

Employability & Competences

Innovative Curricula for New Professions

edited by
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TABLE OF CONTENTS

INTRODUCTION: THE PROJECT FROM BEGINNING TO END AND BEYOND <i>Monica Fedeli, Vanna Boffo</i>	XI
PART I RESULTS OF RESEARCH THROUGH THE 5 PATHWAYS	
CHAPTER I THE DEVELOPMENT OF CALLING DURING COLLEGE: A 3-YEAR INVESTIGATION	
The Role of Mentors on the Development of Calling in Students: a 3-Year Investigation <i>Anna Dalla Rosa, Michelangelo Vianello, Barbara Barbieri</i>	5
The Pursuit of Happiness: a Reflection on the Calling Construct <i>Barbara Barbieri</i>	19
CHAPTER II ENGAGING STUDENTS IN HIGHER EDUCATION AND FACULTY DEVELOPMENT	
The Student Voice in Higher Education and the Implications of Promoting Faculty Development <i>Monica Fedeli</i>	25
The Design of Work-Related Teaching & Learning Methods: Case Studies and Methodological Recommendations <i>Daniela Frison</i>	37

CHAPTER III
THE INTERNSHIP EXPERIENCE AS A LEARNING MOMENT IN
HIGHER EDUCATION

Supporting Informal Learning in Higher Education Internships 51
Claudio Melacarne

Higher Education and Work-Related Learning from
Professionalism to Professionality 65
Maura Striano

CHAPTER IV
GUIDANCE AS A PEDAGOGICAL TOOL

Guiding at University. The Protagonists' Point of View 77
Francesco Lo Presti

Self-Telling to Orientate Oneself 91
Bruno Rossi

Guidance Specificity in Educational Research. Criticisms and
Area of Intervention in Higher Education 103
Antonia Cunti

CHAPTER V
EMPLOYABILITY AND TRANSITIONS

Employability and Transitions: Fostering the Future of
Young Adult Graduates 117
Vanna Boffo

Non-linear Paths in Transitions through the Labour Market 129
Paolo Federighi

PART II
THE PERSPECTIVES OF THE PEDAGOGICAL COMMUNITY

CHAPTER I
DIDACTICS

The Voice of Teachers Involved in School-Work Alternance
Programmes 151
Concetta Tino

NON-LINEAR PATHS IN TRANSITIONS THROUGH THE LABOUR MARKET

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1. Transitions, efficiency and fairness

Since the Seventies, the idea that the production system requires people with good levels of higher education has gradually gained ground in public policies. Over this same period, the higher education systems of many countries have expanded rapidly. This has had significant and profound impacts on labour markets and in the way in which employers use highly educated labour. «These expansions have, for the most part, been predicated on the assumption that more education is good for individuals and for society as a whole, not only in terms of economic outcomes like wages or employment, but also for a wide range of social outcomes like improved health, reduced crime and higher well being» (Machin, McNally 2007: 5).

In more recent years, the OECD has focused government strategies further by shifting the emphasis from the quantity of accesses, to the quality of the learning outcomes of investment in higher education: «Labour market relevant knowledge and skills drive and support economic growth, innovation, and the evolving needs of the labour market» (OECD 2017: 16). The number of years of study or the certification acquired are still considered relevant, but only on condition that these correspond to a satisfactory level of professional skill that meets the needs of the labour market.

This approach has inspired strategies to reform higher education systems and has strengthened the request for more coherence «between the level of (graduate's) skills and the skills required at work» (OECD 2017: 16) as for closing the gap between university and industry.

The traditional education model based on transmitting knowledge in the various fields of study has started to change in favour of a model that advocates the development of competences.

The introduction of a competence-based approach in the defining and preparation of the learning outcomes is probably the most distinctive feature of the current university reform and is closely linked to the en-

hancement of graduate employability, given that it gives a higher profile to and involves their professional ability and its applicability in the workplace (Coromina Saurina, Villar 2010: 24).

Consequently, the entire process of educating students has become an object of study and modifications: from guidance in upper secondary schools, education and training during the period of study, to the transition to the labour market. The success of the transitions to the labour market is no longer left to individual destinies. The mechanisms and dynamics that regulate them have been made visible, their logic studied, and then refocused through corrective actions.

The outcomes of higher education are not identified simply with the skills possessed by graduates, but by the quantity and quality of «graduates who are part of the labour force. They include employment status, earnings, and the match between the level of their skills and the skills required at work, etc. Outcomes also take account of graduates who are not enrolled in further schooling, and are not part of the labour force» (OECD 2017: 16).

Possession of the skills requested is not enough to justify personal and social investment. What counts is the employment status, the wage premium, and the timeframe within which these results are achieved. The devices that accompany the transitions should therefore be corrected by reducing the impact of the invisible factors that favour those with an exclusive social and family background, and promote integration into the labour market irrespective of merit. If not, the mechanisms accompanying the transition of graduates towards the world of work will only strengthen and aggravate the university's social reproduction.

Expansion of the access to higher education has dealt a blow to the very automatisms of industrial society, the direct relationship between school and factory. Companies too have abandoned the old business school models and their function of induction. In the past, the mechanisms to be activated were relatively simple. The routes were linear, as were the automatisms that ushered people towards a relatively predictable and stable professional future.

Nonetheless, the automatisms have not been replaced by an equally linear transition process that ensures a place in the labour market after the studies are over. The linear segmentation into three synchronized phases (study, job matching between demand and supply, employment) recurs infrequently. The transitions are non-linear. There is no longer a proportionality between the actions put in place and their effects, i.e. between entering a study course and the subsequent passage to employment. According to some studies (Burke, Threadgold, Bunn 2017), the absence of linearity is related in a unique way to the paths of university students from historically under-represented backgrounds when they transition as graduates into an insecure labour market.

Therefore, deepening knowledge of the paths that characterize the process of transition from higher education to work helps to understand what mechanisms to put in place to reduce the negative impact of a graduate's socioeconomic status, and to restrict higher education's social reproduction systems (Harrison 2017). Clarifying the terms of the non-linearity of transition paths lets us understand the types of measures (activities and services) to introduce, how to relate these to processes that will professionalize students, when to activate them (at the end of the university career or during the study course), and how to evaluate their impact.

The Emp&Co research undertook to contribute to studying the factors that promote university students' transition to work. A part of the research activity has been devoted to a longitudinal study of the ways in which Educational Science graduates manage their own professionalization strategies in the first two years after the end of their university studies. The choice of this segment of the population aimed to collect new facts on the numerous ways in which the processes of professionalization and transition to the labour market operate in different academic sectors. This type of study is known to be rare. At the same time, this is a sector that belongs to the field of 'education' and therefore to one which, according to all the studies, ensures a wage premium that is considerably lower than other sectors, both in the short term and considering cumulative earnings over 20 years (OECD 2017: 55). Most of all, this is a cluster for which in countries such as Sweden, «the lowest return has been estimated (the others include Religious Studies, Psychology and Mathematics/Natural Sciences)», but in others, such as Spain «a negative return is estimated for graduates with degrees classified as 'other social sciences and humanities'» (Machin, McNally 2007: 23). Therefore, a study of the processes that affect graduates in extreme situations should enable us to better understand the factors of exclusion and inequality which could affect graduates in all the professional sectors most exposed to the risk of a mismatch, not due to a lack of competence, but to their socioeconomic status.

2. Professional growth paths

The interpretation of the set of professional growth paths for Educational Science graduates shows the presence of three driving forces that guide individual activities:

1. Collection of information on the potential labour market and on how to establish a coherent professional profile
2. The gaining of professional certification (with the function of signaling) and the enrichment and visibility of professional potential
3. Gradual building of independence in life and work.

We are using the term ‘driving forces’ and not ‘steps’, since there is not a temporal succession between these three components. If anything, it is a matter of objectives undergoing constant evolution, which those concerned work on synergistically, albeit with differentiated strategies and levels of effectiveness (Boffo 2017; Torlone 2017).

To achieve these objectives, while carrying out their university studies, the students follow paths characterized by:

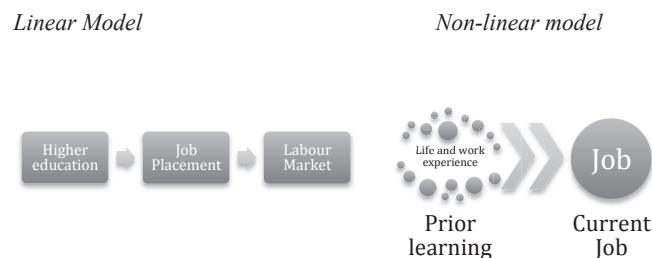
- a commitment of various kinds to work activities (in addition to internships)
- participation in vocational training activities
- building of «dynamic learning networks» (Reich, 1991).

At the end of university studies, the paths are divided further with:

- breaks from every type of formative and professional commitment
- further developments in the building of «dynamic learning networks»
- participation in structured activities targeted directly at job placement
- the beginning of the path to develop a professional career with transitions from the first, to the second, and the third employment contract (again within the 18-month period considered by the research).

The individual paths differ in the combination of the main types of activity (study-work-networking-idleness), beyond the rhythms of their duration and succession. Entry into the labour market and professional growth are not the result of a linear process followed with discipline, in which each step is based on proportionate effects produced by the previous one. It is instead the result of a set of learning outcomes acquired through diverse types of activity (including those carried out in higher education) on which the new job is founded.

Figure 1 – Two interpretive models.



Interpreting professional growth paths using a non-linear model means attributing a value to each type of life and work experience had by the students; it means that the development of a professional career is the result of a set of learning outcomes (prior learning). From an educa-

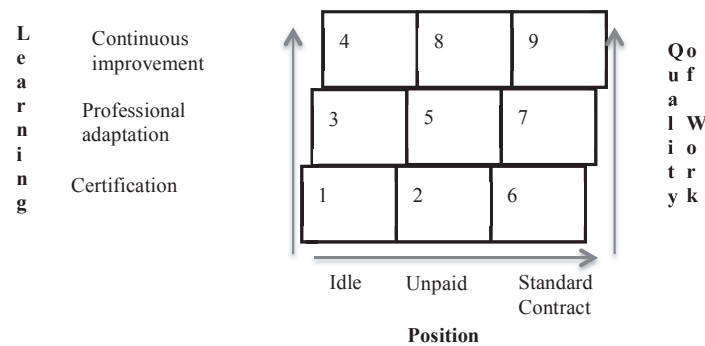
tional perspective, the achievement of a first employment contract and then subsequent ones is interpreted as the result of what was learned in formal education, through individual dynamic learning networks, the educational and cultural infrastructures accessed, and experiences of work (whether paid or unpaid). The Emp&Co research allowed us to observe in the graduates' professional growth paths, the following four types of educational activity:

- Formal education comprising the customary academic path enriched by internships, study abroad, and participation in research. Both during studies and after graduation we can observe the tendency to return to further training of a professional kind. This may be directed to strengthening areas of competence not covered by the university offering, to acquire knowledge of new professions, or to build new networking relationships.
- The building of networking relationships and dynamic learning networks occurs in all professional growth paths with a positive outcome. Accessing networking and strengthening it seems to be related to graduates' family backgrounds and a capacity for autonomous initiative in the creation of new social and professional networks (associations and business). As well as constituting a hub of opportunity, networking represents a context in which it is possible to achieve mutual learning and swap knowledge.
- Access to and use of educational and cultural infrastructure and services appears to be a further component present in numerous growth paths of graduates. This is a factor that has been investigated only marginally. Access to services and programmes provided by youth policies proved of use in the cases found (e.g. Youth Guarantee Programmes). What remains to be investigated further is the recurrence and importance of the use of digital infrastructures as well as generic cultural ones (from the library, to the museum, music, and so on), both for their function of direct access to information on the labour market, and their mediated function of skills development and the creation of networking.
- Lastly, work proves to be part of the opportunities that work culture had already generated before university studies ended. Work is simultaneously the expected result and the means through which the students develop their ability to learn and produce new knowledge. The opportunity to move from one job to a different and better one could be interpreted as the fruit of prior learning accumulated through the different educational activities participated in.

Therefore, the detectable differences in individual paths which emphasize the non-linearity of the trajectories can be attributed to the quality of the opportunities enjoyed. To explain the stasis or change found

in the individual paths observed, we could use a descriptive model that combines the various positions covered (idleness or non regular work, unpaid employment, standard contract), with varying levels of educational quality potentially expressed by the activities the graduates participate in (certification; vocational training, services, and networks; continuous improvement processes through joining soft or hard innovation projects). Figure 2 shows the existing relationship for new graduates between educational activities, position, prospects for growth in the quality of work, and the expectation of moving to a new job. The weights assigned to the individual boxes have a purely indicative value and correspond to the probabilities found to progress towards a better position. Position number 9 is considered the most advantageous, since it is open to new positions.

Figure 2 – Learning activities and new graduates' positions.



3. Professional growth and development at work

In the context of the Emp&Co research, work, as a means for personal education and an end for its realization, is treated as a priority since it is a resource for personal growth. Other aspects, although relevant (e.g. the ROI from university education) were not investigated.

From this perspective, the most significant factor to consider is the workplace learning potential, in other words, what can be learned by a worker covering a specific productive position at a given location. We are referring to the learning processes that are part of the productive activities of everyday life.

The research showed how the characterizing data (the mode) consists of:

- possessing regular work experience coherent with the type of studies carried out,

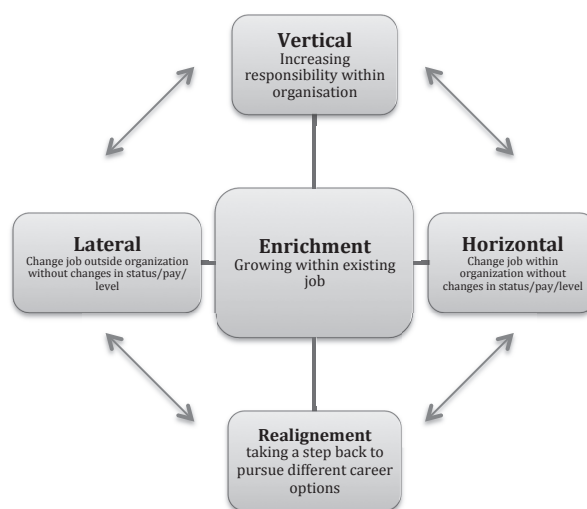
- being employed when the interview was carried out,
- having had more than one job experience.

All the graduates had passed through small casual jobs and then moved towards positions related to identified and defined professional profiles.

Vertical and horizontal mobility, also towards economic sectors (agriculture, tourism, commerce) not coherent with the training received united all the subjects examined. The cases of vertical mobility involved a passage towards more qualified professional roles, or towards forms of contracts with greater guarantees.

The voluntary termination of an employment contract is an experience common to all employees, and is connected to the choice of: assuming an entrepreneurial role, changing organization, or returning to education. In Fig. 3 we describe the five possible directions the professional mobility of new graduates can take.

Figure 3 – Career Lattice. [Adapted from: Young, B., Ladder vs. Lateral Career Paths, in *Career Development Toolkit*, 2011, <<http://www:hrmcareerdevelopment.blogspot.it>>]



The dynamism that appears after the end of university is particularly intense and expresses itself in an active search for new career prospects with a willingness to change professional contexts and roles. From an educational standpoint, this behaviour can be attributed to two factors: the process of building professional identity, and an increased ability to read the positive or negative signs of the workplace learning potential.

The process of *building professional identity* intensifies with the possession of additional information on the potential labour market and the maturing of new expectations with respect to previous work experi-

ences. The comparison between past and future potential is probably an accelerator of the beginning of the process that leads new graduates to engage in the building of their own professional identity. Since these are professions exposed to constant evolution, and persons simultaneously engaged in distinct roles and tasks, the task of building «meanings that individuals attach to themselves in the context of work» becomes even more complex. In fact, this commitment – starting from their personal attributes, membership of social groups and professional roles – leads individuals to give «meaning to who they are and what they do in the workplace» (Caza, Creary 2016: 4).

Whether we are talking of professional identification (as a state of being that explains how individuals view themselves vis-a-vis their profession – Caza, Creary 2016: 7), or of the process of building professional identity (the way in which individuals have the agentic role of creating their own professional self-image – Caza, Creary 2016: 7), in both cases, graduates are prompted to redefine their professional identity both because of prior learning, and fresh job opportunities.

Furthermore, two further elements must be considered, due to the particularity of the professional group of reference for Educational Science graduates. This, more and better than other professional profiles, helps to understand the phenomenon of transforming the boundaries of traditional professions, of their hybridization, and of another two phenomena that affect young people: the high probability of not only changing jobs more than once during their career, but also of changing profession, plus the gradual spread of the phenomenon of multiple professional identities linked to the simultaneous employment of persons in two or more jobs. This is a phenomenon that is not limited to those who take the entrepreneurial road or choose to be freelance, but also those who are self-employed. The idea of a single-profession career is becoming outdated. Many professional workers today are not simply acquiring one set of specialized skills and knowledge, but instead are accumulating multiple sets of skills, and applying these in quite distinct ways (Caza, Creary 2016: 13).

The *workplace learning potential* is a factor towards which the attention of skilled workers is increasingly turning, and which is also used to explain the attraction for low-wage premium study paths. This is the same dynamic to which individual professions and careers/professional identities are exposed, making the workplace the setting to build their own professional growth, and not only in terms of career development. The Emp&Co research shows that it is not only the expectation of a wage premium that determines the decisions of students and graduates. The Employee Value Proposition (Minchington 2010) is an element that better explains present and expected job satisfaction, and that motivates the high propensity to occupational mobility found in the research. Within

this frame is the evaluation of learning potential of a workplace, definable as “the power of a work setting to integrate learning at work with the result of behavioural changes and the generation of new knowledge. Such a workplace offers accessible information, opportunities to learn, and real support by peers and managers” (Nijhof, Nieuwenhuis 2008). On this basis, it makes sense to assume that students and graduates with some work experience develop perception and knowledge of the learning mechanisms present in a workplace and are driven to assess their relevance in relation to expectations of professional growth. Thus, their choices can be guided by an assessment of each of the factors that are included in the workplace learning potential:

- The strategic dimension, i.e. the development prospects of an organization, objectives for growth in the medium and long term.
- The organizational dimension, i.e. the richness of cultural containers, the knowledge accumulated by the organization, its level of structuring, its definition of management processes and innovation (Vicari 2008).
- The existing distributive rules which regulate access to knowledge of the organization and to their creation: timeframes, ways of cognition, and the types of process people are engaged in (Eraut 2007), the possibility of creating endogenous know-how producing new knowledge in relation to the product, customer, market, and process that the organization needs.

4. Employability and restriction of higher education institutions' reproductive functions

The traditional educational model based on the transmission of knowledge in the different fields of study does not have as its benchmark an image of the student and graduate corresponding to the professional identity and prospects found.

Enhancing the relationship between students and their labour market is a challenge that requires universities to unavoidably adapt and modernize their educational offering: «One of the main objectives of higher education is to provide its graduates with the skills needed to succeed in the labour market» (OECD 2017: 9).

It is well known that access to the labour market is determined as much by economic factors (the state of the economy, labour market regulation, the existing stock of skills), as by the graduates' characteristics. Studies on the impact of factors such as ethnicity, gender (for the earnings gap compared to men), socioeconomic status (family background and quality of networking), age, or disability, show how each play a role in the labour market and can affect the market outcomes for certain graduates.

Research similar to that of Emp&Co carried out in Australia (Burke, Threadgold, Bunn 2017) shows “how social and cultural differences (e.g. socioeconomic status, gender and ethnicity) and inequalities (e.g. of access to and participation in HE and paid work) «are not only interrelated, but are bound together and influenced by the intersectional systems of society (Collins 2000: 42). [...] This lens helps to uncover how socioeconomic status is bound together with social and cultural differences in the educational and work structures».

Other research shows that the social background often produces a durability of disposition that is not easily dismantled or modified in and through university contexts. This is what emerged from a study carried out on the functions of higher education in Jordan and Egypt (Assaad, Krafft, Salehi-Isfahani 2014):

Family background, gender, and geography, and to some extent secondary school performance, appear to play a much larger role in labour market outcomes, even in this select group of graduates, than the type or quality of their higher education institutions. This suggests that the labour markets do not in fact reward skills, or do so to a very limited extent, so that neither higher education institutions nor students have any reason to seek out the type of higher education that builds productive skills (Assaad, Krafft, Salehi-Isfahani 2014: 16).

Changing the function of the university’s social reproduction does not depend on measures taken at the level of organizational and teaching models. Yet it can be restricted through strategies that mitigate the effects and enhance efficiency, by acting, for example, on the period of adjustment, the time it takes for a graduate to become effective in the workplace. This means putting the university in a condition to train «transformative employees», «people who can use higher-level skills, such as analysis, critique, synthesis, and multi-layered communication to facilitate innovative teamwork» (Harvey 2003: 11). The task of the university is not then limited to facilitating the meeting between demand and offer of employment, «in essence, the emphasis is on developing critical, reflective abilities, with a view to empowering and enhancing the learner. Employment is a by-product of this enabling process» (Harvey 2003: 3).

5. Measures to support employability

The gulf between the university and the world of work makes the definition of students’ investment choices and career more problematic and open to risk, especially for those who are inequitably located in navigating their aspirational journeys (Harrison 2017).

The success of the transitions to the labour market is not attributable solely to the quality of individual self-improvement projects. «Those without access to supportive social, economic and cultural capital and the readiness to negotiate transitions effectively are typically those who require these capacities the most» (Billett, Thomas, Sim, Johnson, Hay, Ryan 2010: 484). In these cases, but not only, the success of the transitions also depends on the willingness and ability of higher education system to adopt practices and behaviours that help develop labour market-relevant knowledge and skills. But to be able to train students, it is necessary that individual universities engage in paths of institutional learning that will enable the same university to learn how to transform themselves and create their own new social identity and their new positioning with respect to the labour market. The construction of a process of capacity building at university involves governance interventions based on policy levers to enhance labour market relevance. At the system level, these results are obtained with governmental policies that act: on the criteria for *funding* universities; on *regulations* and on the rules that govern the everyday life of businesses, organizations and students; on *information strategies* to influence the behaviour of students and higher education institutions; on *activation of the organizational resources* of the various public agencies (from ANVUR to the various ministerial bodies) to help achieve their goals by steering or influencing higher education systems.

There are however practices and behaviours that do help develop labour market-relevant knowledge and skills, which universities can adopt as a learning process and organizational change that are relatively autonomous with respect to the action of governmental policy levers.

Below, we examine a selection of some of the measures consistent with the Emp&Co research results, whose effectiveness is confirmed by studies carried out at an international scale (OECD 2017: 64-74) relating to the following final considerations:

1. THE CAPACITY OF HIGHER EDUCATION INSTITUTIONS TO RESPOND TO LABOUR MARKET DEMAND

This depends above all on the ability to offer relevant study programmes. The availability of human resources (i.e. academic and support staff), and physical infrastructure have a significant impact, and depend on local choices (selection of personnel, investments).

2. INFORMED STUDENT CHOICE

The students' choice of study must be able to rely on existing information. Guidance activities must focus on providing information on genuine employment prospects. The students' choices must not be influenced by the need of individual universities to increase their number of

enrolments. Information on employment prospects is a service that must be ensured throughout their career, also to help reshaping their choices.

3. STUDENT ADMISSION POLICIES AND PRACTICES, AND ACADEMIC SUPPORT FOR STUDENTS

The procedures by which students are admitted and supported in their studies can also make a difference in the relevance and quality of the skills developed and this ultimately affects labour market outcomes. Students who are selected by higher education institutions based on previous strong academic results and completion of relevant pre-requisite subjects (at secondary school or through other tertiary education) are more likely to succeed in higher education (Hiss, Doria 2014).

4. CURRICULUM DESIGN AND DELIVERY

«The curriculum is at the core of higher education learning: in any field of study, a well-designed curriculum is an important step towards ensuring that students develop good skills that position them for labour market success» (OECD 2017: 67). The construction of curricula is exposed to the challenge of the dynamics of transformation of professional groups, of the hybridizations of various profiles, their constant changes, and of various forms depending on organizational contexts. The answer to this problem can only partially be entrusted to continuing education provided after the end of university studies and in workplaces. To this must be added the fact that the idea of a single-profession career is becoming outdated. Part of the disciplinary knowledge provided will not only become quickly obsolete, but also irrelevant with respect to the sundry figures and professional roles that students will be required to interpret.

The interdisciplinary response, not based on a mere juxtaposition of curricula in different disciplines, could constitute an effective launchpad for curriculum design. However, it clashes with both the prevalence of organizational models based on the separation between disciplines, and with the lack of information on the future of the professions. In a national economic structure dominated by small- to medium-sized enterprises, forecasts of the skills demand for the medium to long term are scarce.

5. LEARNING AND TEACHING AND DELIVERY OF CURRICULUM

«The ways in which the curriculum is delivered can also play an important role in generating high quality skills that support good labour market outcomes for higher education graduates. The traditional approach to higher education teaching has long been for an experienced academic to provide a lecture that “imparts knowledge” to students» (OECD 2017: 71). Teaching practices based on the lecture-based model are known to be ineffective. They do not take account of the fact that higher education institutions operate with adults, who normally work, and already

have their own background knowledge and experience. In short: they do not consider how adults learn. The problem also concerns innovations in teaching, the use of technologies that are by now a part of people's daily life. However, this limit can be overcome with the use of typical adult education methods (e.g. group activities, oral presentations, problem-solving scenarios) as they are developing professional and technical skills. The education of 'transformative employees' – i.e. people who are entrusted daily not only with tasks of mere execution, but the creation of new knowledge of products, organization, processes, and markets – is mainly realized through the method of delivering the curriculum.

6. WORK-BASED LEARNING AND WORKPLACE LEARNING

The Emp&Co research shows how the education of students also depends on the learning potential of their current job. The work-based learning provided by curricula must therefore also communicate with workplace learning processes in which the student participates.

Participation in quality work-based learning (sometimes known as work-integrated learning) can improve labour market outcomes. There are several types of work-based learning processes in higher education. These include field experience, mandatory professional practice, co-operative education placements, internships, applied research, project learning and service learning. Graduate apprenticeships have recently re-emerged as another way of combining work and academic studies to enable people to 'earn-as-they-learn' (OECD 2017: 73).

Participation in workplace learning processes puts the student in a position of dynamic interaction with the learning factors present at their own workplace. This may be a limiting factor, given that their image of work is determined by current experiences and their quality. At the same time, they constitute a wealth of theoretical, methodological, and practical knowledge, on which the student can exercise their critical-transformative skills, bringing innovation to this context. Moreover, the students are constantly exposed to a benchmarking exercise that puts them in the condition to give meaning and evaluate the theoretical and practical experiences offered by the curriculum. For the university, this means learning to deal with the work experiences and cultures the students bring, and to manage and steer the learning processes that they generate.

7. INTERNATIONALIZATION

The development of the international dimension of educational pathways makes it possible to deal with labour markets other than local ones. The prospect of working abroad for a period of their lives, and thus being confronted with different national labour markets, is an opportunity that is gradually extending to all professional groups. The exclusive relation-

ship between the university and the local economy covers an increasingly limited proportion of educational and research activities. «Undertaking part of a higher education programme in another country can enable students to develop important transversal skills and thus support good labour market outcomes» (OECD 2017: 72). Studying abroad helps students expand their knowledge of other societies, languages, cultures, and business methods, and develop cross-cultural competencies and sensitivities. These skills, in addition to the resiliency demonstrated by exiting one's comfort zone to pursue education in a foreign setting can send a strong signal to employer about the employability of graduates (OECD 2013).

8. CAREER ADVICE AND SUPPORT

The results of the Emp&Co research show that the functions of career advice and support may not be concentrated on the moment of transition between higher education and the labour market since these transitions are non-linear, and because many of the students already have a job before completing their studies. The expected function is to foster the transition towards a new job, possibly of a better quality than the previous one. Career advice is emerging as a function relevant to all the measures listed above. It is a by-product of them. As Jääskelä & Nissilä argued (2015): «Pedagogy and guidance services (*are*) a systemic entity». It is however questionable whether this type of service can be limited to students, or if even universities should behave like other stakeholders of learning, and provide a 'post-sales' career advice service. As part of the Emp&Co research, the delivery of this type of service to graduates was tested. A final consideration is that this is an initiative that is sustainable and coherent with the ethics and values of a contemporary university. The service could play an even more significant role if all university teachers provided students with the contacts and information in their possession relating to the production world that they cooperate with.

This function is also accompanied by career services.

Many higher education institutions now provide career services or career centres to help students connect with prospective employers. These centres assist students by helping them apply for jobs, write their curriculum vitae or resumé, and prepare for job interviews. They also provide students with access to employers by organising job fairs and employer visits to campus, and by distributing employer postings for work-based learning opportunities and post-graduation employment opportunities. Increasingly, they also provide counselling and advice related to new skill sets that are important both for getting a job and for succeeding in workplace and to develop entrepreneurial skills (OECD 2017: 74).

The need for specialized support services exists primarily to perform the functions of guidance, coordination, quality assurance, and network-

ing of the system. In fact, the set of activities described above constitutes a system integrated with all the functions of teaching, research, and universities' third mission, which requires its own body of strategic planning and management.

6. Conclusion

Transitions to the labour market are also dependent on the recruitment traditions, methods, and tools used by enterprises. The weakness of the systems currently in place is under debate. In 2016, France Stratégie estimated that the cost of inequalities in accessing qualified work is not far off €150 billion, due to wasted talent, unemployment, and idleness, a misallocation of human resources (Bon-Maury *et al.* 2016).

The research is making efforts to define new mechanisms that might reduce the technical inefficiencies and cultural weaknesses of the current ones. The aim is to go beyond the use of CVs, certificates, and the gut instinct of recruiters. To this end, the research has focused on recent applications of machine learning coupled with increased access to data, raising the possibility of improving hiring decisions with the help of algorithms (Danieli *et al.* 2016; Hoffman 2015).

Meanwhile, civil society is making efforts to promote non-governmental initiatives that can bring young people into contact with enterprises.

University research should participate more directly in the study of technologies and organizational forms that could help higher education institutions rid themselves of outdated cultures and ideologies and solve the setbacks that prevent them from fulfilling their role.

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