft-skills are developed as

well. Innovations based on visual thinking and immersive learning, such as e-REAL, as well as some other augmented reality tools, advances in tablet technology and mobile applications, wearable devices, multimedia libraries, are successful in order to upgrading people knowledge, skills and abilities.

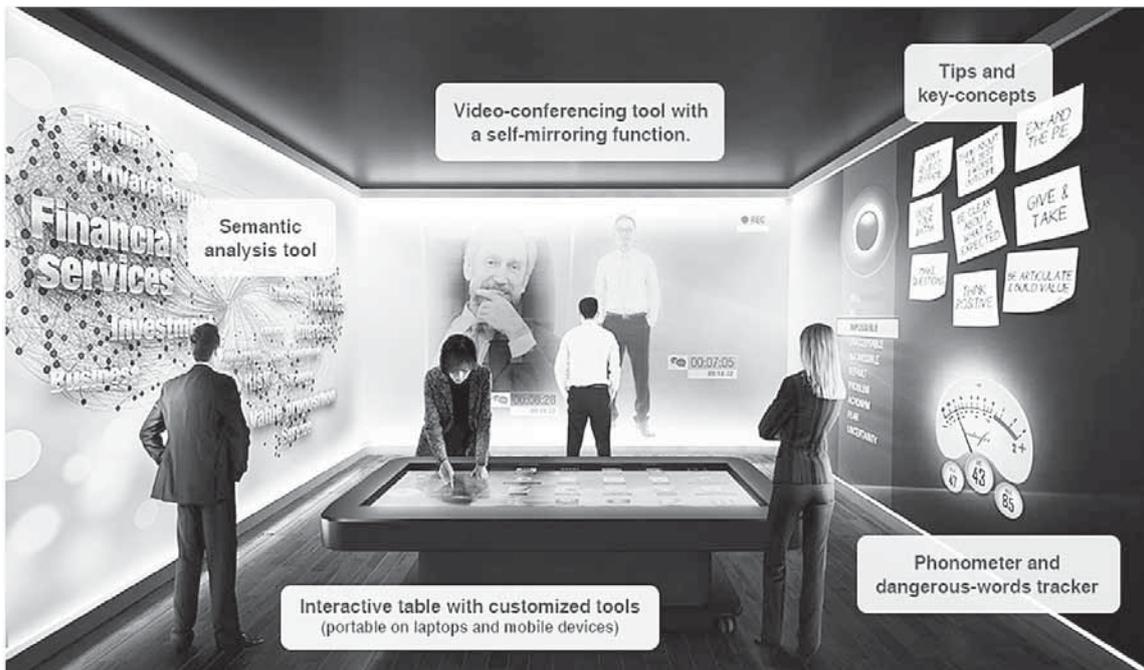
Visual thinking, digital technologies, and knowledge visualization are transforming the way in which people learn, by opening up new opportunities for immersive training, as well as serious gaming. Similar to being immersed within a videogame, people are challenged by facing real cases within complex scenarios that present a “more than real” wealth of information – this occurs while the many levels of the situation are made available simultaneously. “It is possible to teach every branch of human knowledge with the motion picture.,” observed Thomas Edison in 1913 – predicting that books would soon be obsolete in the classroom. In fact, motion pictures have had little effect on education and training. The same, until recently, was true of computers. Today, in most of the world, learners use computers to do research and type essays at every stage from primary to post-graduate education, or vocational training. But the core of the system has changed little since the Middle Ages. A “sage on a stage” teacher still spouts “lessons” to rows of students.

Now, we live within a networked society, and, at last, a revolution is under way due to a number of big changes that are emerging at the same time: high-speed mobile networks, cheap tablet devices, the ability to process huge amounts of data cheaply, sophisticated online gaming, and adaptive-learning software, “stellar” contents available for free, and “superstar” lecturers and experts are remotely available. At its heart is the idea of moving from a “one-size-fits-all” education, to a more personalized approach, with technology allowing true human-centric processes to enhance learning by utilizing augmented reality tools. The job of the classroom’s teachers and trainers, at every education and training stage, will move from orator to coach and learning facilitator, with adaptive computer programs and augmented reality tools allowing each learner to be actively engaged at his or her own pace.

e-REAL is the place where it is possible to teach every branch of human knowledge with motion pictures, as well as with 3D images, movies and augmented reality tools. Visual thinking, digital technologies, and knowledge visualization are transforming the way in which people learn by opening up new opportunities for immersive training. Much like being immersed within a videogame, people are challenged by facing real cases within complex scenarios that present a “more than real” wealth of information. This is because the many levels of the situation are made available simultaneously. e-REAL submerges learners in an immersive reality where the challenge to be tackled is created by sophisticated, inter-

active computer animation in three dimensions, and holographic projections. It further includes live and real time interaction with peers, trainers, tutors, facilitators and mentors. And thus, this adds a very important social component that enhances learning outputs, as well as metacognitive processes and skills.

The primary concepts and issues of a particular case can be dealt with by visualizing them with the use of holograms (to be seen without 3D glasses or any particular tool), on big screens, or by projecting them directly on walls, ceilings and floors. By moving the body, or with a flick of the hands, people can experiment with dynamic images, sound and vision, including holograms and 3D visualizations; all creating a profound emotional impact. So, it's quite a "futuristic" educational environment. In the image below, a representative classroom is shown, highlighted with some commentary to provide a deeper understanding in regards to some of the tools available in the immersive room.



Such a learning environment is characterized by the primacy of perception and positive emotions, as well as on visual thinking, in counter position to a well-founded tradition based not only on an epistemology and a vision of science that is rather naïve (positivism, as "neo" or not as it may be), but also as a much criticized "metaphysical" thesis relating to human beings: dualism and the mind-body separation. The body – "physical substance" – with its chemical, pneumatic, mechanical and electrical mechanisms; the mind with its thoughts, sentiments, memories and

images; made up of a totally separate “mental substance.” Even if the Cartesian body-mind dualism historically lost its attraction very early on, the notion that mental life is “internal,” separate from behavior, which is “external,” survived much longer and can still be found today in many psychological, pedagogical, and andragogical approaches. With consequences – often experienced by those who attend schoolrooms, universities, professional and corporate training centers and business schools – of uniting and managing impoverished, simplified models and conceptual human action that cannot be used in the dense and polysemic dynamics of our daily lives.

We should consider both educational environments, as well as the human mind, to be complex systems. What we need are new ways of thinking, which are able to process peculiarities, individualities, oddities, discontinuities, contrasts, and singularities. Ways of thinking that are able to understand the variety, and plurality of belonging; and ways of being part of the many local worlds in which we live, study and work. We need to learn how to learn a potentially relativist (but not destructive or nihilistic), relational and self-aware way of thinking that knows its requirements, and that is left unsaid. A thinking that is able to consider the cognitive restraints that make it up and that sometimes command and control it blindly and fideistically; a thinking that is aware that knowledge is a *mélange* of rationality and rationalization, of true and false intuition, inductions, syllogisms and paralogisms, ways of saying and doing things, personal opinions and shared beliefs.

With powerful tools and enhanced reality resources within the e-REAL labs, people improve their abilities and skills. e-REAL also enables effective cooperative learning – based on teamwork and knowledge sharing on a peer-to-peer basis, visualizing knowledge and know-how in order to simplify the complexity of the real world – making the “intangible” more tangible. Learning also happens with the “extended mind.” Our mind is the result of an exchange process with other people and the external environment. The separation between the mind, the body and the environment is an unprincipled distinction. Since external objects play a significant role in aiding cognitive processes, the mind and the environment act as a “coupled system.” This coupled system can be seen as a complete cognitive system of its own. In this manner, the mind is extended into the external world (Gardner, 1993 and 2010; Morin, 1986 and 1990; Senge, 2006; Miller and Page, 2007; Friedlander, 2011; Page, 2011). The application of computational and quantitative behavioral approaches combined with functional brain imaging has revealed strategies employed by human brains to acquire, store and retrieve information in a variety of tasks and settings. e-REAL is a place where the application of this knowledge to the pedagogy of education and training is happening most effectively in

regards to guiding learners to assimilate, comprehend, retain, access, and apply foundations, principles, reasoning skills and necessary facts.

So e-REAL is a cornerstone between employability and self-empowerment – being the ideal place to deliver education and training, capacity building and lifelong learning.

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# Dealing with complexity in a simple way: How visualization boosts understanding in learning process. The Z Generation case

*Barbara Bertagni\*, Sophie Salvetti\*\**

## **1. We need to learn all life-long to cope with change and complexity in a simple way**

In today's world, the ability to assimilate and apply knowledge effectively is the key competence relevant for employability as well as for a good quality of life. Our world is becoming increasingly complex: both students and working people need to be able to deal with information and communication technologies, to speak different languages, to deal with different cultures, to be able to learn and improve their knowledge and know-how continuously (Bertagni, La Rosa and Salvetti, 2010). In a nutshell: in the knowledge era, people need to be able to learn quickly. They have to be adaptable to change and open to learn. Let's focus on three cases.

Akilah is a taxi driver in Dubai: for her job she needs a driver's license, but this is not enough. She needs some knowledge in order to "handle" multicultural and multilingual clients and she has to deal daily with a city that is incessantly changing, challenging her ability to find promptly the right information about streets' names and addresses. So she is supposed to deal with change and learning all work-life long. She has to be proactive to run her job in the best way possible, searching info and improving

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The article is mainly the result of the work of Barbara Bertagni, who has shared the main hypotheses with Sophie Salvetti that was involved with testing educational solutions for young learners – both multimedia and on paper – such as apps, tutorials, e-REAL augmented reality multimedia tools. Paragraph 4 was written by both the authors.

competencies with limited financial resources and with a little amount of time to invest on it.

John is a brilliant young executive working in London and his company asks him to move to China with a higher job-position. He is very happy about this promotion, but he has some concerns about how he could manage his team in such a different culture: he doesn't know the language nor the culture, and also the business which will be very different from what he is used to. Even if he is currently exposed to a number of cultures, he is fluent only in a second language spoken mainly in Europe.

Sophie is a smart girl, she is 12 years old and grew up having been immersed within information and communication technology: highly connected, she is an intensive user of social media and her lifestyle is technologically driven. When she was 10 years old, she opened her own blog on the Internet and started making short movies and tutorials by herself. She is used to chat on Skype with friends from different countries, she loves studying by using multimedia applications and tutorials, she knows many social media. She is a digital native and is part of the so called Z Generation. Her family is aimed at offering her a very good education, but what is a good education for the Z Generation kids?

All these three people are talented with a potential, but they need to find a successful way to improve it. They are in need of educational programs designed to enable people, at any stage of their life, to take part in stimulating and affordable learning experiences enabling them to cope with change and complexity in a simple and effective way. As educators, we have to rethink tools, methodologies and timing in education in order to really help people improving their competencies all life-long.

## **2. Enhancing learning by visualization and edugraphics**

Do you ever feel completely overwhelmed when you're faced with a complex problem while you are learning? I think that, in learning, complex doesn't always equal complicated. Learning implies coping with complexity, but a good educational methodology allows learners to learn in a simple way. Simplify learning doesn't mean impoverish concepts and reasoning, but, on the contrary, making graspable complexity.

Good visualization is the key to help untangle complexity: the visualization of information enables us to gain insight and understanding quickly and efficiently (Alexander, Bresciani and Eppler, 2014 and 2013; Eppler; Salvetti and Bertagni, 2014a and 2014b; Salvetti, 2013; Eppler, Forbes, Ösk, Bresciani, 2013; Bergström, 2012; Amicucci, Cipriani and Ravazzani, 2012; Bresciani and Eppler, 2010; Bertagni, La Rosa and Salvetti, 2010; Gardner, 2010; Mc Candless, 2009; Roam, 2008; Bertagni,

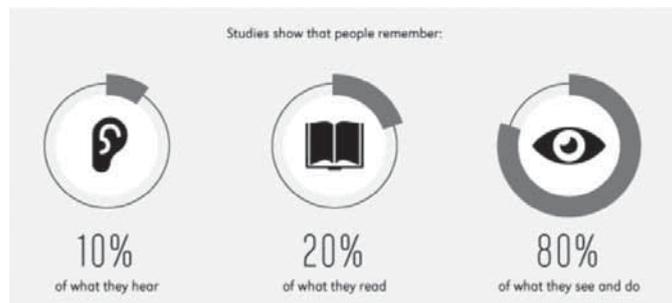
La Rosa and Salvetti, 2006; Eppler and Burkhard, 2004; Appiano, 1993; Munari, 1993; Wunenburger, 1997; Debray, 1992; Spiro, 1990; Arnheim, 1969 and 1974; Merleau-Ponty 1964). Examples of such visual formats are sketches, diagrams, images, objects, interactive visualizations, information visualization applications, and imaginary visualizations as in stories.

As humans, we have a very well developed sense of sight: half of our brain is devoted directly or indirectly to vision. Images are able to grab our attention easily. We process images very quickly: researchers suggest that people process visuals 60,000 times faster than text. This is the reason why we are confronted with an immense amount of images and visual representations every day: digital screens, advertisement, messages, information-charts, maps, signs, video, progress bars, diagrams, illustrations, etc. (Kahneman, 2011; Friedlander, Andrews, Armstrong, Aschenbrenner, Kass, Odgen, Schwartzstein, and Viggiano, 2011; Damasio, 2010; Gross, 2010; Pinker, 1997; Changeux-Chevaillon, 1996).

If we have to warn people, symbols and images are excellent: they communicate faster than words and can be understood by audiences of different age, cultures and language.



Images are powerful: we know that people tend to remember about 10% of what they hear, about 20% of what they read, about 80% of what they see and do.



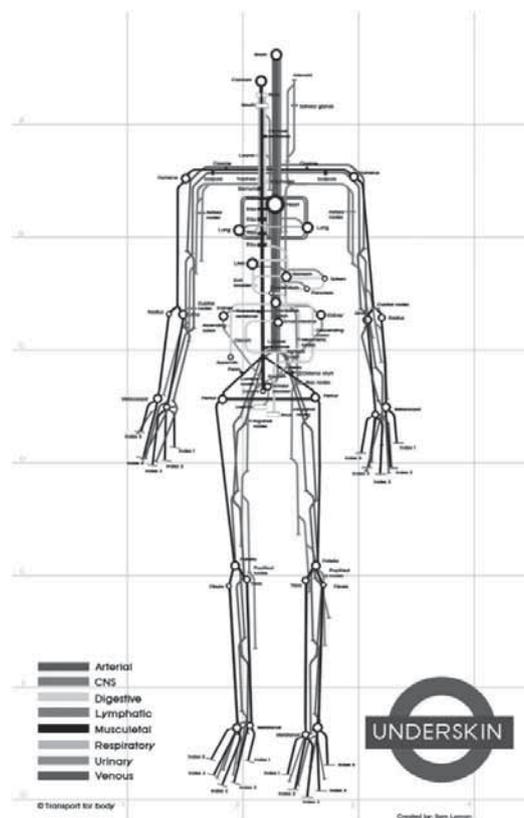
So, in education images are often used like illustration, to give a better understanding of a text and to promote memorization.

But we want to promote a different way to design visualization for education and training, much more powerful than a simply illustration: we need a visualization that allows learners to have a first understanding, that stimulates curiosity, shows relations between topics, activates involvement, generates questions they didn't think of before and that facilitates memory retention.

The challenge we are facing in learning is about being able to create visualizations that act like concept maps and help organize and represent knowledge on a subject in an effective way: like infographics help us understanding information in dynamics ways, edugraphics helps learners enhance learning.

Edugraphics are the infographics that we use in training and education: not simply illustrations, but an innovative way to present a subject with a larger graphic design that combines data visualizations, illustrations, text, and images together into a format that tells a complete story.

Let's take a look at the following image:

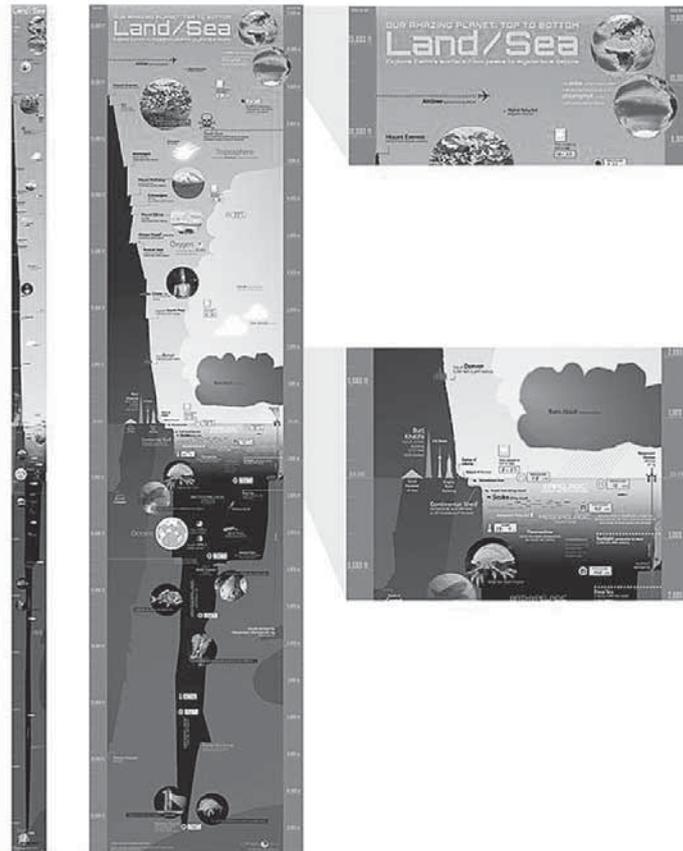


“Underskin” traces the routes of eight different systems within the body (Digestive, Respiratory, Arterial, etc.) and highlights the major connection points. Sam Loman has taken the subway map graphic style to the human

body: this infographic is simple, is nice, allow analogical thinking, and is a way of displaying complex information in an easily digestible way.

A good infographic must be unique and impactful, or it won't be memorable to the audience. There are different forms of infographics: static, zooming, clickable, animated, video, interactive. The more they are interactive and dynamic, the more powerful and effective they are.

Let's take as another example "Land/Sea" of Karl Tate. This infographic show us our world from the tallest mountain to the deepest ocean trench in a unique snapshot.



To create this infographic, the designer has chosen some very well-known monuments and places, putting them in relation in a unique snapshot – allowing observers recognizing familiar elements in a new situation, which is essential in the learning process. Looking at the image we have immediately a first level of understanding, but the success of the graphic is that it stimulates our investigation: a lot of questions come out from the visual exploration of the image.

Which are the characteristics of a good edugraphic?

- It is a graphic visual representation of information, data or knowledge that makes complex topics easy to be understood – showing us the trends and implications that underlie data.

- It combines data visualizations, illustrations, text, and images together in an interesting, eye-catching and engaging way increasing learners' attention, understanding and memorization of the topics. Because visuals can grab a person's attention, pique their interest, and improve recall, but without text to fully explain the message of the visual, that visual is left up to individual interpretation.
- It must support a personal exploration from different perspectives: a unique snapshot with a possibility to embrace all the complexity of the topic zooming out for a global vision and immediately zooming in on a simple detail.
- It works like a storytelling, telling complete stories and putting information in a context showing relations and comparisons, to make the topics easily understandable and to promote critical thinking.

It works like a concept map extracting the patterns that underlie data and information helping us to think in terms of the bigger picture, of the patterns that reside within the information.

The best edugraphics are interactive: they could be presented by the trainer or the teacher and then learners could discuss in small groups and study in depth the topic on the web and on the books.



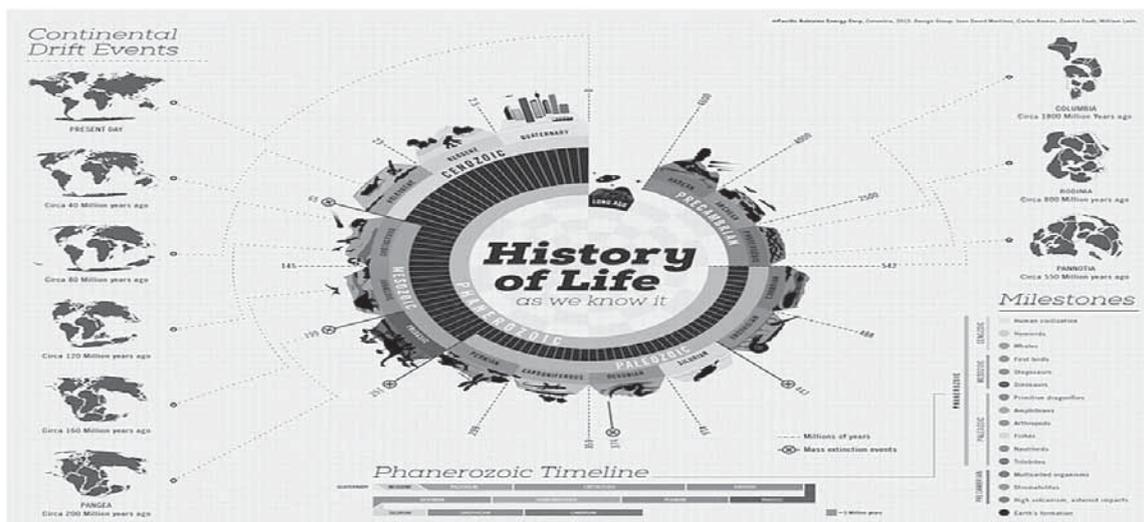
A very innovative and effective way to enhance the training with the visuals is the e-REAL lab: an immersive educational environment, as shown below, where learners can explore the images touching them

– with a complete involvement of mind and body. Knowledge in the e-REAL lab is visualized: conceptual maps and interactive edugraphics of the main concepts, visual case-studies, realistic scenarios, movie’s clips, interactive mosaic areas full load of visual contents to explore, visual instructions and video monitoring and mirroring of facial expressions and body language. All is visualized in order to immerse learners in an augmented reality setting, to foster comprehension, awareness and learning.

In all these cases the edugraphics are prepared in advance. But is also very engaging having someone facilitating the learning process by a graphic facilitation: translating complex ideas into words and pictures in real time during meetings and lessons.

Another interesting use of visualization is by asking learners to become active and visualize from themselves the topics: this offers them an excellent opportunity to gain a profound understanding of concepts.

Take a look of the edugraphic below “The rise of Life”:



In this edugraphic, you can find a lot of contents in a spot. A teacher could present this image during a lesson stimulating students to explore the graphic and to find out questions, ideas, concepts, relations. Students take time to exchange ideas, to modify the representation enriching it with some other information, or simplifying the drawing or changing the images.

Dealing with graphic is a way to structure and restructure knowledge multilaterally. We know that our brain doesn’t think linearly or sequentially. All the ideas on the concept map are linked to each other: this helps our brain, through association, to make great leaps of understanding and imagination.

### 3. Visualization and technology in Generation Z education

Generation Z is a label used for the cohort of people born after the Millennial Generation. There is no agreement on the name or exact range of birth dates. Some sources start it at the mid or late 1990s or the more widely used period from the mid 2000s to the present days. Also known as the Internet Generation or the Digital Natives – some alternate names are including iGeneration, Gen Tech, Gen Wii, Net Gen, Digital Natives, Gen Next, Post Gen and Plurals – the Z label describes the most tech-savvy generation yet (Howe and Strauss, 2000; Mc Kuhan and Powers, 1999; Dziuban, Moskal and Hartman, 2004; Koulopoulos and Keldsen, 2014)

They grew up in the digital world and are used to be always connected: they learn and search info on line and they live a big part of their social lives via texting and social media. For them technology has blurred the lines of study and entertainment, of private and public. They live mainly in the augmented reality world: using technologies to collect information about the situation they are facing. Always just a few clicks away from any information, they connect in a borderless world, across countries and cultures, and they communicate in a post-literate community where texts and tweets are brief, and where visuals and videos get the most cut-through. They are supposed to be active searchers: in general, they prefer media that they can interact with as opposed to passive TV or print texts. Their brains are wired for the fast delivery of content, data and images. They expect to be able to work, learn, and study wherever and whenever in a flexible way, enjoying contents simply and quickly. They surf the net zapping incessantly from content to content in a rapid and emotional way looking for interesting, curious, dynamic info. They gain knowledge piece by piece, like in a puzzle, putting together contents from very different sources. They are explorers.

Generation Z is a truly “glocal” and networked one. Wherever they are in the world Zeds are logged-on and linked-up. Their technology knows no boundaries and nor do their blogs, chat rooms, friendships and vocabulary. Through technology the music, movies, fashions, foods, online entertainment, social trends and even the must watch YouTube videos are global as never before. One of the most striking characteristics of Generation Z is their ability to multitask: they can simultaneously talk, listen to music, text, browse the Internet and study. Their constant multitasking has saddled them with a pretty short attention span. On average they will live longer, stay in education later, and work across more careers than any prior generation.

What does all this mean for the way they learn and engage with education? They demand something different than traditional lecture-and-test classrooms. Surveys suggest that Generation Z is highly self-directed:

they study in an entrepreneurial way, liking to design and to shape their own programs of study. They want technology to be a bigger part of their education. Approximately 43% of teens are supposed to prefer a digital approach to learning and find it easiest to learn from the internet (Bertagni, 2014). Technologies can help make learning happen offering the possibility to learn everywhere, promoting collaborative learning. Online schooling mixed to activities in classroom is an effective way to give Zeds what they want out of their education: technology, flexibility, and self-paced learning. They are supposed to be the most home-schooled generation in the world's modern and contemporary history. Sometimes they are hard to teach, as they get easily bored: time is a critical aspect in Generation Z education. They need their educators to move from a teacher-centred curriculum to a learner centred one. They would rather manage with autonomy and flexible study time at school and at home, alternating different approaches and methodologies. Accordingly with the first applied research's outputs, project-based learning in flipped classrooms is supposed to be one of the best solution (Bergman and Sams, 2012 and 2014; Bretzmann, 2014). Knowledge could be mainly "explored" and understood at home: learning from contents online, watching videos and tutorials, surfing the web. Then exercitations are done in classroom by team working and group talks facilitated by a teacher. They are commonly fine with visual learning: accordingly with some research outputs, we can say that the brains of Generation Z kids are structurally different than those of their predecessors; lots of web browsing and information overloading developed much more the area of the brain related to visual ability, making visual forms of learning more effective and enjoyable (Bertagni, 2014).

At approx. 5.1 billion searches per day, Google is the number one search engine, but with approx. 4 billion YouTube searches a day, YouTube is a close number two. A lot of young people prefer watching a video rather than reading an article. In an era of information overload, messages have increasingly become image-based and signs, graphics, pictures communicate across the language barriers rather than words and phrases. So we can say that the analysis of learning styles is showing the dominance in the visual.

Also video-games have actually shaped the way those people are used to approach learning. When gaming, kids have to overcome one problem in order to move onto another. They receive instant feedback on their progress, have clear goals, and are rewarded for their success. This is what they look for in their education: they expect instant results and gratification, and constant feedback. Zeds have access to a big amount of data in a while, more information than at any other time in history, but they often don't know how to judge the reliability of information, they lack the crit-

ical-thinking skills to evaluate sources. Educators have to focalize on critical thinking and problem solving rather than memorization.

#### **4. “L’école de Sophie”: The educational tools seen from a Z Generation girl’s perspective**

Let’s go back to Sophie that is both a living example being part of the Z Generation and, as a young student engaged sometimes with testing educational apps and tools, and is also part of the team who wrote the paragraph that you are reading right now – based on her exposition, as junior tester, to a number of educational tools. So, even if we are referring to Sophie writing “she” – avoiding an “I” centric approach – the present paragraph is by the two of us.

Who is Sophie from a socio-educational point of view? She is 12 years old, hungry for knowledge, highly connected, net surfer and intensive user of social media. She spends a lot of time, daily, chatting on Messenger and Skype with friends from different countries and in different languages, while is not so used to writing emails because she thinks that e-mails are a slow (and too old) way to communicate. She is bilingual and speaks fluently three other languages. With her family she is used to commuting between Italy, France and Switzerland, and travels quite often to places that are in three different continents. She had the chance to attend different school systems, having been exposed to several cultural and geographical influences.

Now she is home-schooled, used to be taught both face-to-face (within different learning setting: at home, museums, educational or cultural institutions, stadiums, teachers’ premises) and remotely – mainly by Skype or using other platforms, from the e-REAL labs, enabling both synchronous and asynchronous interaction. She writes and uploads multimedia files on her own blog. She loves to study by using multimedia applications and tutorials, as well as experiencing something worthy by doing directly an activity (i.e. fines arts, chemistry, physics): such an activity can be done in the real world or within a virtual setting, depending on several circumstances.

On a yearly basis, she attends quite a high number of practical and cooperative workshops: journalism for K-12, creative writing, basics from sciences, fine arts, cooking, classical ballet, flamenco etc. – usually an effective way to exercise and practice among peers, sometimes with the concrete possibility to have some knowledge and know-how built together. On the contrary, she tries to avoid “traditional” lessons – those that are mainly delivered by “a sage” on the stage, with a predominant “one-way” communicative style: usually she finds traditional school lessons very boring.

In order to learn languages, she is very fine with multimedia mobile learning programs like – for French – *Les dictées Bescherelle* or the *Conjugaison Becherelle* as well as – for many languages – *Babbel*, that are apps allowing self-paced mobile learning: she can study anytime and anywhere, and she can directly choose the level and the topics of the lesson. The system makes goal setting easy and understanding the real achievements by the same learner; then because the learner can start speaking right from the first lesson, the integrated speech recognition helps improve pronunciation.

After having experienced *Babbel* for modern German, she is complaining because she is not able to find an equivalent tool in order to study Latin and ancient Greek the same way. Regarding those two classical languages, she is also complaining against the way she is expected to deal with dictionaries that, accordingly to her teachers, have to be the traditional paper-dictionaries and not multimedia tools: opinions are different, also among her teachers, but the majority of them are used to saying that the paper is better than electronic. And she can't accept it because electronic resources are not only making easier the tasks related to finding the right words and the most appropriate meanings, but are easily movable from one place to another. In her opinion, also phonation and pronunciation exercises about Latin and ancient Greek could be better delivered using multimedia tools instead of the pure repetition during a pretty traditional lesson. For now she only found a couple of tools from an Open University allowing her to listen and to repeat in an effective way. So she is still looking for multimedia apps in order to live a more engaging learning experience. At least she would be fine with finding something like *Chineasy* (Chinese Mandarin) a tool based on visual thinking that she is very fine with. In a nutshell: Chinese made quite easy by recognizing characters through simple visualizations.



Nevertheless she is also used to dealing with the real “old” world, handling very traditional tools such as brushes and pencils, pens and paper. Sometimes with relevant results: a few months ago she was awarded by the American Library in Paris as a winner of the French Young Authors Fiction Festival (Salvetti, 2014). Young is a relevant adjective, because of her age and activities, but is not exclusive. Last year she attended an educational cruise in the Mediterranean Sea organized by the Stanford Club of Europe and was used to attend, jointly with adults and

other young people lessons and workshops delivered by three faculty from Stanford University; in such a case she had to network with people from any age: 14 till 70.

She is truly a Z Gen. Even if young, she has been exposed to a number of educational approaches and tools, as well as different teaching styles. Sophie, as many Zeds, shows quite a sophisticated and eclectic cognitive profile. That is the main reason because at LKN we're used to have her engaged as a junior tester for educational solutions – mainly those designed for the e-REAL labs. From a Z Gen perspective, in her opinion the most effective educational approaches are those based on visualization by augmented reality tools. For instance, the books allowing a 3D augmented reality app, to bring to life interactive digital content (the solar system, the Milky Way, the atom's structure, historical characters, etc.). Other sample: the systems based on a high definition stereoscopic display rendering full resolution images (virtually any learning object: human body, building, animals, etc.) that, by tracking eyes and head movements, are creating a smooth parallax experience – that is pretty much immersive.



The top ranked approaches are those based on visualization associated with augmented reality tools: discovering, for instance dealing with atoms, that beyond any surface there are “many things” that we can’t see using only our eyes. And that makes the learning setting quite close to a treasure hunt. But it’s not a pure game. Pure gamification doesn’t appear so appealing as sometimes it is supposed to be: an educational tool has first of all to show contents strongly and directly related to educational aims.

A usable and effective educational tool combines data visualizations, illustrations, text, and images together in an interesting, eye-catching and engaging way. Something like a 360 degrees approach, supporting the exploration of a learning object from different perspectives, is usually highly appreciated. Edugraphics and visualization are becoming a must in education and training. Visual thinking, digital technologies and knowledge visualization are transforming the way in which people learn by opening up new opportunities.

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# Education for Life and the InnovationGym

*Alfonso Molina\**

## 1. Introduction

Today's world presents unprecedented challenges to humanity – to the young, the adult and the old. Rapid advances in science and technology are having a major impact on ways of working, organizing, financing, learning, innovating and, in general, living. The Internet has given rise to an entire new economy and this is manifested in new professions, markets, industries, forms of government and so on. Simultaneously, we are confronted with a series of societal challenges such as the greying of the population, the environment, the realization of 21<sup>st</sup> century education and, certainly, the need to respond to the effects of the deep economic crisis of recent years with its dramatic impact on jobs and the quality of life in general. Not surprisingly, new terms such as apps, co-working, crowd-sourcing, crowd-funding, open innovation, rapid prototyping, etc., coexist with others such as massive youth unemployment, precarious work, increasing poverty, NEET, active ageing, etc. At the bottom of it all, we find ourselves in a dynamically complex environment where uncertainty, unpredictability, challenges and opportunities are the norm rather than the exception.

This complex world demands a new type of education; an education that equips people to face the challenges they will find along their lives. This paper calls it *education for life* and discusses both (i) its fundamental tenets and (ii) the main features of a physical-virtual environment for its realization. This environment is called Phyrtual InnovationGym

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and is part of the strategic work of the Fondazione Mondo Digitale within the Italian school system. The InnovationGym represents both: (1) an environment to realize the concept of education for life, and (2) a mechanism to stimulate a gradual systemic innovation across the Italian school system.

## 2. Experiential Education for Life

Education for life refers to an experiential education that blends codified knowledge (predominating in the traditional school curriculum), with life competences (involving a large element of tacit knowledge) and character formation (involving fundamental values). This type of education relates to important schools of thought and contributions about education, for instance, the 1996 Delors Report, the work on transformative learning (Mezirow, 2000 and Taylor *et al.*, 2012), the work on life-long, life-wide and life-deep learning (Banks *et al.*, 2007) and Dragovic, 2011), as well as Gardner (2008)'s five minds approach. These contributions have proposed a variety of concepts that converge on the importance of an education that goes well beyond what the educational system imparts today. *The emphasis is on the empowerment of the person's full capacities as an individual and responsible citizen, for the entire life and in all circumstances.* The 1996 Delors report, for instance, propounded that none of the talents in every person must be left untapped and, for this, it identified four types of learning: (1) *Learning to live together* (understanding of others and their history, traditions and spiritual values); (2) *Learning to know* (sufficiently broad general education with the possibility of in-depth work on a selected number of subjects); (3) *Learning to do* (competence enabling people to deal with a variety of situations and to work in teams); and (4) *Learning to be* (exercise of greater independence and judgement combined with a stronger sense of personal responsibility for the attainment of common goals). Gardner's five minds that "people will need if they – if we – are to thrive in the world in the eras to come" (p. 1). The 5 minds are (1) *the discipline mind* (expertise in at least one area, be it a specific scholarly discipline, craft, or profession; (2) *the synthesizing mind* (ability to gather information from disparate sources, understanding and evaluating it objectively, and synthesizing it to communicate to others; (3) *the creative mind* (capacity to propose new ideas, new ways of thinking, and to produce unexpected answers, new products and solutions; (4) *the respectful mind* (capacity to distinguish and welcome the differences between individuals and human groups and of working together; and (5) *the ethical mind* (capacity to reflect on the nature of one's own work and on the needs of the society within which one lives).

The minds, abilities, capacities, ways of thinking, etc., just identified are for life and hence for all places and circumstances. This is captured by the perspectives of *lifelong learning*, *life-wide learning* and *life-deep learning*. Life-long learning implies a continuing process of learning throughout our lifespan; for Banks *et al.* (2007) “Learning that extends from our childhood into old age includes all the ways we manage interpersonal sociability, reflect our belief systems, and orient to new experiences” (p. 12) In turn, life-wide learning implies the existence of multiple but simultaneous learning spaces, it “involves a breadth of experiences, guides, and locations and includes core issues such as adversity, comfort, and support in our lives” (*ibid.*). And last, life-deep learning is concerned with the essence of human development, including spiritual and religious experiences; it “embraces religious, moral, ethical, and social values that guide what people believe, how they act, and how they judge themselves and others” (*ibid.*).

Clearly, the development of the new types of minds, abilities, capacities, ways of thinking and learning, demand a fundamental transformative process for individuals and human groups. This is the central concern of *transformative learning*. This perspective refers precisely to the “process by which we transform our taken-for-granted frames of reference (meaning perspective, habits of mind, mind-sets) to make them more inclusive, discriminating, open, emotionally capable of change, and reflective so that they may generate beliefs, and opinions that will prove more true or justified to guide action” (Mezirow, pp. 7-8). In this respect, Kegan (2000) distinguishes between *informational learning* and *transformational learning*, where informational learning is about increasing the fund of knowledge, skills and resources available to an existing frame of reference; whereas transformational learning is about changes in *how* we know (i.e., epistemological changes), reconstructing the very frame of reference (p. 49)

The term “experiential” is central since education for life cannot be the result of abstract learning alone, it can only be the result of learning processes that have been called in various ways, for instance, constructivist learning, experiential learning, active learning, project-based learning and authentic learning. This means that any experience and organization intending to realize the perspective of education for life must provide an environment and an ensemble of activities where the main elements of this type of education are implemented experientially. In the following, the paper presents the Phyrtual InnovationGym, an educational environment created by the Fondazione Mondo Digitale in Italy with the purpose of implementing a programme of education for life.

### 3. The InnovationGym

The InnovationGym concept was developed by Fondazione Mondo Digitale (FMD) in 2013 with the precise objective of making an innovative contribution to the challenges and opportunities of education for life in Italy. The InnovationGym was inaugurated last March 2014 at the premises of Rome's Educating Cities managed by the FMD. That day, Alfonso Molina, Scientific Director of the FMD and a Professor of Technology Strategies at the University of Edinburgh defined the InnovationGym with the following words – slightly adapted for use here:

The Phyrtual InnovationGym (physical + virtual) is an original Italian site dedicated to self-awareness, creativity, entrepreneurship and innovation across the board: technological, social, civic, and personal innovation. The InnovationGym intends to provide the setting for education for life in which the young and old alike can acquire the tools they need for the journey of life and work. The Gym is a place where inventing and constructing means inventing and constructing oneself, discovering means discovering oneself, creating and innovating means creating and innovating oneself and, ultimately, becoming an entrepreneur of oneself. The Gym is a space where teamwork, creative collaboration and solidarity are nourished in the spirit of serving the community and the local territory for the promotion of the common good and widespread culture of innovation.

The InnovationGym makes use of all the most advanced forms of learning, starting with experiential learning, in which the innovation project, rapid prototyping through the FabLab, and other digital activities play key roles. The Gym also values and uses the knowledge accumulated over decades by universities and industry, particularly today, when the development of open content, cloud computing, and big data is starting to make it available through innovative forms of visualization and analytics. In this way, the Gym always looks to the future, to the opportunities and the challenges that emerge from the rapid evolution of technology and society as the whole. It also looks to Europe and strives to make its own contribution to the positioning of Italy among the most innovative countries.

We have a dream: a dream of many InnovationGyms of different size and configurations arising in one city after another, particularly in the world of schools. Just as laboratories of physics, chemistry, information technology, and physical education exist, we imagine the creation of “phyrtual” InnovationGyms in all Italian schools.

In the few months that have passed since its inauguration, the InnovationGym has become a place for the encounter and dialogue between old and new professions, between schools, technical institutes, research institutions, universities, companies (both large and small), non-profit organizations, government institutions, and citizens organizations, with the participation of communities of teachers, students at every level, makers, digital artists, artisans, managers, and the young and the old.

We have worked on self-awareness and self-esteem, ideation and inspiration, design, planning, coding, and problem-solving for the identification of solutions in the form of physical and virtual products, services, processes for personal, community, and territorial development. We have spoken the language of fabrication (traditional and digital), experimentation, and creativity to stimulate professional growth and self-enterprise and exercise the skills and competences of the 21st century. We have practiced education for life and work through the experiential learning of standardized formal knowledge, key competences for life, and personal character's values and attitudes for responsible citizenship.

At the heart of the InnovationGym's educational activity is the solidarity model that facilitates the multiplication of skills and competences and the generation of a growing variety of templates of codified learning activities that can be replicated in other InnovationGyms. These codified learning activities become part of the Gym's virtual area, which together with the physical environment realizes the concept of "phyrtuality": the integration of the physical and the virtual in one single leaning environment for education for life and work. The website Phyrtual.org, dedicated to innovation projects developed in the Gym environment is also a part of the virtual landscape. Phyrtual.org offers a crowdfunding function to stimulate learning and fundraising through new Internet-based methods.

The FMD InnovationGym is continuously evolving, and today vaunts various operating spaces for the practice of education for life. These are listed in Table 1, beginning with self-awareness and self-esteem, ideation and implementation activities, and moving on to innovation and entrepreneurship.

Other spaces are currently being prepared to enhance the experiential learning paths the InnovationGym devotes to creativity, innovation, and entrepreneurship. These new spaces will concentrate particularly on digital craft and art through video, game and virtual reality learning and production. This will permit the offer of more effective responses to the need for personalization of learning processes to the specific style, motivation, and multi-dimensionality of each and every one of us.

In addition, to be effective, InnovationGyms must certainly interact with other institutional and territorial initiatives dedicated to promoting widespread innovation and education for life.

Tab. 1 - FMD InnovationGym Functional Spaces (October, 2014)

<i>Ideation Room</i>	A space for the learning and exercise of self-awareness, problem solving, decision-making, design, innovation strategies, and business modelling. The Ideation Room has Lego Serious Play, Wii Remote interactive whiteboard, Root Cause Analysis Tools, Business Model Canvas, didactic micro modules, software, and app design challenges.
<i>FabLab</i>	This space is dedicated to design, coding, and both traditional and digital fabrication, animated by new artisans (the makers) and open to the territory and the school world. The first FabLab in Rome built to the instructions provided by the MIT's Center for Bits and Atoms offers: a Sharebot 3D printer, a PowerWASP 3D printer, laser cutter, plotter, milling machine, pantograph, polishing machine, lathe, drill press, welding machine. The various activities include laboratories and workshops open to both schools and the public, as well as professional training.
<i>Robotic Centre</i>	Space for the development and implementation of new didactic and coding methodologies for the stimulus and training of young people in scientific-technological disciplines and professions. The Center offers teaching kits with Ape Robot, We Do Lego, NXT Mindstorm, EV3, renewable energy kits, bench welders, Arduino, electronic components. The activities proposed include robotic labs and competitions for schools of every order and level.
<i>Activity Space</i>	This edutainment area is dedicated to leadership, team building, and motivation. Physical and mental exercises, games, and many more ways to learn and apply 21st century competences. The Activity Space offers ZoomTool, Toobeez, balls, ropes, etc.
<i>Conference Room and Workshop Room</i>	These spaces allow the sharing of knowledge, training, and teamwork.
<i>Phyrtual.org</i>	The first virtual social innovation environment based on knowledge, learning, community building, and crowdfunding that allow the InnovationGym and all related projects to connect with the rest of the world and potentially stimulate networked financing. The Gym's virtual environment also contains all the teaching material for the learning activities conducted both at the Gym and in the school world and other organizations.

#### 4. The InnovationGym in the Italian Educational Policy Document: *The Good School*

The InnovationGym inspired the Italian Ministry of Education (MIUR)<sup>1</sup> to introduce the concept as part of the proposal for new laboratories made in the recent Renzi government's policy document *The Good School (La Buona Scuola)* (MIUR, 2014). The text of the proposal is found in Box 1.

*Box 1 - The InnovationGym Proposal in the Document 'The Good School' (La Buona Scuola)*

In the past, the technical laboratories in our schools trained the professional figures who became protagonists of Italy's post-war industrial success. Today, in a similar fashion, young people are using new-generation laboratories to learn to combine the material with the digital, print in 3D, cut with lasers, and learn robotics and open-source hardware. These young people are also experimenting with creativity and discovering themselves inventors, learning early how to use enterprise tools, understanding what makes the Made in Italy so special, and what are the most interesting prospects for the nation in the next 15 or 20 years, that is, the areas worthy of specialization. **This will permit our best manufacturers to be leaders in the 21st century as well.** Making laboratory activity a customary part of teaching activities means redefining the very idea of a laboratory as a “demonstrative” place only, associated exclusively with a technological dimension. **Today, there is a need to promote an interpretation of laboratories as InnovationGyms linked to the stimulation of creative capacities and “problem solving” in students.** The demand for scientific-technological professionals is growing constantly.

The number of Italy's graduates in science disciplines (also known as STEM – Science, Technology, Engineering, Maths) is well below the European average despite the undeniable need for such qualified personnel in sectors related to these areas. The issue is all the more urgent if we consider the population of women, who are still far, removed from these subjects. This is an opportunity to be seized, and one that can be taken by starting right from the school laboratories as necessary poles of attraction.

Source: MIUR (2014), p. 111.

As may be easily seen, the text from MIUR has a strong link with the objectives and activities already underway at the FMD InnovationGym. In this respect, the step taken by the Ministry and the Renzi government

1. MIUR - Ministero dell'Istruzione, l'Università e la Ricerca.

is crucial because it can give a strong push to the wider spread of the concept of InnovationGym in the school world and beyond. This opens the opportunity for the implementation of a process of systemic and systematic innovation that starts from the reality and areas of excellence that already exist in the world of the school. This means stimulating the development of InnovationGyms that are evolutionary and can be configured as required to the different educational situations, resources, and motivations of every school. It also means developing a true InnovationGym movement in which each Gym can be linked to every other in order to facilitate the accumulation and sharing of knowledge, experience, and available teaching resources.

## **5. InnovationGyms as Configurable, Evolving, Inclusive, and Bottom-up Realities**

Transforming into reality the concepts of configurability and evolution of the InnovationGym means emphasizing the excellence and resources existing today in every school, especially the human resources: directors, teachers, students, technical and administrative personnel, and parents. It may also mean starting from a configuration that is easy to achieve in the short term but one that is also capable of evolving towards a wider and richer scope in the mid- and long-term. For this reason, the content and activities we envision in the model of the InnovationGym are inclusive and varied. Table 2 below proposes a matrix with a sample of functions(themes) that can also be conceived as experiential didactic spaces for creating configurable, evolving, and inclusive InnovationGyms. The content of the Table is proposed as a starting point and can certainly be enriched with further functions (themes).

How can the idea of the InnovationGym matrix be interpreted? There are various aspects to consider:

1. InnovationGyms can be conceived as variable and evolving combinations of functions(themes)/spaces to be didactically integrated on the basis of the resources available in the short-, mid-, and long-term. In this way, the ideal “dream” Gym can be designed while ensuring the success of the first steps.
2. The term *functions (themes)/spaces* has been used because it is not necessary to restrict the functions to completely separate spaces for each one of them. Certainly the *space* resource (together with other resources) affects the choices to be made but it does not determine entirely which and how many functions can be inserted in the Gym.
3. There are three types of functions (themes)/spaces provided in the sample illustrated by the matrix:

Tab. 2 - Matrix of Functions (Themes) or Spaces for Configurable, Evolving and Inclusive Innovation Gyms

<b>Robotics</b>						
Industrial	Educational	Domestic	Environmental	Medical	Security	Entertainment
<b>Sustainable Energy and Green Technology</b>						
Solar	Wind	Tidal Wave (Mare)	Geothermal	Biomass	Hydroelectric	Low Carbon Technologies
<b>Craft</b>						
Woodwork	Metal	Ceramics	Jewellery	Fashion/Tailoring	Stone	Paper/Flowers
<b>Arts</b>						
Music	Painting	Sculpture	Graphics	Film/Video	Theatre	Digital
<b>Special Needs</b>						
Hearing	Vision	Language	Learning/Intellectual Activity	Physical/Motor	Mental	Chronic Illness
<b>Key Competences / Digital Competence</b>						
Self-awareness/Orientation, Communication (foreign language)	Team-building, Leadership	Problem Solving, Ideation for Innovation at 360° (tech., social, civic)	Project Development, Business Modelling	Digital Making/Prototyping (FabLab, VideoLab, GameLab, Virtual RealityLab)	Robotics & Internet of Everything	Entrepreneurship and Financing
<i>Informatics Lab</i>						
Computer Use	ECDL	Internet Research/Social Nets/File Sharing/Open Content/Groupware (online collaboration)	e-commerce, e-government e-health, e-learning	Coding, App Development, Websites	Big Data Cloud Computing	e-Strategy (e.g., process innovation (productive, didactic), e-marketing, e-enterprise)
<b>Subjects and Laboratories of Standardized Knowledge</b>						
Mathematics	Natural Sciences (Physics, Chemistry, Biology)	Literature	History/Geography	Civic Education / Economic Discipline	Philosophy	Foreign Language

- (i) *Functions (themes)/spaces dedicated to key competences for life (life skills), which include digital skills.* These key competences are shown in grey in the matrix of Table 2 because they tend to be transversal, while the others surrounding them belong to rather specialized fields such as the disciplinary subjects at the bottom of the matrix. The transversal competences lie at the heart of the InnovationGym, and everyone should contain and didactically integrate a selection of them;
- (ii) *Functions (themes)/spaces dedicated to competences for specific topics, such as specialized forms of robotics, sustainable energy and green technologies, crafts, specific forms of art, and special needs.* These functions (topics)/spaces can be combined with a group of those key competences in order to provide a form to the InnovationGym in specific topics.
- (iii) *Functions (themes)/spaces dedicated to the subjects and laboratories of standardized knowledge typical of the school world (similar configurations can be conceived for the standardized knowledge typical of university programme).* To the extent that InnovationGyms develop and enrich their content, it is possible to think that, in the future, teachers of curricular subjects will be stimulated able to make use of the new functions/spaces to construct innovative and effective teaching methods for their own subjects. For example, nowadays, it is an accepted fact that robotics offers the possibility for an interdisciplinary and entertaining constructivist teaching approach applicable to both scientific and humanistic studies such as literature and philosophy. Similar potential lies in the functions/spaces dedicated to producing videos, educational games, and immersive reality, in which teaching methods based on story-telling or flipped classes, can be proposed and implemented.

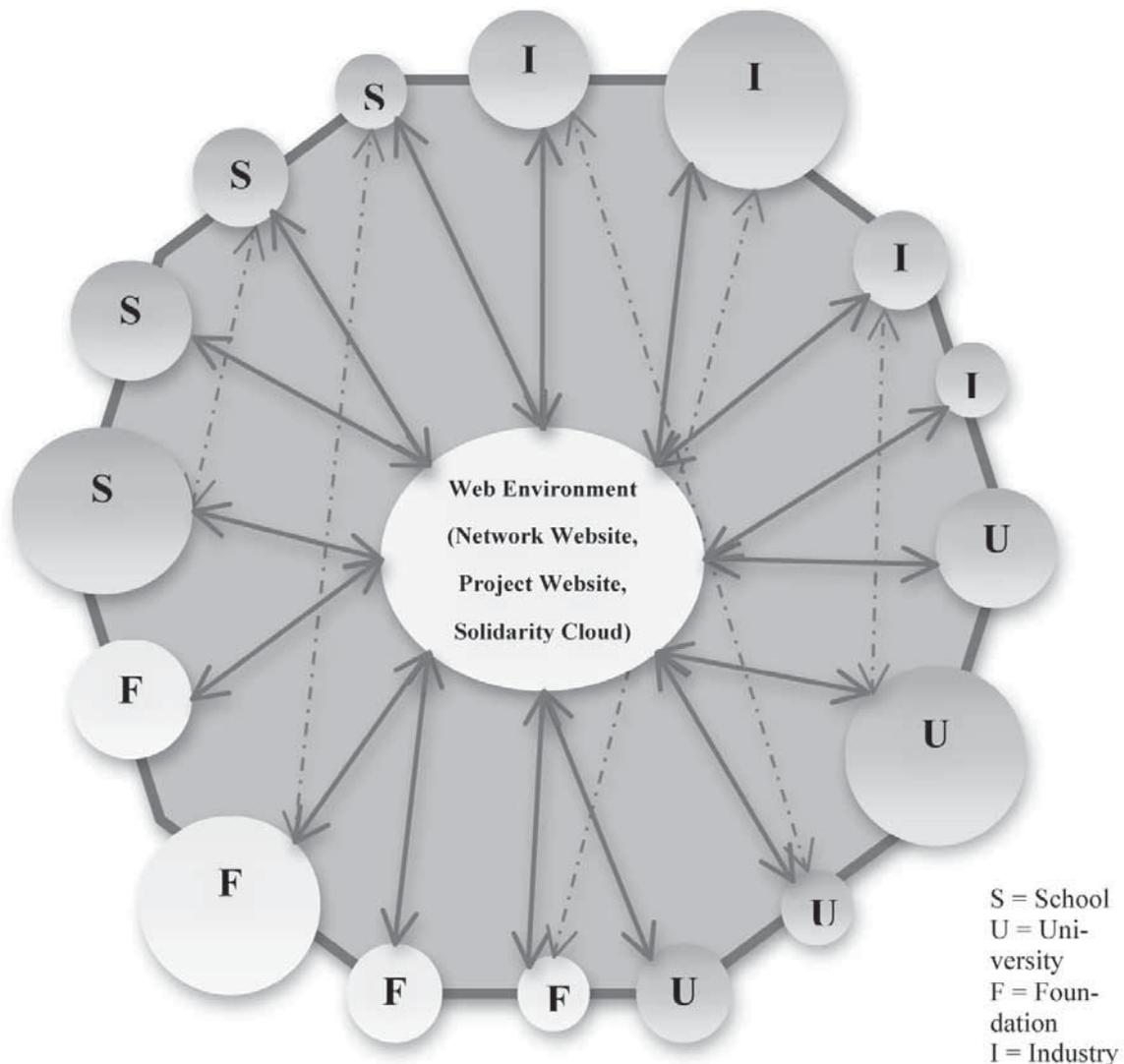
The InnovationGyms can stimulate innovation in the didactics of standardized subjects and, gradually, in the overall school dynamics, naturally giving all due consideration to the time required for what would be a profound educational and cultural change. It goes without saying that such change requires long-term policy programmes that forcefully support their systemic implementation.

## **6. The InnovationGym Network**

The natural development of the concept and reality of the InnovationGym is the creation of a physical-virtual (*phyrtual*) network of Gyms that stimulates and facilitates solidarity and the sharing of knowledge and experience, as well as the use of resources and activities. The establishment of such network would multiply the potential for change in the direc-

tion of a widespread culture of innovation for life and work in the complex 21st century society. Figure 1 illustrates the concept of InnovationGym network. There are various aspects to bear in mind for further examination.

*Fig. 1 - The InnovationGym Network*



First, In accordance with the principles of configurability, evolution, and inclusion, there should be a variety of InnovationGyms. Such Gyms may emerge in any sector of activity, and will be differentiated on the basis of their content, activity, and size. Figure 1 illustrates this aspect through the different circles of different size associated with four different sectors (selected as examples): **S** (School), **U** (University), **F** (Foundations) and **I** (Industry). The different sizes of the circles indicate the extent

of available resources of knowledge, experience, and equipment of the different Gyms.

Next, all InnovationGyms must have the possibility to link with other Gyms in order to facilitate the sharing and exchange of knowledge and experience, and also the use of resources and activities. This possibility for direct and mutual support is illustrated in Figure 1 by the many-sided polygon (near circle) that unites all the smaller circles and by the dotted arrows (light blue). They represent the strategic need for the establishment of relationships and collaboration between all Gyms. This possibility is of critical importance because it will provide humbler structures with access to the resources of the larger structures, in this way promoting inclusion through solidarity.

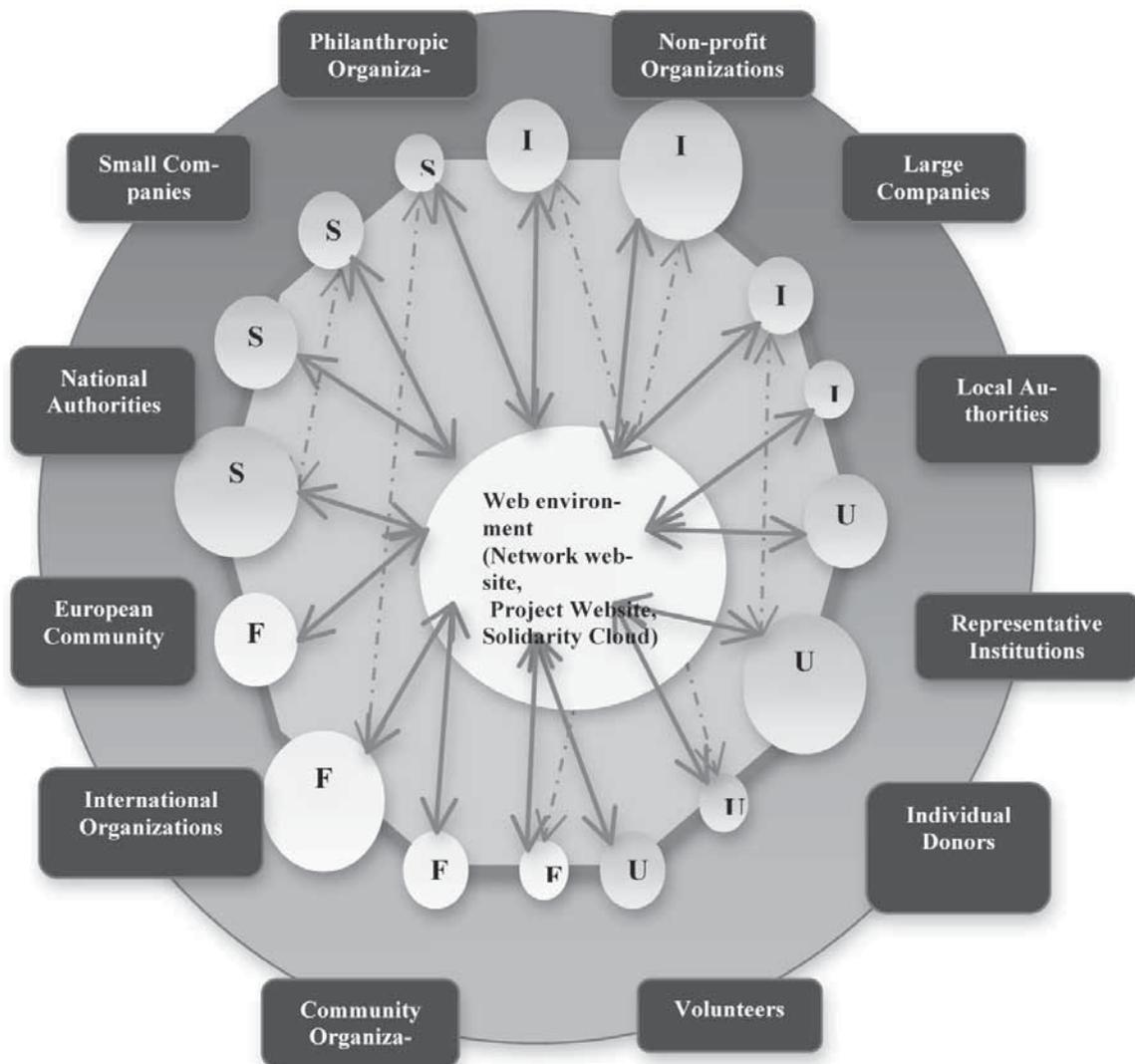
All the Gyms must be able to connect to an online collaborative environment. Every Gym must also try to interact with other territorial realities, such as the spaces dedicated to co-working, FabLabs, and incubators. In Figure 1, the solid (red) arrows that link all the different Gym circles with the central *Web Environment* circle represent the virtual connection of all the Gyms both: (1) between themselves and (2) to the online environment for communication, didactic resources, relationships, project-building, and online collaboration. This environment is conceived with three integrated elements (websites): (1) the institutional website of the network of InnovationGyms at [www.innovationgym.org/rete-delle-palestre/](http://www.innovationgym.org/rete-delle-palestre/); (2) the project-building website – here, the Fondazione Mondo Digitale has created the first community-building website for social innovation, [Phyrtual.org](http://Phyrtual.org); and (3) the *Solidarity Cloud*, which contains all the didactic resources developed by the members of the network, as well as useful didactic resources developed by other people. The Solidarity Cloud houses knowledge and learning objects, such as didactic templates, video-lessons, various apps and software and, also, volunteer professionals. The FMD has developed the *Solidarity Cloud* concept and has already begun working on its structural and content development.

## **7. The InnovationGym Movement for the Growth of a Widespread Culture of Innovation**

The creation and implementation of a widespread network of InnovationGyms does not involve only the organizations that build and operate the Gyms. This process must involve all the organizations and individuals interested in supporting and participating in the construction of Gyms in the school world, in universities, or in the territories. Only this will facilitate the mobilization of all the material, financial, and human resources necessary to transform the vision of the InnovationGyms network for

education for life into a true social and educational innovation. The outer circle in Figure 2 represents the presence of many other types of stakeholder capable of playing small or large roles in the construction of Gyms. The dream is the creation of a real effective InnovationGym movement, a farsighted and generous movement for the common good of the country.

Fig. 2 - The InnovationGym Movement



## 8. Conclusions

The fulfilment of the vision and dream presented in this paper can have a strong impact on the educational and economic, social, and cultural life of Italy (and of other countries for that matter). At heart, it offers a prac-

tical way to implement the challenge of education for life. Of course, the challenge is complex – as today’s world – and the process of facing it with success will demand a serious, systemic, systematic and farsighted effort capable of involving the competences, experiences, energies, and enthusiasm of all the organizations and individuals, young and adult, willing to commit themselves to seeing Italy regain its position as one of the world’s most dynamic, innovative, and economically and humanly rich nations on earth. This is something that must be achieved, above all, for the generations to come!

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# Embracing Immersive learning, from schools to workplaces

*Domenico Zungri\**

## 1. A Brief History of the Immersive Revolution

The last two Centuries of Human History have been characterized by rapid and massive technological advancements: from new means of transportation like trains and aircrafts, to new means of communication like radio and television. During the second half of the Last Century, a new technological marvel – the Computer – surfaced from research labs: and similarly to other technologies, these house-sized, electromechanical machines were meant to cover specific needs, such as data computation and analysis.

It was only after the introduction of integrated circuit-boards and microprocessors, that things took a more radical direction: with smaller, faster, cheaper machines ultimately invading both home and office environments during the '70s and the '80s, also giving birth to the technopop phenomena of Video Games. The '90s brought two major advancements – the World Wide Web and Mobile Devices – while Virtual Reality (VR) produced only a collective techno dream: but failed in the delivery of actually working systems, and was archived by mainstream media as a complete flop.

Today, two decades later, significant technology advancements and industry breakthroughs brought *Virtual Reality* back at the top of current buzzwords, but this time with reasons. Currently, everybody in the ITC industry agrees that 2015 will be the year when Virtual Reality amazed the masses: of course it will take 2-3 years to reach a tipping point, but this time VR is here to stay, and it will be a one-way ticket for the next

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Digital Platform, after Personal Computers and Smartphones reached their technological and financial maturity. Currently, all the Big Players (i.e. Google, Samsung, Facebook, Microsoft, Sony) are conducting billion-dollar acquisitions, in order to earn their own place at the table of Wearable Immersive Technologies.

## 2. The evolution of Immersive Technologies

The goal of Virtual Immersive Environments is to give users an intense and seemingly real experience: they put the participants right “inside” a digitally created world, and the participant is not just looking at something on a screen or monitor but is instead surrounded by the work and, in many cases, is interacting with it. The most encompassing form of Immersive Environment is *Virtual Reality* [VR], which require the user to wear a *Head-Mounted Display* [HMD], or a facial mask containing many embedded technologies – of input and output – in order to synchronize what the user sees and does: stereoscopic lenses, surround audio, positional tracker, infrared hands-gesture detection, microphone for vocal commands, gyroscope to determine user’s head position and orientation.

A fundamentally different type of Immersion is given by blending the real environment with digital contents: we speak of *Augmented Reality* [AR] when the user wears technology-enhanced transparent glasses with micro-projectors over the lenses. In *Mixed Reality* [MR] instead, holographic-like imagery is integrated into real physical settings, usually through digital projectors and transparent angled mirrors: a modern version of the *Pepper’s Ghost* trick, used for the last two centuries by skilled illusionists.

In all these cases – at different degrees – the effect is like being inside a movie set, and to act as the protagonist of a film directed by an Artifi-

cial intelligence which coordinates the non-linear narrative sequences and the interaction dynamics. The current techniques and technologies allow an evolutionary leap toward a unique Hybrid Medium, which combines the Emotional Strength of Cinematic Storytelling, the sense of Immersion of Virtual Reality, and the Intense Interaction of Video Games.



This ‘Perfect Storm’ between Technology, Narrative and Psychology, is called *Presence*: or to be suffused with the conviction —both unimpeachable and too deep for words — that you are in another world. *Presence* is still coming into a definition, but we know two things about it: It feels good, and it’s different from verisimilitude. It’s a very fragile state – far easy to break – but when achieved, it’s so joyful and sustaining that those who touch it tend to fall silent. As such technologies blur the boundaries between design, environment and storytelling, we can create an Evolutionary, Interactive Experience: which in turn generates new Storytelling and Learning experiences. In fact, while many works of Immersive Environments are designed for pure entertainment, they are also used for other purposes as well: museum installations, machine simulators, psychological treatment of phobias or Post-Traumatic Stress Disorder, etc. However, among all fields of application, VR is especially effective in both Educational and Training activities.

### **3. Games and Learning: an Anthropologic and a Neuroscientific approach**

Since Humankind inhabited this Planet, there are two constants – in time – about childhood learning: Stories and Games. Even in prehis-

toric times, kids used to play as hunters or warriors by day, and to gather around the campfire at night, to listen to the stories told by the elders of their tribe. Today, the learning tools can be much more sophisticated: but we're still dealing with a powerful combination of Interaction, Role-Playing, Immersion, Simulation and Storytelling. Today, thanks to advanced psychological researches (and to medical diagnostic instruments, like the Functional Magnetic Resonance), we went through a total revolution on what we knew about our most complex – and yet mysterious – organ; our Brain. Latest developments on Brain Studies validate and explain why games and stories are so effective: incorporating entertainment elements into a training experience, engages and engrosses the learner: the experience is perceived as pleasurable, and they actually spend more time through it, instead of trying to dodge it.



An entertaining environment is not perceived as intimidating, and this allows the ‘Amygdala’ – the most primitive and instinctive part of the brain – to evenly distribute all the neural synapses in the most appropriate functional areas (logic, memory, dialogue etc.), instead of activating the ‘Fight or Flight’ impulse, typical of stressing situations. In fact, Interactive Media engage multiple senses, and offers different ways of acquiring information and skills: instead of just reading textbooks, digital learners can participate in interactive simulations where they're called to observe their surroundings, converse with characters, manipulate objects, search for clues, and analyse data. This type of educational experience requires them to be fully alert and active, and the wealth and variety of stimuli make for a deeply engaged learner. Moreover, interactive learning is highly scalable: the same program can usually accommodate different levels of learners, and different learning styles. This combination makes

learning far more appealing than it ordinarily would be, and it works equally well for teaching students in the classroom, as it does for teaching employees in a workplace setting.

A few years after the explosive success of both arcade and console video games, a genial game developer published “The Art of Game Design”: a book about the science and philosophy of making video games, where the concept of ‘Gameplay’ was at the heart of interactive productions. The basic rule of Gameplay, is that of player adaptation: several levels of progressive difficulty, crafted so that users will be challenged – but not beyond their ability – and will find material that matches their preferred personal style of playing. It wasn’t long, before this innovative process of acquiring new knowledge was applied to education and training activities: it revealed to be enormously empowering for students of all abilities and – as learners work their way – they gain a satisfying feeling of mastery and accomplishment.

Today, we already have three generations of Digital Natives: kids who dealt with internet and video games since early childhood. Those kids are developing a new Mental Toolset of diverse and novel forms of intelligence (Visual, Collaborative etc.) and skills (Multitasking, Problem Solving etc.): as a consequence, their minds react to a certain kind and frequencies of stimulations. And yet, the poor adjustments of pedagogical processes in schools, and of professional training at work, make more and more difficult the integration of individuals in our complex and interconnected reality. This causes a great deal of stress and frustration – especially in young people – while trying to find their motivations in outdated models of study and work, which – in plain Digital Age – are still lying on the typical needs and methods of the Industrial Age (notion-based knowledge, punishment for errors etc.).

We must then embrace, conceptualize and build the Pillars of *21st Century Pedagogy/Andragogy*: based on the most recent discoveries in ‘Brain Studies’, on the most advanced educational models (*Project-Based Learning, Emotional/Social Intelligence, Experiential Storytelling*), and by taking advantage of the proper technologies, in order to deliver educational contents with the engaging interactions between teachers and students.

#### **4. EdTech: Visions of the Future**

The Future of *Virtual Reality* began in 2012, when young inventor Palmer Luckey opened a funding campaign on the crowdfunding website *Kickstarter*: he and his team asked USD 250,000 to bring their rough prototype of Head-Mounted Display – the *Oculus Rift* – to a more finished

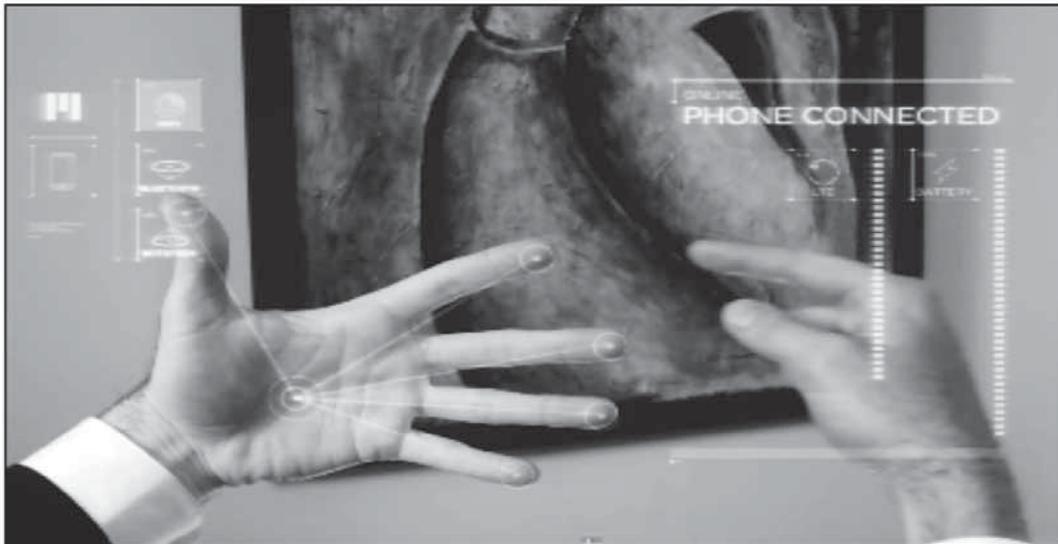


product, but what came next, was entirely unexpected. The project generated such hype and enthusiasm, that they closed the funding campaign with donations for USD 2 million: and when one year later their developed prototype was tested by Mark Zuckerberg – founder of *Facebook* – he was so amazed by the immersive experience, that he acquired the company *Oculus VR* for USD 2 billion. The Oculus Rift prototype is now in the hands of more than 100,000 developers around the planet, and is expected to be released in a consumer version in Q2 2015.

The Future of *Augmented Reality* began in 2012 as well, but took a very different path: Google launched a prototype of its AR Visor – *Glass* – and much hype was built upon it: a handful of ‘Glass Explorers’ started to test the prototype in everyday life, but before a consumer version was produced, several mistakes in both technology and marketing declared the project a flop, at least in that peculiar incarnation. Nonetheless, that hype helped to generate interest towards the technology, and Google acquired the company *Magic Leap* for USD 500 million, owners of a very secretive and effective proprietary technology of Augmented Reality. Media experts agree on 2015 as the year when Virtual Reality amazed the masses, and the market for Head Mounted Displays (Virtual/Augmented/Mixed Reality) is expected to reach USD 9,000 million by 2019, growing at a CAGR of 55.3%. In the same timeframe, the market for the Development of Virtual Training Contents should generate equally impressive revenues: USD 10,000 million Worldwide, of which, USD 4,000 million in Europe alone (source: *Transparency Market Research*).

These forecasts are continuously updated – to higher and higher values – and while the first wave will hit big for the industry of *Interactive Entertainment* – Immersive Movies and Games – the professional appli-

cations of both VR and AR are expected to be effective and consistent, hence with infinite potential. A surgeon can simulate a complex operation before operating on the patient, an architect can walk his clients through their new houses – long before they are built – and commercial companies (i.e. Pepsi, Chrysler, Red Bull, Ralph Lauren) are already creating stunning experiences of Brand Engagement, to amaze and involve their customers.



## **5. Case study: the *Virtual Training Center for Business Simulations***

Immersive Technologies can also generate new forms of working, by providing an *Online Virtual Environment* where people from all over the world can gather to join training sessions or coordinated operations, but also to share informal moments of *Remote Socialization* with their distant fellows.

The *Virtual Training Center* [VTC] is a 8.000sqm island, surrounded by pools, waterfalls, lounge/relax areas, with plenty of engaging group activities. The Simulation can be experienced through a 2D PC monitor or Mobile Display, or wearing the VR Headset Oculus Rift: the latter giving a total sensation of Immersive Presence, as if the participants were actually there. The Simulated Environment allows big companies (i.e. Mobile Operators) with many offices scattered around, to offer the same corporate events to every employee from any remote site. The VTC is a comprehensive Modern Office Environment with Open Architecture and Multi-Functional Spaces. Large screens can project presentation slides, videos, or live streaming.



It's the ideal solution for Large-Scale/Long-Distance Business Simulations, Professional Training activities, Leadership Mentoring, Team-Building exercises and Problem-Solving Skills teaching. Simulation-Based Training is an instructional method that incorporates educational content and learning principles into video games. It can be used in almost all subjects and skill levels, and provides learning opportunities that engage learners in interactive instruction. It involves both individual and team activities, that can range from completing very simple tasks to the development of intricate problem-solving skills. Such a compelling method helps prepare learners to participate in the globalized, technological society of the 21st Century.



The Control Desk is for Simulation's Coordinators, (aka '*Puppet Masters*'). They're equipped with sophisticated monitoring systems, providing Real-Time feedback as the Simulation unfolds accordingly.



A feast of water, running both outside and inside the structure: relaxing colors and sounds make it the best companion for busy minds, who need to absorb and digest new concepts every day.

A Relaxed Lounge is the 'virtual reward', after a busy day of Remote Collaboration or Training.

Essentially, the *Immersive Learning Simulation* is a powerful training tool for managers and employees. They can act as a team to learn new procedures, and practice acquired knowledge individually, using previous sessions data to improve performance. The Simulation leads to engaging and meaningful interactions, crafted with the same Design and Story-telling wizardries of top Video Games.

## 6. Challenges and Opportunities

In order to develop all these applications, the sector will need 'squadrons' of skilled professionals: this is opening new careers for Interaction Designers, 3D Artists, Programmers, Storytellers, Engineers. They are requested in high demand, but due to the extreme complexity of the matter they are also expected to develop a multidisciplinary and cross-sectorial curriculum preparation. However, even the *techno-savvy Millennials* are not entirely aware of such opportunities: as previously stated, they often 'consume' the digital media, but rarely foray into actual content production.

Perhaps they are not entirely to blame, since their surrounding environment – school, family, and government – often fails to highlight these chances, pointing instead towards more classical professions, ultimately generating the impressive amount of unemployed youth, ever.



This challenge is at the heart of *Immersive Labs*: a department of the *Innovation Gym*, at *Fondazione Mondo Digitale* (Rome, Italy), funded by *Google* and dedicated to courses and workshops about these pioneering professional fields. The Department is equipped with Next-Gen Digital Technologies – ranging from Immersive Environments to high-end Graphic Workstations – and from Q2 2015 will host two main courses:

- *Immersive Storytelling* (Game Development + Virtual Reality).
- *Cinematic Storytelling* (3D Animation + Visual Effects).

The courses last one week, and are 22 hours long: 16 hours of professional coaching, and 6 hours of ‘self-awareness’ exercises and activities. With such a short duration, they aim at informing rather than at training: their purpose is to stimulate young unemployed and *NEETs* (Not in Education, Employment or Training) in developing a passion about the field, and an interest towards the many related professions.

Despite being introductory courses, both lessons and exercises will follow the same professional practices of a major development firm, also using professional authoring tools such as *Autodesk Maya*, *Epic Unreal Engine*, *Adobe After Effects*. At the end of the course, participants will be pointed towards tools and resources to grow their interest: after the first year of activity, *Immersive Labs* will also offer a series of in-depth online tutorials, and a periodic follow-up for past participants, who joined together in order to develop their own authorial project.

## 7. Conclusions

Despite the focus of this paper on the educational and professional implications of Immersive Technologies, it's impossible not to think at how both Virtual Reality and Augmented/Mixed Reality will significantly impact every aspect of our lives in the years to come: all the big names in hi-tech are heavily investing in the technology itself, and a swarm of VR enthusiasts is already generating Immersive Contents on prototype devices (Oculus DK2), despite the early lack of commercial units on the market. Virtual Reality is an impressive experience, and often awe-inspiring: but it still needs several enhancement, to be liked by anyone – the same way smartphones did. However, the fact itself that two giants of the internet – Google and Facebook – are making a great deal of company acquisitions in this field, means that it's only a matter of time before VR/AR will become the Next Computing Platform, universally adopted in both the personal and the professional domains.



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# Soft Skills for the Next Generation: Toward a comparison between Employers and Graduate Students' Perceptions

Chiara Succi\*

## 1. Unemployment & Lack of Skills

The economic downturn has led to a dramatic increase of youth unemployment in Europe: 5.6 million young people are unemployed across Europe, and a total of 7.5 million are neither being educated nor are they working (Mourshed *et al.*, 2014). Moreover, while young people are eager to work, more than half of those without jobs say they simply can't find one at all, while businesses across Europe insist they struggle to find young people with the skills they need.

Employability refers to a person's capability for gaining and maintaining employment. So, it refers to a set of achievements – skills, know-how and personal attributes – that make people more likely to gain (or change) employment and to be successful in their chosen occupations, which benefits themselves, the workforce, the community and the economy (Bertagni *et al.*, 2014, Forrier & Sels, 2003; Sung *et al.*, 2013).

The European Commission is strongly committed to increase people employability and launched an initiative called *Agenda for new skills and jobs* (EC, 2012). The Agenda presents a set of concrete actions including reforms for 'flexicurity' of jobs, improvement of working conditions and, especially, equipment of people with the right skills for the jobs of today and tomorrow.

Literature about employability explores extensively changes of the job market environment (Fugate *et al.*, 2004; Seibert, Kraimer, & Crant, 2001) and the related competences required.

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## 2. New Job Market requires New Competencies

It is well known how the society is changing due to globalization and digitalization (Presnky, 2001; Rifkin, 2001). In the knowledge society, we are strongly interconnected and we deal with increased complexity (Morin, 2001; Bauman, 2003), challenging cultural convictions and striving for integration.

The European Union (2006) has made precise recommendations to guarantee more flexibility in the labour force, allowing it to adapt more quickly to constant changes in an increasingly interconnected world. They are also a major factor in innovation, productivity and competitiveness, and they contribute to the motivation and satisfaction of workers and the quality of work.

The framework defines eight key competences and describes the essential knowledge, skills and attitudes related to each of these. These key competences are:

1. *“communication in the mother tongue*, which is the ability to express and interpret concepts, thoughts, feelings, facts and opinions in both oral and written form (listening, speaking, reading and writing) and to interact linguistically in an appropriate and creative way in a full range of societal and cultural contexts;
2. *communication in foreign languages*, which involves, in addition to the main skill dimensions of communication in the mother tongue, mediation and intercultural understanding. The level of proficiency depends on several factors and the capacity for listening, speaking, reading and writing;
3. *mathematical competence and basic competences in science and technology*. Mathematical competence is the ability to develop and apply mathematical thinking in order to solve a range of problems in everyday situations, with the emphasis being placed on process, activity and knowledge. Basic competences in science and technology refer to the mastery, use and application of knowledge and methodologies that explain the natural world. These involve an understanding of the changes caused by human activity and the responsibility of each individual as a citizen;
4. *digital competence* involves the confident and critical use of information society technology (IST) and thus basic skills in information and communication technology (ICT);
5. *learning to learn* is related to learning, the ability to pursue and organise one’s own learning, either individually or in groups, in accordance with one’s own needs, and awareness of methods and opportunities;
6. *social and civic competences*. Social competence refers to personal, interpersonal and intercultural competence and all forms of behav-

- our that equip individuals to participate in an effective and constructive way in social and working life. It is linked to personal and social well-being. An understanding of codes of conduct and customs in the different environments in which individuals operate is essential. Civic competence, and particularly knowledge of social and political concepts and structures (democracy, justice, equality, citizenship and civil rights), equips individuals to engage in active and democratic participation;
7. *sense of initiative and entrepreneurship* is the ability to turn ideas into action. It involves creativity, innovation and risk-taking, as well as the ability to plan and manage projects in order to achieve objectives. The individual is aware of the context of his/her work and is able to seize opportunities that arise. It is the foundation for acquiring more specific skills and knowledge needed by those establishing or contributing to social or commercial activity. This should include awareness of ethical values and promote good governance;
  8. *cultural awareness and expression*, which involves appreciation of the importance of the creative expression of ideas, experiences and emotions in a range of media (music, performing arts, literature and the visual arts)".

Building on these recommendations, it is crucial to develop those competencies and capacities that are relevant to guarantee employability aligned and fine-tuned with the labour's world (Seibert, Kraimer, & Crant, 2001).

### **3. Role of Corporate and Academic Organizations**

Big attention has been devoted to the implications for the business environment and, in fact, multinational companies are struggling to develop leaders and employees able to operate in such a complex scenario. In particular, after the war for talent (Michaels *et al.*, 2001), played trying to attract the best people, now, the game is about defining proper criteria to identify talented people. Who is a talent?

Considering knowledge almost as a "commodity", due to the easier access to content (research engines, online universities, MOOC, ...), what does make the difference?

Laszlo Bock, SVP of People Operations at Google, recently declared in an interview at the New York Times (Friedman, 2014) that:

"G.P.A.'s are worthless as criteria for hiring, and test scores are worthless... We found that they don't predict anything. [...] Good grades certainly don't hurt [...] but there are five hiring attributes we assess across the company [...] 1. We look for general cognitive ability, and it's not I.Q. It's learning ability; 2. Emergent leadership, as opposed to traditional leadership. Traditional leadership is, were you president of the chess

club? Were you vice president of sales? How quickly did you get there? We don't care. What we care about is, when faced with a problem and you're a member of a team, do you, at the appropriate time, step in and lead. And just as critically, do you step back and stop leading; 3. Humility – it's intellectual humility. Without humility, you are unable to learn. It is why research shows that many graduates from hotshot business schools plateau. Successful bright people rarely experience failure, and so they don't learn how to learn from that failure; 4. Ownership. It's feeling the sense of responsibility, the sense of ownership, to step in; 5. Expertise”.

The need of companies to find people with the “right attributes” launch an important challenge to universities and business schools that are accused to be detached by the business world and to develop people unprepared to enter the job market (Bennis & O'Toole, 2005; Dunne & Martin, 2006).

Why is it that young people are not getting the skills that employers need?

It seems that employers, education providers, and young people do not understand one another. They operate in “parallel universes” and young people are often not learning a sufficient portfolio of general skills while they study (Mourshed *et al.*, 2014).

Which is the role of educational institutions? What does miss in academic curricula?

Quantitative expertise, analytical aptitude, language literacy (at least bilingual), computer and math literacy are clearly addressed by top higher education institutions, but a more indistinct need about interpersonal skills and personal characteristics is drawn in the literature (Kellaway, 2014).

#### **4. Focus on Soft Skills**

In the last twenty years research has been focused on the technical skills and know-how required by the job market (Eshet, 2004; Ong, 2002) but very few scientific studies have been devoted to investigate transversal competences (Ciappei & Cinque, 2014; Seligman, 2002).

The Nobel prize for economy, James J. Heckman, in the article entitled “Hard Evidence on Soft Skills”, states that “[... ] that soft skills predict success in life, that they casually produce that success, and that programs that enhance soft skills have an important place in an effective portfolio of public policies” (Heckman & Kautz, 2012).

Results of the study “Education to Employment: Getting Europe's Youth into Work” conducted recently by McKinsey in 8 European countries, show that the lack of availability of jobs in Europe is part of the problem, but it is far from the whole story: “Employers are dissatisfied

with applicants' skills [...] reporting a particular shortage of soft skills such as spoken communication and work ethic”.

Also emotional intelligence studies support the hypothesis that interpersonal skills are more likely to predict successful career (Goleman, 1995; Goleman & Boyatzis, 2008) and that are necessary for the increasing use of teams, the rapid pace of globalization, the capacity to dialogue in a cross-cultural environment, and the growing need to retain talent in organizations.

The American survey (Career Builder, 2014) conducted over a sample of 2.138 human resource managers, indicate soft skills are just as important as hard skills, ranking at the first position “candidate has a strong work ethic” with 73% of answers, second position “candidate is dependable” again with 73% of answers, and third “candidate has a positive attitude” with 72%.

## 5. Relevant Studies toward Taxonomy

It is necessary to have a premise to frame the scope of our investigation and to better define what we mean with the term *soft skills*. Life skills, social skills, interpersonal skills, leadership skills, transversal competences, social competences, and meta-competences, are commonly used to refer to the “emotional side” of human beings in opposition to the IQ (Intelligent Quotient) component related to hard skills (Shalini, 2013).

Knight & Page (2007) define them *wicked competences*, as it is very difficult to define them, because they can assume different forms in different contexts and they keep developing along the entire lifetime (Ciappei & Cinque, 2014).

A working definition we propose for this article, it is taken from Haselberger and other authors within the ModEs project (2012):

“Soft Skills represent a dynamic combination of cognitive and meta-cognitive skills, interpersonal, intellectual and practical skills. Soft skills help people to adapt and behave positively so that they can deal effectively with the challenges of their professional and everyday life”.

Recently some studies are being conducted to classify the soft skills required by the society (OECD, 2012; EU, 2006) and by employers (Manpower Group, 2014; Mourshed, *et al.* 2014). Cluster of soft skills have been built following different criteria.

The Italian study conducted by Manpower Group (2014) identified three clusters of competences considering the level of seniority (Table 1).

Tab. 1 - Manpower Group competences

	Junior	Manager	Executive
Cognitive Area	Analysis	Problem solving	Strategic Vision
	Synthesis	Decision making	Critical Thinking
	Openness	Flexibility	Innovation
Action Area	Initiative	Pragmatism	Risk taking
	Accuracy	Big Picture	Control
	Energy	Determination	Resilience
	Results	Planning	Organization
Social Area	Communication	Persuasion	Negotiation
	Support	Orientation	Talent development
	Collaboration	Involvement	Leadership
Emotion Area	Self-Esteem	Self-Efficacy	Entrepreneurship
	Stability	Proactivity	Tolerance to stress
	Self-Awareness	Empathy	Emotional Intelligence

Other studies conducted by OMS (1993), ISFOL (2012) and within the framework of the Tuning Project (Gonzalez & Wagenaar, 2008) divided skills in functional macro-areas in accordance with the context of the activity (academic, field experiences, ...).

The study OECD/CERI identified the so-called soft skills for the future (Ananiadou & Claro, 2009) identifying three new dimensions: 1) *Information* – Information as source (searching, selecting, evaluating and organising) & Information as product (restructuring and modelling of information and the development of own ideas/knowledge); 2) *Communication* – Effective communication & Collaboration and virtual interaction; 3) *Ethics* – Social responsibility & Social impact.

A comprehensive taxonomy has been proposed by Ciappei & Cinque (2014) dividing soft skills in accordance with the dimension of action among politics, strategy, organization, and ethics (Table 2).

Tab. 2 - Taxonomy of Soft skills (Cinque, 2012; Ciappei & Cinque, 2014)

<b>POLITICS</b> Listening	<b>STRATEGY</b> Propensity	<b>ORGANIZATION</b> Sharing	<b>ETHICS</b> Generation
Leadership	Entrepreneurship	Planning	People Development
Conflict Management	Results Orientation	Communication	Commitment
Customer/User Orientation	Continuous Improvement	Negotiation	Learning Skills
Adaptability to Change	Contact Network	Teamwork	Decision Making
Self-Awareness	Culture Adaptability	Analysis Skills	Creativity & Innovation
	Tolerance to Stress	Management Skills	Life Balance
		Research & Info Management skills	

	Personal
	Social
	Content-reliant/ Methodological

As shown in Table 2, these soft skills can be also grouped by personal, social and methodological level, if soft skills are considered in a developmental perspective. As mentioned before, an interesting issue, talking about soft skills, is how to foster their development in individual, academic, and professional contexts.

## 6. Research Design

A research to assess the perception of the relevance of different soft skills among different populations in organizations has been designed. As soft skills are “wicked skills”, they are extremely undefined and indeterminate (Knight & Page, 2007). Each skill such as *Tolerance to Stress*, *Decision Making*, *Culture Adaptability*, and others, can be considered a mix of dispositions, attributes and practices. It can be very difficult to share a common understanding and to assess these attributes.

Studies typically refer to a precise sector, or they are conducted on a single area/region, or they involve only one specific population. Results

simply reveal some preferences of a given sample on the topic but cannot be translated into specific actions and do not provide robust data and recommendations for policy makers and educational institutions.

In addition, it can be observed that the younger is the population; the lower is the level of awareness about the relevance of these soft skills, as they are very difficult to measure and to be observed without a real performance (Heckman & Klaus, 2012; Knight & Page, 2007).

The objective of the research is to compare employers and graduate students' perceptions about the importance of soft skills for the next generation of workers.

On one side, it is important to collect employers' perspective about the new needs of the job market, the gap on soft skills, and new recruitment criteria recently introduced by their companies (Friedman, 2014).

On the other side, it is necessary to include the perspective of young workers and to collect their reactions to first job challenges, assessment of their own performance, identification of possible gaps, and their perceptions of key soft skills required by the job market for the next generation of workers.

## **7. Methodology**

A blended methodology will be used to achieve the research objectives. A set of focus groups will be organized with a panel of managers and a panel of graduate students in order to assess each soft skill of the taxonomy and provide additional descriptions and to associate correlated behaviours (e.g. self-awareness: to recognize own limits).

The second part of the research will be focused on a small set of soft skills (e.g. Politics-Listening Category) that will be further described with the qualitative data collected through the focus groups and one to one interviews with managers and young workers.

Finally a survey will be built to assess the perceived importance of each soft skill for the next generation of workers. A population of managers and hundreds of graduate students among Italy, French, and Switzerland, will be involved to answer the questionnaire.

The research intends to address a concrete problem observed in the society regarding unemployment, weak preparation of academic curricula and lack of necessary skills in the job market.

Results can indicate important areas of action for education institutions, HR managers, and leadership development organizations.

They can be immediately transferred to universities and business schools in structuring the offering of content and in providing insights within the reflection about the future for management education institutions.

In addition, a reflection in the business community can be activated to address the implementation issue and to define recruitment criteria in light of the needs of an evolving job market and of the novel relevance of soft skills.

## Annex. Soft Skills Descriptions

Tab. 3 - Description and clustering of Soft Skills (Haselberger et al., 2012)

	<i>Skill</i>	<i>Description</i>
<i>Personal</i>	Learning Skills	The ability to provide a self-assessment of the necessities of knowledge (theoretical or practical) and take measures to acquire and implement this knowledge, while maintaining a flexible and open attitude towards learning throughout the professional life.
	Commitment	The ability to make a commitment to the organization and understand its specific characteristics by merging the individual behaviour and the professional responsibilities with the values, principles and goals of the organization.
	Professional ethics	The ability to take actions while bearing in mind the principles and ethics of the profession in the daily activities.
	Tolerance To Stress	The ability to show endurance in complicated or stressful situations, and when facing barriers in the way, workloads or a pace of working different from usual while maintaining the same quality level in the tasks accomplished.
	Self-awareness	The ability to grasp our real weaknesses and strengths, as well as the motivations and values behind our behaviour.
	Life balance	The ability to manage successfully the frequent conflicts between life and work, personal and corporate goals, and between personal and corporate values.
	Culture adaptability	The ability to carry out managerial and entrepreneurial processes in multicultural environments.
<i>Social</i>	Communication	The ability to transmit ideas, information and opinions clearly and convincingly both verbally and in writing, while listening and being receptive to the proposals of others.

<i>Social</i>	Customer/ User Orientation	The ability to identify, understand and satisfy efficiently the needs of both the existing and potential customers.
	Teamwork	The ability to build relationships of participation and cooperation with other people. It involves sharing resources and knowledge, harmonizing interests and contributing actively to reach the objectives of the organization.
	Leadership	The ability to motivate and guide others to get them to contribute effectively and adequately to the attainment of the objectives.
	Negotiation	The ability to argue clearly and coherently and conciliate different opinions to reach an agreement that satisfies everyone with the aim of achieving the proposed goals.
	Conflict management	The ability to manage conflict, which means stimulating, regulating or resolving conflict between two or more parties.
	Contact Network	The ability to develop, maintain and foster contacts both at an internal and external level with the aim of reaching the best results for the organization while watching over its image.
<i>Content-reliant/ Methodological</i>	Creativity/Innovation	The ability to contribute with new ideas to develop improvements in the products or services of the organization as well as in the activities performed in the job, with the aim of responding to the needs of evolution of the organization.
	Decision Making	The ability to make the decisions needed to achieve the objectives quickly and proactively. Decision making uses the relevant information to make the choice of the best alternative easier (by consulting the most appropriate sources, checking and implementing that alternative) and involves considering the assumption of some risks in conditions of uncertainty.
	Analysis Skills	The ability to draw conclusions and forecasts for the future by getting information from different sources and establishing cause and effect relationships.

<i>Content-reliant/ Methodological</i>	Management Skills	The ability to set goals and priorities by the selection and distribution of the tasks and resources, follow-up of the evolution in the execution of those objectives and act on the deviations from the initially planned that may occur.
	Adaptability To Changes	The ability to redirect the course of action to meet the goals in a new situation.
	Results orientation	The ability to make the organizational efforts profitable while having always in mind the goals pursued. It involves optimizing time management, prioritizing the future activities and using tools or techniques that make easier to develop them.
	Continuous improvement	The ability to perform the activities, duties and responsibilities inherent to the job under quality standards and look for the continuous improvement by proposing the adaptation and modernization of the process and techniques in use.
	Research & Information Management skills	The ability to find information in the literature, to distinguish between primary and secondary sources or literature, to use the library – in a traditional way or electronically – to find information on the Internet, to use various research methods and evaluation techniques.

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# Visual Thinking and Literacy Development: Teaching Poetry by Visualization

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## Introduction

Images are among the best and most powerful media. By visual thinking, we are succeeding when the medium becomes the message: as is the case with visual poetry and with literacy development by teaching poetry according to the guidelines in the LKN's projects delivered within the e-REAL labs. That is the reason why I am analyzing the interrelation between image, visual thinking and literature, focusing on poetry.

Poetry is a difficult genre – or at least the less given – to use visuals like a relevant component. Visuals are relevant both in the process of creation, where image works together with the written text creating a different artistic language and offering a new meaning's dimension, as well as in the phase usually called understanding-reception; in such a phase image's function is like a useful tool, very fine with teaching poetry in a classroom.

Poetry is normally said the most difficult of the three ways in which literature takes form, the other two are prose and theatre. We can blame that this genre is full of specific guidelines and rules to get a beautiful piece able to combine a melodic diction and a meaningful text in a perfect conjunction that produce in the reader a huge illusion of half bright-dreamy reality. Maybe because of this, poetry resorts to an hermeneutic language to make even its own code to communicate the same reality as the reader but using a different way to talk about it searching for a distinction, a bigger sense of beauty or even a small obstacle before discover the hidden message. At this point we can wonder how we can introduce image

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in a genre that works basically with the word like a main tool to build the sensation of reality based exclusively on its meanings and sounds.

However, we can talk about visual poetry as a recognised kind of poetry and also about how to make poetry visual to students and other people that can find difficult how it works or that can't say what is talking about a poem just reading it. Using together poetry and visuals is a big challenge with a successful result as we are going to see in the next pages. As experts' say – and everybody knows – image is the most powerful way to communicate something. We learn better when we can see and hear and we get a deeper understanding of the content because it becomes clear that way. Images can help communicate something effectively and efficiently: in this case, they can be used like a tool to enrich a lesson or an artistic work in a creative way.

In a modern society like the one we live in, we can't forget that everything is completely mixed: from people to culture till to the arts, where the old distinction between literary genres has disappeared to give way to new ideas and horizons in a kind of fast evolution – and we can also say revolution. Arts have to deal with this new society mixed and strongly interconnected – thanks to Internet and other technological advances – in which we live surrounded by visual, touchable, quick and stunning information. In which way literature and image can work together to take a place in such a new society?

## **1. Visual Poetry**

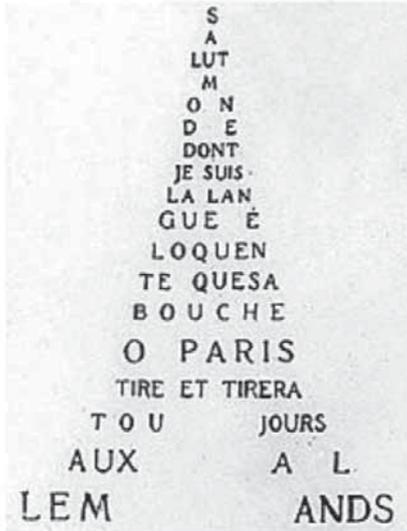
### *1.1. A Success History*

Visual poetry is the poetry that is meant to be seen, because it uses the image like a relevant part of the poem and not only the text itself. Before I begin to talk in depth about how visual poetry works, I am going to do a brief review of its evolution from its birth and first demonstrations to the latest revolution by the hand of e-poetry or digital poetry.

Although we can think visual poetry is a relatively modern phenomenon – and maybe we can't imagine its existence before Apollinaire and its famous Calligrammes, the truth is this kind of literature has been in existence since the Ancient Greece, where they compose like we know as *technopaigneia*, and after that Romans will call *Carmina figurata* (“figurative poems”). These poems were written by religious or philosophical poets, like Simias of Rhodes, Calimachus or Theocritus, whose structure imitated the form of wings, altars, eggs, axes, panpipes, etc. The use of visual images works as an extension of the verbal meaning: it was a stylistic mean that emphasize and complete the meaning of the poem. We can see some examples of this:



analogies” dislocating letters and modifying their size and shape. Both attempts to increase the visual impact of the poetic image in order to the reader can experiment a similar sensation of epiphany. Here we can see some examples:



G. Apollinaire, *Calligrammes*, 1918



G. Apollinaire, *Calligrammes*, 1918



F.T. Marinetti  
*Futurists words in freedom*, 1919



F.T. Marinetti  
*Futurists words in freedom*, 1919

Almost at the same time, poets like the Americans E. E. Cummings or E. Pound experiment too with the power of the visual image in some works of their poetry. After that, we have to wait until the decade of 1950 when we attend to the birth of concrete poetry, also called shape poetry or pattern poetry, from the hand of writers like Eugen Gomringer and Decio Pignatari. Concrete poets take advantage of the last experiments of Apollinaire or Mallarmé, and are inspired by the way in which Cummings and Pound interpret visual poetry. As change, they went to stamp on their creations a practical value from the universality of the image. This kind of poetry works with the typographical arrangement of words as a tool to show a determinate effect with the help of the other basic elements as the meaning of words, rhythm, rhyme. They conceive a visual poem as a useful object and, influenced by modern advertising and the development of photography and holography, introduce some new techniques that make the poems more attractive.

silence silence silence  
 silence silence silence  
 silence                    silence  
 silence silence silence  
 silence silence silence

E. Gomringer, *Silence*, 1954,  
 available on [www.poetiks.com](http://www.poetiks.com)

D. Pignatari, *Beba coca-cola*, 1957,  
 available on [www.poetryfoundation.org/harriet/2012/12/decio-pignatari-1927-2012/](http://www.poetryfoundation.org/harriet/2012/12/decio-pignatari-1927-2012/)

a spinner                    a shudder  
 a click    to roar                    a flick    to soar  
 upooou e                    uand e

the wings                    the nose held high  
 the plane                    steady

to touch    is ready  
 the sky

NASA Quest, "Concrete Poetry"

Concrete poetry continues to be doing until our days, incorporating the latest technological advances and adapting itself to the new societies and changes to ensure its success. This huge technological advance has motivated the birth of a new and hybrid “genre” of poetry: digital poetry or e-poetry. This phenomenon is relatively new in literature – the first examples we can find date from 1990. Influenced by the previous examples of visual poetry and concrete poetry, they try to show the difference through its integral dependence on its form on a digital medium and the processes that are responsible for the creation of the poem. The electronic medium allows many creative possibilities because we can use in the same visual space verbal signs and audio-visual images. The Internet and new technologies make it possible even to work in a collaborative way with the same text like co-authors thanks to text generators and virtual communities: this is called “collaborative poetry”. Despite this priority of the digital dimension, the final poetic result doesn’t lack poetic value, taking care to preserve the semantic richness and a meaningful form.

However, its newness poses a problem, because it requires entirely new critical terminology adapted to this new genre that allow us to discover and analyse it in depth.

## 1.2. *How does it work?*

All poetry is visual poetry, in the sense of every poem being presented printed through a physical medium – like it could be paper- and it freely uses spaces, blanks, calligraphy or typography to stamp a deliberate effect or intention in the poem that could be perceived by a reader – and viewer too-. Therefore, every poem possesses a visual dimension, but we can differentiate visual poetry from the regular one because that visual dimension is much more noticeable and has a bigger participation in the composition of the poem.

Visual poetry combines verbal information that is the written message, together with the visual information, or the way a poem’s lines are distributed to get a different work. We can consider the use of the visual image as “high speed communication” that provides the reader a big amount of information in an effective and efficient way. Visual imagery takes advantage of descriptive language to give the reader a mental image of something, and other visual effects, such as altering the poem’s physical shape or placement – word placement, line placement, line breaks – on the page, adding illustrations or play with the calligraphy. The balance between visual and verbal elements can vary, but in every case the pictorial aspect prevails over the linguistic one.

The relation between the visual image and the written text is quite close: there is a clear effort to relate visual elements to their verbal counterparts that can hold up the interpretative process. As Goldenstein says, visual poetry functions include “prevent the reader from describing/deciphering a pre-existing sense, to force him to investigate an infinitive number of paths by uprooting him from his previously constituted site of reading in our culture of the sign, of sense, of linearity in order, through the adventure of writing, to offer him the adventure of reading”<sup>1</sup>. The way in which written text and visual image interact with each other is such important in the success of a poem as it can be the content of the already said poem.

Pictorial elements try impress the reader an call attention to itself showing a wide variety of effects, from simple tautological constructions which mean exactly what they say, to complex interdisciplinary dialogues. Those elements work as qualifiers to get more precision and concrection of the written text: that way both dimensions complement each other expressing itself in a more complex and complete way, combining sight and sound sensation.

## **2. A new art**

Since the first visual poems appeared, we can consider them as serious experiments in which the author tries to say something more meaningfully: not only the content itself has to communicate significantly; it also affects the way it is communicated. This way, visual image becomes a powerful tool to use in literature too, as valid as word can be to express a feeling, an idea or a thought. This suppose a complete restructure of the basic vision they had inherited and reflect a new self-consciousness – first recognizing that writing is inevitably seen as well as seen through-. Therefore, cultural expectations change, and poetry is free to perform other functions and to merge with other arts. Now poetry has the opportunity to perform the function of painting or photography, taking advantage of the last technological advances, principles of advertising, cinema, or television, everything could be used to create something new and different. At the same time, authors have the need to protect their artistic sovereignty from mechanic appropriation or from other original and modern means. The introduction of the visual image in poetry can also respond a way to protect their compositions transforming them into something more viable: incorporating visual effects in order to empha-

1. Bohn (2010).

size the uniqueness of the poems and making them more difficult to reproduce.

Sometimes, we can hear calling it like “representational poetry” because the visual design depicts the thing itself, and the reader needs to look outside the poem for its significance. Visual poetry try to separate signifier from signified to provide the signifier a bigger role at the expense of the signified and relating directly signifier that is the word, with its referent in the reality. Authors tend to focus on the nature of the signifier – poetic and referential – and those functions use to merge in most visual poetry. They contend that verbal communication is related to abstraction, therefore the verbal sign is a social phenomenon and the link between signified and signifier is extremely fragile. As Anna Whiteside maintain “the link between signifier and referent is stronger than that between signifier and signified or signified and referent”<sup>2</sup>. For that reason, visual image has this huge prominence and makes an effort to be a timeless art, more close to picture or sculpture, in a desire of universality.

This new art demand new modes of perception, because the author and the reader collaborate together to produce a synthetic vision of the world around them. There is a new relationship between the text, the reader and the author: with the arrival of e-poetry and collaborative poetry, the reader can take part in the process of text creation like co-author and poetry will be an open structure. For that reason, we can talk about the “wreader”, or a mix between writer and reader, as he/she participates in the writing process, as a reader active contribution.

Lastly, everything contributes to change our relationship with language and literature, becoming more visual, material and even ludic. Since we discover how easily can be play the author role and the aid of visual image, literature seems more reachable to normal people, less serious – in a good way, and even more useful in real life – and not only its academic value.

### **3. Make poetry visual**

Now, we are going to analyse the relationship between poetry and visual image from the other point of view: we are going to talk about how we can make poetry visual making use of new technologies. First, we will deal with some technological tools to visualize poetry from different approaches, and, after that, we will do a review of other tools to create poetry using a digital program as in a useful way for writers and the new movement of collaborative poetry.

2. Whiteside (2001).

First, we must keep in mind that poetry is maybe one of the literature forms more delicate when it comes to catch its essence, and, for that reason, it seems difficult suppose that visual digitalization could be useful to analyse it in depth. The uniqueness of this genre doesn't just depend on a determinate rhyme, meter or sound imitated, it is not only a group of conventions; this genre is about the expression of a human feeling in a beautiful way, it is about inspiration, about the difference of what suggests depending on the reader. This kind of understanding of poetry it is only possible through the close reading experience of an individual: a close reading is the only way to get a unique lyrical and emotional understanding.

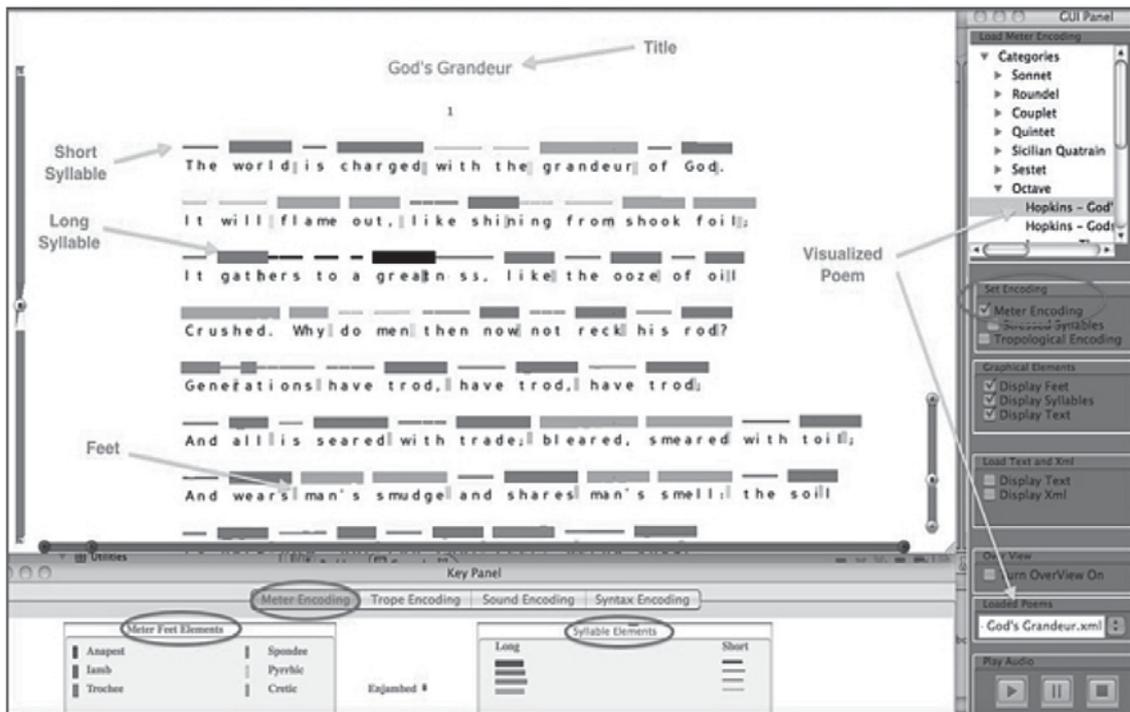
For this reason, although digital tools help us in the job of analysing poetry in great detail, they can't reach this kind of understanding: close reading is still a technique that can't be digitalized. However, they are very helpful –as we are going to see, because they can facilitate our study and interpretation of the technical aspects of poetry making it clearer and improving the educative approach.

Historically, poetry has been attempted by a literary, data driven method of the syntactic and semantic elements of the written text at hand. Nevertheless, recent works tend to focus on a more qualitative, linguistic and even graphical analysis of poetic literature. Digital visualization extracts certain relevant features and components of the poem –previously determinate- as could be the structure of the narrative, metaphors used, rhyme scheme employed, organization of the poem, or language elements, used by different tools that graphically represent the corresponding poems helping to visually analyse and compare them. This way of visualization, give us a huge amount of information that we can organize to find patterns between these components and use them to critically analyse poetry. Now we are going some tools and programs.

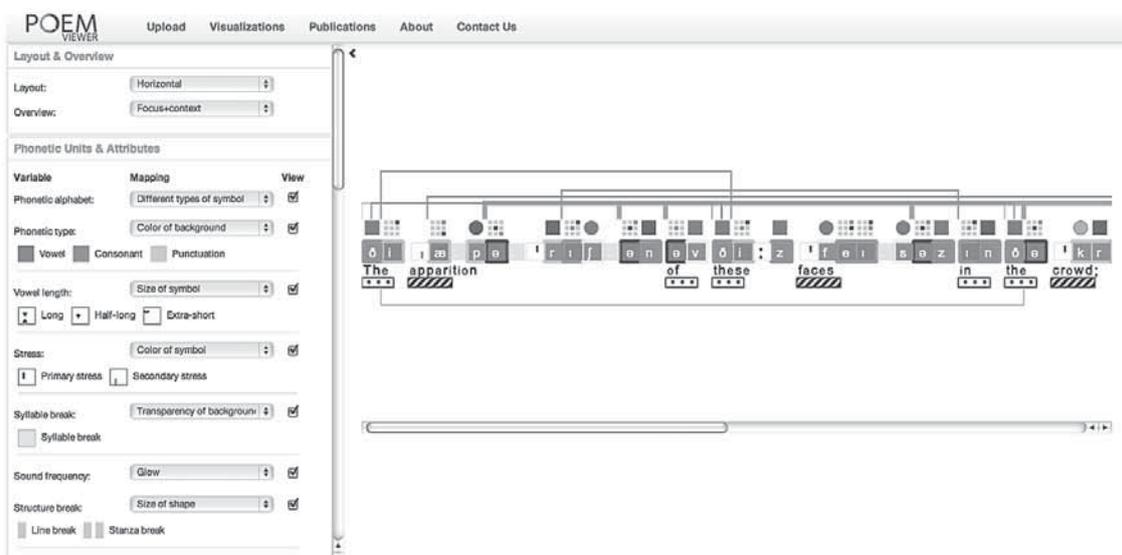
#### **4. Technological tools to visualize poetry**

Houston, Natalie M. Audenaert, Neal. “Reading the Visual Page of Victorian Poetry” *Digital Humanities* 2013, July 2013.

VisualPage application is a very useful tool to compare poems of large corpus of literary work like can be a literary period. This tool allows us to analyse the different features and key components of a poem and organize this information as a pattern. After that, comparing the different patterns of some poems we can find some trends and characteristic elements of this literary period, which are more stressed, similar constructions between poems – and differences too – and finally discover what is representative of this era (Chatuverdi, Gannod, Mandell, Armstrong and Hodgson, 2012).



The “Myopia” application tries to get a close approach of the digital visualization of poetry and become more similar to the hoped close reading experience. This tool presents an interactive visual representation of differently encoded versions of the poetry we choose, melting together multiple perspectives. It highlights syntax and sound structures and facilitates identification of frequently changing hotspots making easier our own close reading. “Myopia” can be used by scholars, helping them to analyse

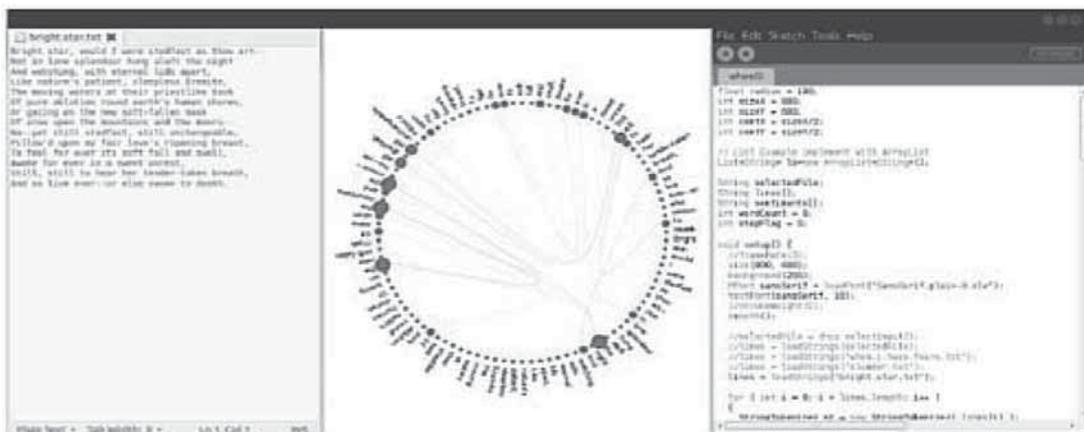


a poem in new ways: the tool seeks to improve understanding and disclose new knowledge (Abdul-Rahman, Coles, Lein and Wynne, 2013).

The “PoemViewer” tool dissects the poem into different features – until twenty six dimensional spaces – such as meter, sound, tone or rhyme. The user can choose which dimensions wants to visualize in the tool at a time. In a pattern recognition form, the user can compare poems and, the most important thing: analysing these features over a number of poems allows us to explain poetic responses to important or historical events, social phenomenon or technological advancements.

## 5. Technological tools to create poetry

Related with digital visualization of poetry, there are some applications that allow us to create poetry in a digital way, different and new. These interesting tools can make more attractive the genre with the aid of technology (Meneses, Furuta and Mandell, 2013).



The University of Arizona has developed a fascinating tool by which people can create poetry using a digital medium. “Ambiances” take advantage of the previous experiments in digital visualization of poetry and go one step further: from analysing a poem according to determines features and patterns, this application offer the possibility to directly interact with it in real time. This way, the author – and other readers and writers too – can write new poetry and visualize its poetic elements at the same time, so it produced a direct feedback that can improve the understanding of the writing process and control the direction of its poetic creation. Therefore, making closer the relationship between the writing process and the reading process in a digital medium seems to be a modern and new alternative to the traditional approach (McClure, 2013).

This kind of tool has been developed to facilitate the creation of poetry by collaboration: the University of Texas A&M presents this application to write haikus – a traditional Japanese kind of short poem characterized by simplicity, intensity and direct expression- in a collaborative manner. As a curiosity, the poem resultant seems as if it had been written by a single person – although many people have contributed. “Exquisite haiku” writes the poem word by word: people can suggest and select which word they prefer and the program takes the word preferred by the majority, organizing them in a coherent and poetic way to create the haiku.

## Conclusion

In this article, I have tried to show in which ways visual image and poetry have mixed together to create something different, new and, as the title says, successful throughout history until our days. Visual image has been a more relevant role in literature as we can imagine at the beginning, and that make us wonder about our supposed initiative and innovative projects.

In the most of educative centres, literature keeps being taught in a traditional way and poetry, like genre, continues being considered by students as the most difficult to work with and the less given to connect with normal life. This way, at the end only a few get to know how it works and discover the beauty of this genre.

In my opinion, all this happens just because we have adopted a wrong approach to teaching poetry at class, and, as we have been able to see, this genre is much closer to reality and open to innovation as we insist on make show.

On one hand, we quote a large amount of stories of how successful the result of the interaction between poetry and visual image can be, and, on the other hand, there are a great number of applications and tools to facilitate the understanding of poetry at class and make it more attractive to people. Therefore, we have everything we need to really innovate and develop a positive attitude towards poetry but unfortunately we don't decide to take the leap.

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# Abstracts

## **Rethinking employability: New managerial competencies in a global labour market**

Luca Giustiniano, Federica Brunetta

The ongoing consequences of globalization include widespread industry rationalization and heightened competition at regional, national, and international levels. In fact, the business world is becoming more networked and glocal. Such changes do not impact only on how companies and organizations run their own businesses. They also shape the way business schools grant their graduates a long-lasting employability.

The paper reports the results of a vast research project on employability conducted by a major Italian business school in 2010-2014. The study involved more than 200 top managers and results were obtained via grounded approach. Surprisingly, the traditional hard skills-related subjects (accounting, marketing, finance) were considered as must-haves (prerequisites), whereas employability (meant as desired employees' game changers) resulted to be increasingly associated with behavioral, cross-cultural and social soft skills.

Keywords: employability, workforce, competencies, soft skills, business schools, companies, contingency theory

## ***Ripensare l'occupabilità: le nuove competenze manageriali per il mercato globale del lavoro***

*I processi di globalizzazione stanno comportando la razionalizzazione dei modelli di business in molti settori, nonché l'inasprimento della competizione a livello regionale, nazionale e internazionale. L'arena in cui le imprese competono è sempre più connessa e glocal. Tali cambiamenti non interessano soltanto il mondo delle imprese ma investono anche alle business schools e il modo in cui queste generano employability.*

*L'articolo riporta i risultati di un progetto di ricerca condotto dal 2010 al 2014 in una delle principali business school italiane. Lo studio ha coinvolto più di 200 figure aziendali di vertice. Sorprendentemente, le tradizionali hard skills re-*

*lative ai canonici contenuti disciplinari della formazione manageriale (contabilità, marketing, finanza) sono state considerate quasi dei prerequisiti, mentre i fattori critici di successo sono risultati legati a quelle dimensioni comportamentali, cross-culturali e sociali generalmente ricondotte alle soft skills.*

*Parole chiave: employability, forza lavoro, competenze, soft skills, formazione manageriale, imprese, approccio contingente*

### **Competencies for innovation and employability: Rhetoric and reality from a Southern Italian region**

Lidia Greco

Whilst human capital has gained a central position within political and scientific debates over time, more recently a critical importance has been acquired by the discourse on workers' competencies. The central tenet is that what is truly crucial in today's labour market is workers' know-how-to-perform that requires knowledge, abilities and attitudes. A number of implications arise for workers, who are encouraged to gain especially transversal competencies, and for policy makers alike, who consider employability as the new job security. Starting from the empirical evidence arising from a large-scale survey carried out on Apulian small and medium enterprises (SMEs), the article critically discusses questions concerning the rhetoric of competencies. In contrast to prevailing individualized accounts of competencies and skill requirements, focusing on workers rather on workers in organizations and in labour markets, it first points attention to their social construction and, then, it engages with the debate on employability in knowledge-based economies.

Keywords: competencies, employability, innovation, Apulian companies

### **Competenze per l'innovazione e occupabilità: retorica e realtà da una regione del Sud Italia**

*Il capitale umano è un tema oramai consolidato in ambito scientifico e politico; tuttavia, il dibattito sulle competenze dei lavoratori ha assunto nel tempo rilievo crescente. L'assunto centrale è che ciò che è veramente cruciale nell'attuale mercato del lavoro è la capacità dei lavoratori di saper fare, capacità che richiede la mobilitazione di conoscenze, abilità e attitudini. Ne derivano una serie di implicazioni per i lavoratori, che vengono incoraggiati ad acquisire soprattutto competenze trasversali, e per i policy makers che considerano l'occupabilità come la nuova garanzia di sicurezza occupazionale. Sulla base dell'evidenza empirica raccolta da una ricerca sulle piccole e medie imprese pugliesi, l'articolo analizza criticamente la retorica delle competenze. A posizioni teoriche che forniscono letture individualizzate, assumendo come fulcro i singoli lavoratori, l'articolo contrappone una visione meno deterministica e più complessa delle competenze come costruzione sociale, nel rapporto che si instaura tra singoli-organizzazioni-mercati del lavoro; nell'articolo inoltre si trovano interessanti riflessioni sul tema dell'occupabilità nelle economie della conoscenza.*

*Parole chiave: competenze, occupabilità, innovazione, imprese pugliesi*

## **Internship and employability of graduates in a “glocal” context**

Davide Arcidiacono

One of the aims of European Employment Strategy is to encourage school-to-work transitions and employability of young graduates. Moreover, a stronger relationship between education and economic system is also one of the objectives of “Bologna’s Conference”, in particular in the Mediterranean countries. In this scenario, internship would play a dual role: as a tool to encourage learning by doing and as an opportunity for the construction of a “professional self”, especially when career paths are becoming increasingly fragmented and uncertain. European data confirm a correlation between internship and employability, but in Italy this link seems weaker. The national model of regulation and specific constraints of the local labor market play a role in making internship a less effective tool for learning and employability of graduates, particularly in South Italy. The paper aims to test this hypothesis with a survey to a sample of graduates in Catania (N = 1157). The local dimension of the investigation confirmed how processes of coercive isomorphism at European level face the attributes of the socio-institutional environment of a certain territory, affecting the learning conditions and the opportunities of employability for interns.

Keywords: school to work transitions, youth unemployment, over-education, tertiary education, placement office

### ***Tirocini ed occupabilità dei laureati in un contesto “glocale”***

*Uno degli obiettivi della Strategia Europea per l’Occupazione è promuovere un’efficace transizione scuola-lavoro e l’occupabilità dei giovani laureati. Il tirocinio giocherebbe in questo scenario un duplice ruolo: come strumento per incoraggiare l’apprendimento on the job e come opportunità per la costruzione del proprio “sé” professionali, soprattutto quando i percorsi di carriera dei giovani si fanno sempre più frammentati e incerti. I dati europei confermano una correlazione tra tirocinio e occupabilità, ma in Italia questa relazione sembra più debole. Il modello nazionale di regolamentazione e vincoli specifici del mercato locale renderebbero il tirocinio uno strumento meno efficace per l’occupabilità dei laureati, in particolare nell’Italia del Sud. Il paper ha lo scopo di verificare questa ipotesi con un sondaggio a un campione di laureati a Catania (N = 1157). Lo studio conferma come i processi di isomorfismo coercitivo a livello europeo si confrontino con gli attributi del contesto socio-istituzionale di un dato territorio definendo le reali condizioni di apprendimento e occupazione per i tirocinanti.*

*Parole chiave: transizioni, disoccupazione giovanile, over-education, sistemi d’istruzione terziaria, servizi di placement*

## **Navigating difficult waters. Employability challenges and methodological innovations**

Licia Allegretta, Barbara Barabaschi

The paper presents the tools elaborated by European Union experts to make people employable in the context of global crisis and labour market’s needs trans-

formation. The paper moves on two levels: the first, that of firms, presents results of some studies on the demand of competences in the short run in the services sector and, specifically, in that of green economy. The second level, that of individuals, presents some new tools aiming to support workers to evaluate the skill gap (O\*Net Interest Profiler, O\*Net Ability Profiler, O\*Net Work Importance Profiler) and undertake the right actions to become employable. Results highlight the limited efficiency of innovative digital tools, if they are not founded on systemic integration and social inclusion.

Keywords: employability, social dialogue, skill gap, job vacancies, green jobs, Information Communication Technologies

### ***Navigando in acque difficili. Sfide dell'occupabilità ed innovazioni metodologiche***

*L'articolo presenta gli strumenti sviluppati dagli esperti dell'Unione Europea per rendere impiegabili le persone nel contesto della crisi globale e della trasformazione dei fabbisogni del mercato del lavoro. L'articolo considera due livelli di analisi: il livello organizzativo e il livello individuale. Nella prima parte sono presentati i risultati di recenti indagini sulla nuova domanda di competenze nel settore dei servizi e delle professioni emergenti della green economy. Nella seconda parte sono presentati alcuni strumenti tecnologici introdotti dai modelli di analisi previsionale dei fabbisogni occupazionali e formativi al fine di sostenere lavoratori, imprese e soggetti in cerca di occupazione nel processo di auto-valutazione dello skill gap (O\*Net Interest Profiler, O\*Net Ability Profiler, O\*Net Work Importance Profiler). In ultima analisi l'articolo evidenzia alcune criticità legate all'efficacia di tali strumenti nell'ambito delle politiche del lavoro e per l'inclusione sociale.*

*Parole chiave: occupabilità, dialogo sociale, skill gap, job vacancies, green jobs, innovazione tecnologica*

### **Determining factors in the job search strategies: A multivariate analysis**

Silvia Ghiselli, Luca Pesenti

The hypothesis discussed on this paper is that there is a correlation between individual pro-activity (right from the educational stages) and the propensity to select the search methods used in the period of job seeking. The occupational incidence of resourcefulness attitude in young Italian graduates is here analysed starting with the strategies for using the various job search methods. We use original information drawn from a larger survey on a sample of about 5.800 people interviewed three years after graduation. A multiple correspondences analysis enucleates a number of factors that describe the degree of pro-activity and resourcefulness of young graduates. The performance of graduates are evaluated on the basis of a number of socio-graphic variables, of the university path and of the experiences carried during their studies. Finally, are identified the aspects that have the greatest impact on research strategies using a linear discriminant analysis, measuring the magnitude of the effect.

Keywords: new graduates; labor market; job search methods; activation; multiple correspondence; linear discriminant analysis

### ***I fattori determinanti nelle strategie di ricerca del lavoro: analisi delle corrispondenze multiple***

*L'ipotesi discussa in questo articolo è che ci sia una correlazione tra attivazione dell'individuo (fin dalle fasi di istruzione) e la propensione a selezionare i metodi di ricerca utilizzati nel periodo di ricerca di lavoro. L'incidenza occupazionale della propensione all'intraprendenza nei giovani laureati italiani è qui analizzata a partire dalle strategie di utilizzo dei vari metodi di ricerca di lavoro. Vengono utilizzate le informazioni originali tratte da una più ampia ricerca su un campione di circa 5.800 persone intervistate a tre anni dalla laurea. Un'analisi delle corrispondenze multiple evidenzia una serie di fattori che descrivono il grado di attivazione e intraprendenza dei giovani laureati. Le prestazioni dei laureati vengono valutate sulla base di un numero rilevante di variabili sociografiche, relative al percorso universitario e alle esperienze effettuate durante gli studi. Infine, gli autori identificano gli aspetti che sembrano avere il maggiore impatto sulle strategie di ricerca utilizzando una analisi discriminante lineare, misurando al contempo l'entità dell'effetto.*

*Parole chiave: neolaureati; mercato del lavoro; metodi di ricerca del lavoro; attivazione; corrispondenze multiple; analisi discriminante*

### **Looking for a Job Online. An International Survey on Social Recruiting**

Ivana Pais, Alessandro Gandini

The paper examines the use of social network sites as a new channel for job search and hiring, looking at the implications this has on candidates and recruiters. This will be done thanks to an online survey, conducted between March and June 2014, which collected responses from more than 17.000 candidates and 1500 recruiters from 24 countries and which includes a specific focus on the dynamics concerning Italy. The main questions this article tackles are: what kind of candidates and firms use social media in the recruitment process; what is the effectiveness of social media in the matching between supply and demand in the labour market; how candidates represent themselves online and how their digital reputation impacts on job search, potentially changing the role of social capital in social recruiting.

Keywords: social recruiting, digital labour, online reputation, online job search, social capital, Italy

### ***La ricerca online di un lavoro. Una ricerca internazionale sul reclutamento "social"***

*L'articolo analizza l'utilizzo dei siti di social networking come nuovo canale di reclutamento e selezione e le relative implicazioni per candidati e selezionatori. L'analisi si basa sui risultati di un questionario online, somministrato tra mar-*

zo e giugno 2014 a un campione auto-selezionato, che ha raccolto le risposte di oltre 17.000 candidati e 1500 reclutatori da 24 paesi e che comprende un focus specifico sulle dinamiche riguardanti l'Italia. Le principali questioni affrontate in questo articolo sono: che tipo di candidati e di aziende utilizzano i social media nel processo di reclutamento; qual è l'efficacia dei social media nell'incontro tra domanda e offerta di lavoro; come i candidati si presentano online e come la reputazione e il loro capitale sociale digitale possa influenzare gli esiti della ricerca di lavoro.

*Parole chiave: social recruiting, lavoro digitale, reputazione, online ricerca del lavoro, capital sociale, Italia*

### **Employability and job search during unemployment: An explorative study**

Emanuela Ingusci

Employability is defined as a psycho-social construct comprised of three dimensions: adaptability, career identity and human and social capital. Some scholars deal with employability from a person-centered perspective, independently from one's employment status. It means that one can be employable without necessarily being in employment. The psycho-social model has been applied in helping individuals to cope with unemployment as it can be used to assist them to recognize that their employability can be self-improved, despite the temporary absence of employment. Starting from this perspective, the aim of this paper is to explore the employability in a cluster of unemployed workers. Employability was found out to be positively related to job search behavior.

Keywords: employability, job search behavior, unemployment

### ***Occupabilità e ricerca di un lavoro durante la disoccupazione: uno studio esplorativo***

*L'occupabilità è definita come un costrutto psico-sociale che comprende tre dimensioni: adattabilità, identità di carriera e capitale umano e sociale. Alcuni studiosi considerano l'occupabilità come un concetto centrato sulla persona ed indipendente dallo status occupazionale. A tale proposito è stato sviluppato un modello psico-sociale finalizzato a supportare gli individui ad affrontare la disoccupazione: tale modello prende in esame diverse variabili come antecedenti dell'occupabilità e variabili come la qualità del reimpiego. L'obiettivo di questo articolo è di esplorare l'occupabilità di un campione di lavoratori disoccupati, considerando le attività sviluppate per agevolare la ricerca di un impiego. I risultati evidenziano una relazione positiva tra occupabilità e comportamenti di ricerca del lavoro. Sono discusse, inoltre, le limitazioni dello studio e le prospettive future di ricerca.*

*Parole chiave: occupabilità, comportamenti di ricerca del lavoro, disoccupazione*

## **New Graduates Social Capital: Nodes and Ties in the Transition from University to the Job Market**

Ivana Pais, Claudia Girotti

Granovetter first analyzed the role of interpersonal networks in the job market. It is useful to connect the general questions concerning the relation between social capital and employability to specific categories of candidates. In this paper we focus on graduates, who are facing growing difficulties of placement in the job market. What is the importance of social ties in the job placement of new graduates? What is the morphology of social networks that result effective in job searching? What are the characteristics of people who were used as contact by workers who are professionally successful and satisfied? To answer these questions a survey was led on a sample of Graduates of 2008, that was conducted via web between June and August 2012 and reached almost 6000 interviewed.

Keywords: employability, social capital, youth, social networks, graduates, job searching

### ***Il capitale sociale dei nuovi laureati: nodi e vincoli nella transizione dall'università al mercato del lavoro***

*Il ruolo dei contatti personali nel mercato del lavoro è stato portato all'attenzione degli scienziati sociali da Granovetter nei primi anni Settanta. Gli studi successivi hanno dimostrato l'importanza di declinare le domande di ricerca sulla relazione tra capitale sociale e occupabilità rispetto a specifiche categorie di candidati. Questo paper propone un'analisi sui laureati, che stanno affrontando difficoltà crescenti di inserimento nel mercato del lavoro. Qual è l'importanza delle relazioni sociali nell'inserimento lavorativo dei neolaureati? Qual è la morfologia delle reti sociali che risultano efficaci nella ricerca di lavoro? Quali sono le caratteristiche delle persone-di-contatto che hanno permesso ai candidati di trovare lavori soddisfacenti? Per rispondere a queste domande è stato somministrato un questionario via web a un campione di laureati del 2008, l'indagine è stata realizzata tra giugno e agosto 2012 e ha raccolto quasi 6mila risposte.*

*Parole chiave: occupabilità, capital sociale, giovani, reti sociali, laureati, ricerca del lavoro*

### **Analysing the role of human capital in sustaining employability in later life: A comparative study**

Daniele Zaccaria, Emma Garavaglia

The combination of institutional variables defining different welfare and productive regimes lead to different degrees of inclusion of older workers in the labour market and to different degrees of protection of older workers from work-related risks deriving from the globalization process. Moreover, the institutional setting also influences the degree of significance that individual characteristics have in shaping employment biographies in later life. By adopting an institution and individual-centered approach, the paper analyses the most critical characteristics

that sustain older workers' employability and employment performance, from a cross-national perspective. In particular, it focuses on the role of human capital. Applying longitudinal models to SHARE data we estimate the effect of three different dimensions of human capital (educational level and informal training) on older workers' employability and employment performance in different institutional contexts.

Keywords: older workers, human capital, education, employability, job tenure, welfare regimes

### ***Analisi del ruolo del capitale umano e dell'occupabilità nella vita matura: studio comparativo***

*La combinazione di variabili istituzionali che nel complesso definiscono differenti regimi produttivi e di welfare è all'origine di livelli differenziati di inclusione dei lavoratori anziani nel mercato del lavoro e di protezione degli stessi dai rischi di instabilità occupazionale, conseguenti al processo di globalizzazione. Inoltre, tale combinazione influenza altresì la capacità delle variabili di caratterizzazione individuale di influenzare i percorsi di fine carriera. Adottando un approccio che considera al contempo le variabili istituzionali e le caratteristiche individuali, il contributo analizza le variabili più significative nell'influenzare l'occupabilità e le performance occupazionali dei lavoratori anziani, da una prospettiva comparativa. In particolare, il focus è sul ruolo del capitale umano. Applicando tecniche di analisi longitudinale ai dati SHARE, viene stimato l'effetto di alcune variabili di capitale umano (educazione e formazione informale) sull'occupabilità e la performance occupazionale dei lavoratori anziani in diversi contesti istituzionali.*

*Parole chiave: lavoratori anziani, capitale umano, educazione, occupabilità, esperienza di lavoro, regimi di welfare*

### **Rethinking learning and people development in the 21<sup>st</sup> century: The Enhanced Reality Lab – e-REAL – as a cornerstone in between employability and self-empowerment**

Fernando Salvetti

Our world today is “glocal”, liquid, networked, virtual and polycentric. The shift from traditional mass media to a system of horizontal communication networks organized around the Internet and wireless communication has introduced a multiplicity of communication patterns at the source of a fundamental cultural transformation. The 21<sup>st</sup> century world is different from that for which the principal education systems were designed. It is not possible anymore to continue offering education in the traditional way. New educational trends are disrupting traditional attitudes towards current models. While the 19<sup>th</sup> and the 20<sup>th</sup> centuries were, in education, mainly about standardization, the 21<sup>st</sup> century is about visualization, customization, cheapification, gamification and some other relevant trends highlighted in the article. Today we are experiencing increasingly

global interconnections, associated with some growing local and localized differentiations, as well as we are living a continuing transformation organized around information technologies – that is changing the way we produce, consume, behave, manage, communicate and think. In such a scenario, which are the key-competencies and capacities to be honed in order to foster employability? Which education and training approaches are the most effective? A cornerstone in between employability and self-empowerment is then introduced to the readers: e-REAL.

Keywords: “Glocal” world, trends, key-competencies, learning, people development, e-REAL

### ***Ripensare l'apprendimento e lo sviluppo della persona nel XXI secolo: il laboratorio della realtà aumentata “e-REAL” quale punto d'incontro tra occupabilità e auto-valorizzazione***

*Il mondo dei giorni nostri è “glocal”, liquido, interconnesso, virtuale e policentrico. Il passaggio dai mass media tradizionali a un sistema di reti di comunicazione parallela incentrata su Internet e sulla comunicazione senza fili ha portato ad una molteplicità di modelli di comunicazione che costituiscono la base di una trasformazione culturale fondamentale. Il mondo del XXI secolo è diverso da quello per il quale i principali sistemi educativi furono disegnati. Pertanto un'offerta formativa basata su metodi tradizionali non è più possibile. I nuovi trend educativi stanno modificando le posizioni e il modo di vedere gli approcci ancora di uso corrente. Mentre nel XIX e XX secolo l'educazione si fondava principalmente sulla standardizzazione, il XXI secolo è focalizzato su concetti quali visualizzazione, personalizzazione, riduzione dei costi, ludicizzazione così come su alcune altre tendenze analizzate nell'articolo. Oggi ci troviamo di fronte a un aumento delle interconnessioni globali, associate a crescenti differenziazioni locali e circoscritte, mentre al contempo sperimentiamo una continua trasformazione basata sulle tecnologie dell'informazione: tutto ciò cambia il nostro modo di produrre, consumare, agire, comunicare, pensare. All'interno di un simile scenario, quali sono le competenze chiave e le capacità da perfezionare al fine di promuovere l'occupabilità? Quali sono gli approcci educativi e formativi più efficaci? Quindi ai lettori viene presentato e-REAL: fondamento e pilastro che collega occupabilità e self-empowerment.*

*Parole chiave: mondo “glocal”, trend, competenze-chiave, learning, sviluppo delle persone, e-REAL*

### **Dealing with complexity in a simple way: How visualization boosts understanding in learning process. The Z Generation case**

Barbara Bertagni, Sophie Salvetti

In today's world, the ability to assimilate and apply knowledge effectively is a key competence very relevant for employability. In the knowledge age, people need to be able to learn quickly and incessantly. As educators, we have to rethink tools, methodologies, setting and pace in education in order to really help people improving their competencies all life-long. Interactive edugraphics combining knowledge visualizations, illustrations, text, and images together are an inter-

esting and engaging way to effectively facilitate learning people from different fields, cultures, cognitive styles, level of knowledge. Visualization is a powerful approach both for general education and for training. Especially when we face the education of the young people growing up in the digital world, visualization is strategic – as highlighted by the case of a Zed Generation girl, Sophie (that also co-authored a paragraph of the present article). The educational approach for the 21<sup>st</sup> century needs to be more learner-centered, interactive, customizable, blended – combining activities technology-based and experiences in a team, like in the flipped classroom. In such a scenario, augmented reality tools are becoming very relevant – like in the e-REAL labs that are briefly introduced.

Keywords: Z Generation, e-REAL lab, interactive edugraphic, knowledge visualization, flipped classroom, visual learning

### ***Affrontare la complessità in modo semplice: come la visualizzazione può migliorare la comprensione nei processi di apprendimento. Il caso della Generazione Z***

*Nel mondo odierno l'abilità di acquisire ed applicare il sapere in modo efficace è una competenza chiave molto rilevante per l'accesso al mondo del lavoro. Nella società della conoscenza, le persone devono essere capaci di imparare rapidamente ed costantemente. In quanto educatori, dobbiamo ripensare gli strumenti, le metodologie, il setting ed il ritmo in ambito educativo per riuscire davvero ad aiutare le persone a potenziare le loro competenze lungo tutto l'arco della loro vita. Gli edugraphics interattivi – che combinano visualizzazione della conoscenza, illustrazioni, testo ed immagini – sono un modo interessante e coinvolgente per facilitare il processo di apprendimento di persone provenienti da diversi ambiti, culture, con differenti stili cognitivi e diversi livelli di competenza. La visualizzazione è un approccio straordinario sia per l'educazione generale che per la formazione professionale. La visualizzazione è uno strumento strategico, soprattutto nei processi educativi indirizzati alle giovani generazioni cresciute nel mondo digitale – come evidenziato dal caso di Sophie, ragazza della generazione Z (che è anche coautrice di un paragrafo del presente articolo). L'approccio educativo È opportuno che nel XXI secolo l'approccio educativo sia centrato sulla persona che apprende, interattivo, personalizzato – integrando attività basate sulle tecnologie ad esperienze in gruppo, come nel caso dell'insegnamento capovolto. In questo scenario, gli strumenti legati alla realtà aumentata sono sempre più importanti – come nel caso dei laboratori e-REAL che sono brevemente presentati.*

*Parole chiave: Generazione Z, e-REAL, edugraphic, visualizzazione della conoscenza, insegnamento capovolto, apprendimento visuale*

## **Education for Life and the InnovationGym**

Alfonso Molina

The 21<sup>st</sup> century is presenting unprecedented challenges to human development. Rapid advances in science and technology are having a widespread impact

in all walks of life from jobs, industry, finance to education, health and leisure. Add to this, the tendency towards systemic crises affecting the financial and economic systems and we find ourselves in a dynamically complex environment where uncertainty, unpredictability, challenges and opportunities are the norm rather than the exception. This complex world demands a new type of education; an education that equips people to face the challenges they will find along their lives. This paper calls it education for life and discusses both (i) its fundamental tenets and (ii) the main features of a physical-virtual environment for its realization. This environment is called Phyrtual InnovationGym and is part of the strategic work of the Fondazione Mondo Digitale, Rome, within the Italian school system. The InnovationGym represents both: (1) an environment to realize the concept of education for life, and (2) a mechanism to stimulate a gradual systemic innovation across the Italian school system.

Keywords: human development, education for life, physical-virtual learning setting, Phyrtual InnovationGym

### ***L'educazione per la vita e l'InnovationGym***

*Il XXI secolo presenta sfide senza precedenti per lo sviluppo umano. I rapidi progressi nella scienza e nella tecnologia esercitano un impatto esteso a tutti gli ambiti dell'esistenza, dal settore lavorativo, industriale e finanziario fino all'educazione, la sanità e il tempo libero. In aggiunta, la tendenza a periodi di crisi sistemiche che colpiscono i sistemi finanziari ed economici: siamo costretti a vivere in un ambiente dinamico e complesso in cui l'incertezza, l'imprevedibilità, le sfide e le opportunità non sono un'eccezione ma una realtà comune. Questo mondo complesso richiede un nuovo sistema educativo, che renda le persone in grado di affrontare le sfide a cui dovranno far fronte nel corso della loro vita. Il presente saggio lo definisce educazione per la vita e tratta sia (i) i principi fondamentali sia (ii) le principali caratteristiche dell'ambiente fisico-virtuale necessario alla sua realizzazione. Tale ambiente viene chiamato "Phyrtual InnovationGym" (Palestra dell'innovazione) e forma parte del lavoro strategico della Fondazione Mondo Digitale di Roma all'interno del sistema scolastico italiano. Esso rappresenta sia: (1) un ambiente in cui realizzare il concetto di educazione per la vita, sia (2) un meccanismo in grado di stimolare la graduale innovazione sistemica nel sistema scolastico italiano.*

*Parole chiave: sviluppo umano, educazione continua, spazio di apprendimento fisico e virtuale, Phyrtual InnovationGym*

### **Embracing Immersive learning, from schools to workplaces**

Domenico Zungri

Since their inception, digital media inspired a great potential in both school education and professional training. Today, Millennial kids are exposed to internet and video games since early childhood: and while they use them with great confidence, it's still a "consumption" of messaging and entertainment

services. However, it is possible to tackle the *medium* towards a smarter and more creative approach: which combines the emotional strength of cinematic storytelling, the presence and immersion of virtual reality, and the intense interaction of video games. Purpose of this paper is to briefly highlight the context of current techniques, technologies, strategies and practices in the creation of immersive multi-sensorial experiences, for both educational and training applications. The paper also analyzes the new jobs needed in the labour market in order to develop immersive contents, and how the Immersive Labs project by the Digital World Foundation, Rome, is tackling the challenge to stimulate youth towards new career opportunities in this pioneering field.

Keywords: virtual reality, augmented reality, mixed reality, holographic projections, immersive learning, interactive storytelling, serious games, gamification, cognitive neurosciences, business simulation

### ***Scegliere l'apprendimento immersivo, dalle scuole ai luoghi di lavoro***

*Fin dal loro arrivo, i media digitali hanno ispirato un grande potenziale sia nell'educazione scolastica, sia nella formazione professionale. Le ragazze ed i ragazzi nati in questo millennio – i cosiddetti Millennials – sono esposti a internet e videogiochi sin dalla prima infanzia: ma sebbene li usino con gran confidenza, si tratta sempre e solo di un 'consumo' di servizi di messaggistica e intrattenimento. Tuttavia, è possibile riorientare questo uso del medium verso un suo utilizzo più intelligente e creativo: che combini la potenza emozionale della narrazione cinematografica, la presenza e l'immersione della realtà virtuale, e l'intensa interazione dei videogiochi. Lo scopo di questo documento è di illustrare brevemente il contesto delle attuali tecniche, tecnologie, strategie e pratiche, nella creazione di esperienze immersive multi-sensoriali, per applicazioni educative e formative. L'articolo descrive inoltre le nuove professionalità richieste sul mercato del lavoro per sviluppare contenuti immersivi, e come il progetto Immersive Labs sviluppato dalla Fondazione Mondo Digitale di Roma sta affrontando la sfida di stimolare i giovani verso le nuove opportunità di impiego in questo settore pionieristico.*

*Parole chiave: realtà virtuale, realtà aumentata, realtà mista, proiezioni olografiche, apprendimento immersivo, narrazione interattiva, serious games, gamification, neuroscienze cognitive, simulazione d'impresa*

### **Soft Skills for the Next Generation: Toward a comparison between Employers and Graduate Students' Perceptions**

Chiara Succi

Fast changing environment entails several reflections about skills and attitudes required to face the increasing complexity brought by the “glocal, liquid and networked” world in which workers operate. Considering “declarative knowledge” as a commodity, due to the easier access to content (research engines, online universities, MOOCs, etc.), what does make the difference? Languages and digital literacy are clearly cited as key competences, but a more indistinct

need about interpersonal skills and personal characteristics is drawn in the literature. A literature review addressing and structuring this issue is presented in the paper. Based on different studies a list of relevant attributes has been built and a research has been designed. A panel composed by managers of multinational companies and business school graduate students will be asked about new recruitment criteria and first job challenges. Soft skills will be assessed through a survey supported also by qualitative data (i.e. one-to-one interviews and focus groups) and by a comparative analysis. Comparison of data will indicate important areas of action for education institutions, HR managers, and leadership development organizations.

Keywords: soft skills, interpersonal skills, leadership, transversal competences, employability, next generation

### ***Le soft skills per la prossima generazione: una comparazione tra percezioni degli imprenditori e dei laureati***

*La società in cui viviamo cambia rapidamente e richiede una riflessione sulle competenze e attitudini che permettano di affrontare la crescente complessità portata da un mondo del lavoro più “liquido, connesso e globale”. Considerando la “conoscenza dichiarativa” sempre più vicina a una commodity per via del facile accesso ai contenuti (motori di ricerca, università online, MOOC, ...), cosa fa la differenza? La padronanza delle lingue e la competenza digitale sono sicuramente citate come conoscenze chiave, ma dalla letteratura emerge anche il bisogno di acquisire maggiori qualità umane e interpersonali. In questo paper è presentata un’analisi della letteratura che approfondisce e articola questo tema. Partendo dagli studi esistenti, è stato costruito un indice di soft skill rilevanti ed è stato disegnato un progetto di ricerca. Infatti, un gruppo di manager di aziende multinazionali e un gruppo di studenti neolaureati saranno intervistati rispettivamente sui nuovi criteri di selezione introdotti in azienda e sulle prime sfide professionali. Le soft skills saranno valutate attraverso un questionario supportato da dati qualitativi (interviste e focus group) e da un’analisi comparata. I risultati indicheranno importanti aree di lavoro per istituzioni educative, HR manager ed enti formativi per lo sviluppo della leadership.*

*Parole chiave: soft skill, interpersonal skill, leadership, competenze trasversali, occupazione, prossima generazione*

### **Visual Thinking and Literacy Development: Teaching Poetry by Visualization**

Aurora Luna Santos-Olmo

The United Nations Educational, Scientific and Cultural Organization (UNESCO) defines literacy as the ability to identify, understand, interpret, create, communicate and compute, using printed and written materials associated with varying contexts. Literacy involves a continuum of learning in enabling individuals to achieve their goals, to develop their knowledge and potential, and to participate fully in their community and wider society. Images are among the best and most powerful

media. By visual thinking, we are succeeding when the medium becomes the message: that is the case with visual poetry and with literacy development by teaching poetry accordingly with the guidelines from the LKN's projects delivered within the e-REAL labs. That is the reason why in the paper are analyzed the interrelation between image and literature, focusing on poetry. Poetry is the more difficult genre – or at least the less given – to use visuals like a relevant component. Visuals are relevant both in the process of creation, where image works together with the written text creating a different artistic language and opening a new hermeneutic dimension, as well as in the understanding-reception, where image's function is like a useful tool to teach poetry in a classroom.

Keywords: visual thinking, literacy development, poetry, success stories

### ***Pensiero visivo e accrescimento delle competenze di base: l'insegnamento della poesia tramite immagini***

*L'UNESCO definisce 'literacy' come l'abilità di identificare, comprendere, interpretare, creare, comunicare e calcolare utilizzando materiali scritti e stampati correlati a differenti contesti. La 'literacy', ovvero l'accrescimento delle competenze di base, riguarda un processo continuo di apprendimento che abilita le persone a raggiungere i loro obiettivi, ad accrescere sia le loro conoscenze che le loro potenzialità, così come a partecipare pienamente alla vita sia della loro comunità di appartenenze che alla società intesa in termini più. Le immagini sono tra i migliori e più potenti mezzi di comunicazione. Tramite il pensiero visivo, otteniamo risultati positivi quando il mezzo diventa il messaggio: è il caso della poesia visiva e dell'accrescimento delle competenze di base promossi tramite l'insegnamento della poesia, in conformità alle linee-guida dei progetti di LKN realizzati all'interno dei laboratori e-REAL. Per questa ragione, nel presente saggio analizzo l'interrelazione tra immagini e letteratura, concentrandomi sulla poesia. La poesia è il genere più difficile, o perlomeno quello meno incline a utilizzare gli elementi visivi come componenti fondamentali. Gli elementi visivi sono rilevanti sia nel processo di creazione, in cui l'immagine s'intreccia al testo scritto, creando un linguaggio artistico differente e aprendo una nuova dimensione ermeneutica, sia nel processo di comprensione-ricezione, laddove la funzione dell'immagine funge da strumento utile per l'insegnamento della poesia in classe.*

*Parole chiave: pensiero visivo, sviluppo dell'alfabetizzazione, poesia, storie di successo*