

REVISITING THE USE OF SKILLS AT WORK OF YOUNG GRADUATES IN NEW HIGHER EDUCATION INTERNATIONAL CONTEXTS

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Abstract

The challenges that higher education institutions currently face can justify the progressive effort to create international partnerships that promote the exchange of resources, experiences, skills and academic training. The Eunice consortium – European University of Customised Education, to which the Polytechnic Institute of Viseu belongs, is a good example of this dynamism, sharing resources and promoting, in a cooperative way, training provision, student mobility and scientific research. In this reflection, we use a Eunice report to revisit, in a longitudinal perspective, the data collected over the last two decades at the Polytechnic Institute of Viseu. The main concern of these investigations (2011; 2021) was to analyze the transition processes of young graduates to work and the relationship between the higher education obtained and the work performed, allowing us to verify the applicability of skills in a work context and the conditions and characteristics of the jobs. The objective is to reevaluate these results by comparing them with the current needs highlighted by the local job market and simultaneously contribute to an active institutional reflection and adaptation of the training offer to these new indicators and needs.

Keywords: Higher education, internationalization, skills, labour market, graduates.

1 INTRODUCTION

The growth of higher education in Portugal over the last decade and a half has been substantial, bringing new challenges for graduates to find good jobs and employers qualified young people with the skills they need. These difficulties require new responsibilities and challenges to university and polytechnic teaching institutions, specifically the effective perception of the needs of the labor markets, considering the new economic contexts, knowledge and skills. This vision of education has been intensified after the Covid-19 pandemic period, especially with the development of new information and communication technologies, which have profoundly transformed how we work, especially in the most qualified professions.

However, “(...) geopolitical tensions as well as persistent and broadening inflation triggered frequent and aggressive moves by central banks. Consequently, the post-pandemic economic and social recovery remains incomplete and new vulnerabilities are eroding progress in social justice. On the back of strong jobs growth, both the unemployment rate and the jobs gap have declined below pre-pandemic values.” [1] (p.11). The connection between education and the knowledge society faces a profound reformulation with new social challenges, “(...) is evident that the number of traditional graduate jobs has not increased at the same pace as the number of graduates and that class bias continues to be present in access to the elite universities and to the higher reaches of the labour market.” [2] (p.1):

The literature on this issue has been concerned with understanding whether graduates are well matched to their jobs, indirectly referring to the level at which the acquired skills are used by employers. In this reflection, we intend to approach the relationship between diplomas and employment from a longitudinal perspective, with a view to establishing new institutional parameters in terms of collaboration between higher education institutions, which often share perceptions, difficulties and objectives.

2 NEW INSTITUTIONAL CONTEXTS AND SKILLS

The European Universities initiative is a program that establishes alliances between European higher education institutions with the primordial objective to benefit students and staff, as well as wider society. By developing long-term structural, strategic, and sustainable cooperation this initiative intends to improve the international competitiveness of higher education institutions and promote scientific trends, values and identity. The European University for Customised Education (EUNICE) is a transnational alliance of public universities founded in 2020 and is currently present in ten countries: Belgium, Finland, France, Germany, Greece, Italy, Poland, Portugal, Spain, and Sweden. The mission requires many elements to come

together for its realization. We have identified one important element as the identification and integration of competencies and skills that are outlined in the educational provisions of the alliance.

These competencies are very important for institutional academic offer and pedagogical performance, but also to the European Union's vision and policy objectives. Over the past 10 years, some studies and diagnoses have been carried out about competencies and skills needed for the work market in Portugal. The scenario in the labour market in Portugal, in line with the European partners, is in constant update and change, a reality that increased with the pandemic of covid-19, transforming dramatically the way we live and work requiring us to be flexible and adaptable to different scenarios [3].

Table 1. Eunice key skills

	<i>Description</i>
Problem solving	The ability to identify and define problems, generate solutions, evaluate the options and to implement the chosen solution.
Teamworking	The interrelated abilities that help individuals cooperate effectively in group settings, including emotional intelligence, communication and negotiation skills.
Communication	The ability to convey both verbal and written information clearly between individuals and groups and to adapt formats and contents to different audiences and purposes.
Self-management	The ability to organise and carry out activities without direct supervision, to be able to take responsibility, to set priorities independently and to act strategically and ethically.
Cognitive flexibility	The broad range of abilities that enable individuals to adapt to, and act effectively in, new or unexpected situations, to bring problem-solving abilities to bear and to find creative solutions.
Digital competence	The ability to use digital technologies critically and responsibly for learning and work. This could range from data visualisation and basic programming skills to data engineering, understanding and writing algorithms, and analysing large data sets.
Technical competence	This could include specialised and sectoral expertise (i.e. knowledge and methodologies required in a specific profession), as well as the practical ability to use and handle technical equipment.
Global intercultural competence	This encompasses foreign language skills, the knowledge required to understand how global society functions, the ability to interact effectively and appropriately with people from different cultural backgrounds, and also to collaborate with them to find solutions to global problems.

Source: Eunice (2024) [3]

The transition from the qualifications model to the competencies model marks the evolution from an industrial world of standardized production and rules to a world where the progressive competition requires the flexibilization of the organization models and of the professional's relations and directives. The services and products are more personalized, requiring specific production and work situations, to respond to the progressive changes of production and consumption conditions. The concept of competence reflects a new dynamic reality, a process that only effectively becomes observable and applicable in practice and represents a functional and contextualized concept [4,5].

The fact that an individual has knowledge and skills does not mean that they are competent, and they must know how to mobilize and materialize them in a specific work situation. Given that knowledge, know-how and behaviors are diverse, heterogeneous and multiple, the worker must have the ability to select which one or ones to use, in different circumstances and according to needs. Being competent therefore means, firstly, knowing how to act and react; represents an operational applicability, but also a social one. In a work relationship, competence implies knowledge and emotional, social and cognitive components, and proves a profound change in the work organization model, based on the notion of position [6].

Overall, we can conclude that there are two main types of skills: universal/transversal skills and technical/specific skills [7,8]. In relation to the universal/transversal skills we highlight social competences (loyalty, integrity; tolerance, appreciating of different points; getting personally involved), communication competences adaptability (broad general knowledge; cross-disciplinary thinking/knowledge; written communication skill) and personal competences (accuracy, attention to detail, working under pressure, power of concentration, time management). In relation to the technical skills we emphasize in-field specific competences (field-specific theoretical knowledge, field-specific knowledge of methods), analytic competences (analytical competences; problem-solving ability reflective thinking, assessing one's own,

creativity), operative skills (manual skill; fitness for work; working in a team leadership), competences leadership (assertiveness, decisiveness, persistence, taking responsibilities, decision, initiative, negotiating), organizational competences (economic reasoning, applying rules and regulations, planning, coordinating and organizing, understanding complex social, organization) and special competences (foreign language proficiency, computer skills) [9].

More recently interpersonal and emotional skills emerge like a set of attributes and characteristics that influence the way we relate to others, and hard skills, that focus in technical and specific abilities related to knowledge and competences in a particular area [10]. Several international organizations highlighted the following competences as the ones needed to the future: critical thinking; leadership spirit; adaptability; emotional intelligence; problem-solving; digital skills; management skills; teamwork; assertive communication; ongoing self-learning; resilience, flexibility and stress tolerance; user experience orientation; cultural awareness and expression and science, technology, engineering and math skills.^[3] International organizations highlight the importance of the following skills in the future of work: critical thinking; leadership spirit; adaptability; emotional intelligence; problem-solving; digital skills; management skills; teamwork; assertive communication; ongoing self-learning; resilience, flexibility and stress tolerance; user experience orientation; cultural awareness and expression and science, technology, engineering and math skills [11,12].

According to Portuguese reality, companies point to the following as the three most valued skills in the workplace: working with people; adapting and responding to change; dealing with pressure and setbacks, while digital literacy stayed in the 14th position in the ranking, which is divergent to previous trends [13].

We can perceive in the literature that the challenge of establishing a relationship between the skills of graduates and those skills that are effectively valued in the job market is progressively increasing. In the attempt to educate 'plug in and play' workers, universities have tried to breach the boundaries between education and the labour market by emphasizing the tenuous concept of 'generic skills' or soft skills such as problem solving, team working and communications. Indeed, in rhetorical terms it is possible to see how these 'skills' can bridge the education-economy divide but there are questions to be raised about such skills." [2] (p.7).

3 METHODOLOGY

This analysis is based on a longitudinal perspective, supported by three different databases (2011, 2021, 2024) to allow a critical reflection of the relationship between training and employment, from a more contemporary perspective. Given the similarity between these analytical models, the objective is to compare the skills most valued by employers and young graduates at work. Despite the limitations that this may implicate, given the new international contexts of the Polytechnic Institute of Viseu, it is justified to revisit this data base from our previous studies, to understand the future challenges that the inclusion of the EUNICE consortium could imply.

The 2010 data [14,15] was supported in an online survey applied to the 2009 graduates, in a total of 111 valid surveys. The 2021 data [16,17] was also supported in an online questionnaire survey applied to the 2019 and 2020 graduates, in a total of 195 valid surveys. In both samples, collected to highlight perceptions about the relationship between academic formation and employment, we used the typology [18] and the results [19] regarding the valorization of skills in the exercise of work. Both samples were random and not probabilistic, statistical analyses of both were carried out using SPSS statistical package program.

The 2024 data [3] was supported in an online survey for regional stakeholders with the aim of identifying the key competences valued in the labour market. Most of the companies have their headquarters in the district of Viseu (89% of the respondents were small/medium enterprises and 12% corresponded to large companies). A sample was used for the survey in a total of 167 regional enterprises/entities, 41 valid surveys were collected. Table 2 shows the direct relation between these theoretical models used.

Table 2. Skills correspondence

2009 Skills valued and used in work by graduates (N:111)	2021 Skills used in work by graduates (N:195)	2024 Skills valued by Entreprises (N:41)
Adaptation capacity Planification and organization Autonomy	Planification and organization Autonomy	Taking responsibility The ability to act in a situation of uncertainty Ability to find and interpret signals of change in the organisation's environment.
Group/teamwork Negotiation capacity	Group/teamwork Negotiation capacity	Teamwork Collaboration
Communication	Communication and interpersonal relation	Communication skills Emotional intelligence Tension reconciliation and problem solving (requires consideration of the interests and values of others)
Critic capacity Demand of information and availability to the job Flexibility and initiative	Critic capacity Flexibility and initiative	Problem-solving abilities Cognitive flexibility (ability to behave in new, unexpected situations) Critic capacity Criativity
Information and communication Basic technological skills	Information and communication Basic technological skills	Basic digital skills (use of computer programs, searching for information online, using social media, using online banking, posting own content online)
Innovation Capacity of work Availability to training/specialization Application and recognition of technical skills	Availability for innovation Demand for knowledge/ information Specific/Technical skills Availability to training/specialization Application and recognition of technical skills	Technical expertise in their field Specialized and sectoral skills Advanced digital competences (range from data visualization and basic programming skills to data engineering, understanding and writing algorithms, analysing large data sets)
Foreign language skills Relational capacity and cultural integration at work	Foreign language skills Relational capacity and cultural integration at work Recognition and appreciation at work	Foreign language skills Cross-cultural skills

The data presented in the previous table show two different movements that support the conceptual framework of this competence issue. On the one hand, there are significant similarities in the respective theoretical frameworks relating to the skills most valued by the labor market in the three chronological moments. On the other hand, the most significant variations are the evident evolution in the information and communication technologies areas, the progressive valorization of emotional skills and, more recently, the emergence of the advanced digital skills, which the proliferation of artificial intelligence is the most evident example.

4 RESULTS

Starting with the data collected in 2009, young graduates reported that the skills they valued most at work were: negotiation skills, information and communication technologies skills and specific technical skills in their respective scientific areas. On the contrary, the least valued were the capacity for initiative/criticism, the capacity for decision-making and the capacity for adapting to change. When confronted with the skills they used at work, they emphasized: flexibility and initiative, relational capacity and cultural integration at work, the level of information seeking and availability for employment. In relation to specific skills in their technical aspect, the low representation of the applicability and recognition of academic qualifications in terms of work performance was highlighted, and in terms of executive skills, the mastery/use/understanding and appreciation of specific technical-conceptual language in the execution of work.

It was possible to establish a direct relationship between these results and the quality of the job performed (profession, functions, job stability and working conditions), the evident low investment by employing institutions in the training of their employees, these contexts could be related with the precariousness of work for young graduates [3]. This situation was corroborated by the low representation of functional skills, namely autonomy and decision-making in the exercise of work, which was not very consistent with the functions or designations of the professions of young graduates (low use of skills such as innovation, initiative, autonomy, change, decision-making, negotiation and use of foreign languages at work).

At the same time, the use and valorization of relational skills, essentially by graduates with better working conditions show a greater availability and autonomy in the search for information, contrasted with the low significance of communication and training skills and the recognition of the diploma at work level (even on the part of graduates who performed more qualified functions and closer to their area of academic training), evidencing a movement of overeducation. The fact is that graduates tend to evaluate the importance of certain skills more highly than their use.

In 2021, we returned to analyzing these issues in a new empirical context. Graduates were questioned about the aspects they most valued in carrying out a work activity. The aspects that obtained bigger representation were the relational capacity and the cultural integration, availability for innovation and demand for knowledge/information, flexibility and initiative and professional recognition and appreciation. The aspects with lower representation in graduates' answers were the use of foreign languages, the search for information and availability for employment, the applicability and recognition of academic qualifications, mastering/understanding and valuing technical language and the availability for training/specialization. These results reveal a clear proximity to those presented previously, once again demonstrating the relevance of the type of professional situation that young graduates had. We also asked graduates about the representations of work and the conditions they most valued in a job and, again, the results corroborate previous trends. Only good remuneration conditions obtain positive values. All the remaining indicators obtained negative evaluation: having an international dimension, the possibility of occupying a position with qualifying training, being innovative, carrying out a variety of tasks, responsibility, the possibility of creating/innovating, autonomy, teamwork, employment in the training area, compatibility with academic training, contractual stability, being recognized as a competent professional and the possibility of career progression. The deep economic crisis that emerged because of the covid 19 pandemic may dramatically affect the economy, work and social life, especially during the various confinements applied, which may have affected the perspectives of respondents.

On the other hand, regarding the main results in relation to the most valued characteristics in 2024 by the enterprises/managers during the selection and recruitment process, foreign languages and intercultural skills have the highest representation. In relation to the cognitive skills dimension, they considered that problem solving ability is the most important skill, immediately followed by cognitive flexibility and critical thinking; creativity is the skill with the lowest representation. In the social skills dimension, all respondents highlight that the teamwork/collaboration are important in the work context, followed by the communication skills and the emotional intelligence. These opinions are in line with the previous point (need of flexibility and adaptation capacity). Concerning specialized and digital skills, all enterprises understood the importance of the basic digital skills, no matter the economic sector, which is in line with Portuguese and European trends. Technical expertise and competence in their field, transformative skills, taking responsibility, problem solving and the ability to act in a situation of uncertainty were the most valued skills by all respondents

We can assume that the results point to a difference in work perspectives by graduates and companies. If, in the case of graduates, the positions reflect the working conditions that characterize their professional situation, companies ideally seek the skills that they most value and need, regardless of their field of activity. However, the characteristics of the regional business may directly influence the perspectives presented, and the fact that there is a clear significance of small and medium enterprises may explain the valorization of certain skills to the detriment of others.

5 CONCLUSIONS

Despite the importance of specialized and technical knowledge, companies tend to value soft skills, which confirms [21] that emotional and social competence are central in the XXI century. More recently, some of the comments and reflections shared by enterprises reflect the existence of a divergence between the demands of the market and training: the need to underline mastery of specific tools, communication skills and responsibility; the need for students to have more resources and information

to define their academic path and more autonomy in choosing their projects, in order to promote their independence; the need to reinforce professional experience and adjust curricular internship process agendas to companies needs to better accommodation of interns and the need for recent graduates to form, present and defend their own ideas [3]. The competences gaps identified by the stakeholders in the newly graduates [13] and the relation between academic training programs and labour market needs is constantly changing.

However, the rapid evolution and volatility of the world does not allow academic institutions to answer in the expected time, and we must be honest, the role of the education programs are overfocuses, very often, on the graduate's future professional issues. The fact is that we live in an uncertain and ambiguous environment, so, soft skills like adaptability, flexibility, resilience, critical thinking and problem-solving are essential. "Skills that reflect the important role of technical proficiency, strong interpersonal abilities, emotional intelligence, and a commitment to continuous learning demonstrate respondents' expectation that workers must balance hard and soft skills to thrive in today's work environments." [22].

At the same time, the globalization process increased the demands of digital skills, internationalization, multiculturalism, networking, and languages knowledges. All these challenges affect graduates, families, enterprises, governments and international institutions at worldwide level. Currently the main core skills cited by employers are analytical thinking; resilience, flexibility and agility; leadership and social influence; creative thinking; motivation and self-awareness; technological literacy; empathy and active listening; curiosity and lifelong learning; talent management and service orientation and customer service [22].

We have verified that, globally, all the skills mentioned by graduates and employers are very similar. Thus, we also show that there are skills that are mentioned simultaneously by graduates and enterprises (flexibility, initiative and relational/cultural capacity), proving their relevance. Regarding graduates, there are some similarities in their attitudes and opinions on the least valued skills (autonomy, negotiation skills, application and recognition of technical skills, availability for training/specialization and language skills). These results allow us to consider, once again, that there exists a discrepancy between the position of employers and graduates. This situation reflects the distance between the realities analyzed: employers always objectively demonstrate their needs, consistent with their branches of economic activity, market volatility and competition; graduates always reflect their perception of their qualifications and skills considering professional expectations, profession and work reality. These two perspectives reflect the difficulty of the relationship between academic training and employment.

Even in vocational education, with many academic courses having a curricular internship, there is a significant difficulty between what supports the academic curriculum and the real needs of enterprises. However, it is important to note that, more than the specific skills of the different academic areas, it is urgent to rethink the relevance of training the soft and emotional skills of young students, which currently play a central role in the inevitability of instability, volatility and precariousness that very often characterize the professional trajectories of young graduates. Therefore, all the data, analyses and academic studies are very important in this process, but we must all be aware that the main concern of higher education, in terms of education targets and skills of the students, cannot be the business sector needs. We must continue to try to adapt training to these contexts in the best possible way, but above all, we must also prepare young people from a human, social, communicational and emotional point of view, so that they can face a progressively more unpredictable professional future.

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