Aveiro Labour Observatory

Digital competences for the future

Human capital is the factor that allows companies to use technology more efficiently, an essential element in today's society and in the new organization of work.

Digital transformation is not just about implementing new technologies. Digital tools are one of the edges of this transformation that must be followed by a digital mindset. If people who use technology on a daily basis are not committed to digital transformation, it major impacts in the organizations and in the markets will be lost.

Digital skills refers to the ability to use technology along with skills to optimize processes, making them increasingly efficient. The range of competences that are required both for existing and new occupations is expected to change across sectors, transforming both the workplaces and the way people performs their jobs. New competences are needed, especially the so-called transversal competences, that are acknowledged to be necessary to complement technical competences. Interestingly, the results of the consultation carried out with companies in the sectors of ICT, Tourism / Services and Industry support that transversal competences are indispensable for an adequate implementation of new technologies.

Among the competences that have been highlighted by the companies involved in the studies conducted by the Observatory are autonomous learning, time management and the ability to solve complex problems. Therefore is important to develop adequate qualification to support the adoption of technologies. This new scenario requires a change in the entire education and qualification system, as well as a requalification of professionals, "pressured" by the difference that can be created between the speed of change and the speed of learning, so that they feel more integrated in digital transformation.

The mission of the Labour Observatory is to contribute to a prospective view of Aveiro's qualification needs, providing systematically, to citizens, education and training entities, as well as to companies and other stakeholders, information on the competences needed in the labour market for digital transformation, increasing employment opportunities and competitiveness in the region.

> " Specifically, investment in human capital is the necessary mechanism to execute technological progress in a sustainable manner "

Competences for the digital transformation of the economy in the Aveiro region. What priorities for industry?

Pursuing the goal of identifying qualification priorities in Aveiro, the team of researchers from the University of Aveiro that is part of the Labour Observatory conducted, on February 20, a new workshop that brought together 16 companies representing the local industry. Among the different industrial sectors represented, the ceramic industry, plastics and foundry stand out, among others.

The workshop was hosted at the premises of AIDA - Chamber of Commerce and Industry of the District of Aveiro, and had the collaboration of INOVA-RIA and the Municipality of Aveiro, partners of the Aveiro STEAM City project, directly involved in the work of the Labour Observatory.

This workshop follow the track of previous workshops conducted in 2019 with TICE and Tourism and Services companies, also held at the facilities of different stakeholders in Aveiro, including the Creative Science Park (PCI), UNAVE, and the Parque de Exposições de Aveiro.

The digital transformation in industry is already a reality. The term industry 4.0 results from the certainty that we are experiencing a fourth industrial revolution. This term is used to define the trend is associated with the concept of smart factories, which relates and articulates virtual and physical systems that, combined with digital networks and platforms, will lead to the development of radically different value chains.

The adoption of new technologies requires rethinking the role of professionals and equipment, their functions, their responsibilities and their autonomy. These changes are taking place in a context in which the digitization and automation of many processes is generating increasing volumes of data that will be fundamental for decision-making and streamlining the responses of the productive systems in a faster and more flexible way. This promise, however, will only be realized if companies are able to qualify their human capital for the new performance contexts. In this sense, the workshop participants were invited to communicate their vision about the needs for qualification and requalification for the sustainability of the digital transformation in Aveiro, not only in the technical scope, but also in what concerns transversal skills, known as soft skills and which are fundamental to the successful performance of professional activities.

The participants were practically unanimous regarding the need for qualification in the areas of Big Data and data analysis. Other areas highlighted included automation and artificial intelligence, as well as competences related to sustainability.

The Observatory's next steps include conducting interviews and questionnaires to various entities, which will help to consolidate the results and will serve as a basis for the training programs to start this year.

Digital transformation and the jobs of the future

The digital transformation will require a review of the roles of professionals and technologies in production systems. How these changes will transform occupations and the future of work is a topic yet to be discovered. According to recent reports on this topic, made available by entities such as the World Economic Forum, the OECD and the European Union, many of the jobs we know today may disappear, giving way to completely new ones, or will be completely changed. The good new is that with the transformation and the expected change in occupations, the future points to completely new paths, possibilities and professional competences.

The Workshop held with companies in the industrial sector representing the region of Aveiro on February 20, was a great opportunity to resume one of the concerns of the Labour Observatory: how will the digital transformation impact the jobs of the future?

Workshop participants were asked to identify the professions for which they anticipate an increase in demand, due to the digital transformation in their industries. This exercise was based on a list of 15 professions, presented in Graph 1, which are currently mentioned in several reports on digital transformation and the future of work and qualifications, as emerging professional areas, for which a great demand is being projected.

Graph 1 - Professional areas of the future, in the context of the industry
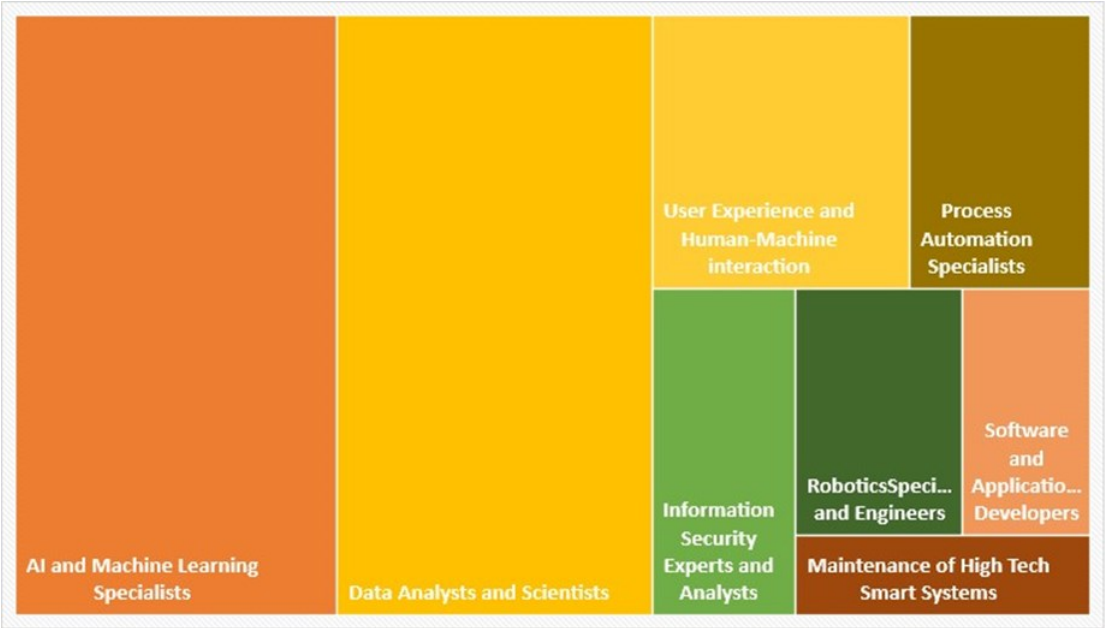
Source: Professions identified in the WEF and OECD reports. Original data collected at the industry workshop (20/02/2020).

From the initial list of professional areas, 8 stand out, which in the perception of industry representatives in Aveiro who participated in the workshop, seem to be particularly important for the future of the region (Graph 1). Among these, 4 are highlighted that received the highest importance scores in the workshop, including AI and Machine Learning Specialists, Data Analysts and Scientists, User Experience and Human Machine Interaction and Information Security Experts and Analysts.

The most sought after professions in the future will require answers in terms of the qualification and requalification of professionals in the region, including actions in terms of technical skills, as well as the so-called transversal and behavioral skills.
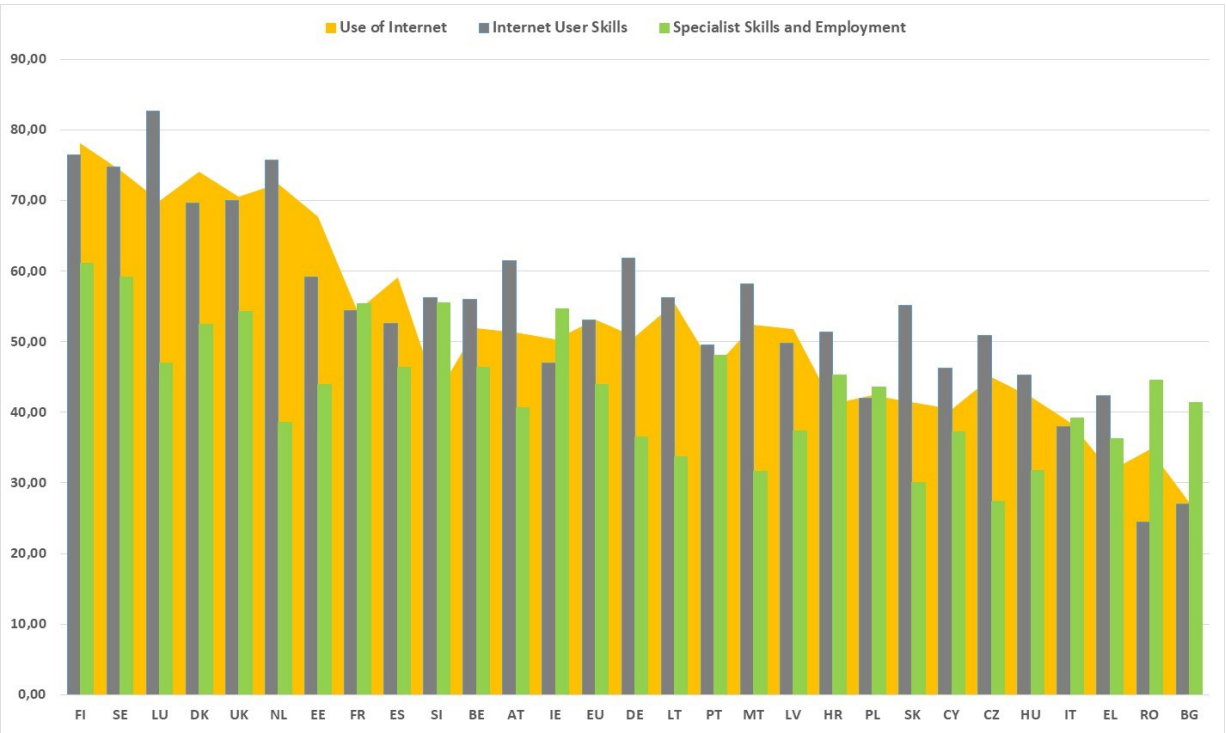
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Did you Now?

The participation of women in the digital sector, areas related to ICT (Information and Communication Technology) and STEM (Science, Technology, Engineering and Mathematics) fields has decreased in recent years in Europe, according to the study Women in Digital, published by the European Commission. According to the study, the most digitally competitive EU countries are also leaders in the participation of women in the digital economy. Finland, Sweden, Luxembourg and Denmark have the best results when it comes to women's participation in the digital economy. The disparities between men and women, however, persist at EU level in the fields of Internet use, digital skills, ICT skills and employment, with the greatest inequalities in the latter: only 17% of ICT specialists are women and women still earn 19% less than men. In addition, only 34% of STEM graduates are women, a figure that needs to be increased in the coming years. Portugal occupies the 17th place: Rank: 17, Score 46.9 (EU: 49.1).

In light of the study's findings, the European Commission outlined strategies to increase women's participation in the digital sector, focusing on eliminating digital gender stereotypes, promoting skills and digital education. The Commission's Women in Digitak (WID) scoreboard also monitors women's participation in the digital economy. The panel assesses the performance of Member States in the areas of Internet use, skills of Internet users, as well as specialized skills and employment based on 13 indicators. From 2019, the panel Women in Digital (WID) has become an integral part of the Digital Economy and Society Index (DESI).

Graph 2—Women in Digital (2019)

Source: Eurostat.

To learn more about the Urban Innovative Actions: https://www.uia-initiative.eu/en/uia-cities/aveiro

To learn more about the project: https://www.aveirotechcity.pt/pt/atividades/observatorio-do-emprego

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