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Insights from the Future of Skills Sectoral Case Studies on Youth Inclusion in the Labour Market

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Introduction

The 21st century, to date, has been characterised the by the rapid infusion of digital technologies into almost every activity associated with work and life. These technologies have, and continue to, transform economies and societies around the globe. They provide enormous opportunities to bring about improvements in enterprise productivity, civic engagement, and the quality of life. Challenges are apparent too, not least the potential for the digital divide to widen and thereby potentially bring about a new dimension to existing social and economic exclusion.

Young people are posed a challenge too. With the rise of technologies such as artificial intelligence, machine learning, and big data analytics, many of the jobs which young people might once have entered in making the transition from education to work are at increasing risk of being automated. Career trajectories that people might have expected to follow and becoming less clearly visible as new digital technologies provide substitute for high and less work.

There is always a degree of hyperbole attached to way in which new technologies are likely to transform work and society. It is, however, clear that the jobs in the workplace of even the near future will require their incumbents to have a degree of digital literacy greater than their counterparts for the recent past. Accordingly, a key policy issue is how to prepare today's youth for the digital world. This has become an urgent priority for policymakers, educators, and employers. The question is how to ensure that young people are equipped with the digital skills to prosper in the labour market of the future. The global COVID-19 pandemic highlighted both the critical importance of digital literacy and the costs imposed on those individuals and employers who lacked them. While the demand for demand for digital skills grows at the same time as the nature of those skills changes, educational institutions have struggled to keep pace resulting in a sometimes-acute mismatch between the supply of, and demand for skills.

Drawing on insights from the European Training Foundation's (ETF) selected sectoral case studies conducted between 2019 and 2023, evidence is provided about the changing face of digital skills demand across various sectors level, the scale of skill mismatches, and emerging policy responses.[1] Table summarises the case studies.

[1] ETF had commissioned Fondazione Giacomo Brodolini https://www.fondazionebrodolini.it/ to conduct the case studies.

Table 1: Selected ETF case studies of sectoral skills demand

Country	Sector
Albania	Energy
Egypt	Energy
Israel	Agri-tech
Morocco	Agri-food
Turkey	Automotive
Tunisia	Energy

Source: ETF

The challenge for the youth labour market

Mention has already been made of the digital divide and the risk that this might widen. In many of the countries listed in Table 1 youth unemployment and relatively high shares of those not in employment, education or training (NEET) is a problem - often a persistent problem one - as shown in Table 2. In some of the countries the share of young people (aged 15-24 years) who possess low levels of skill (i.e., at ISCED levels 0 to 2) is relatively high compared with, for example, the European Union. This suggest, other things being equal, the transition from education to work may well become increasingly difficult for those with relatively low levels of educational attainment in a world where the expectation is that workers will be digitally literate.

Table 2: The youth labour market in selected countries

	Unemployment rate (%), 2022	Youth unemployment rate (%), 2022	NEET rate (%)[2]
EU-27	6.3	14.9	9.7
Albania	12.5	29.2	26.4
Egypt	7.0	17.3	27.2
Israel	3.3	5.3	15.5
Morocco	10.5	25.0	28.3
Turkey	9.9	18.8	24.2
Tunisia	16.1	30.9	30.9

Source: ILOSTAT

The rising demand for digital skills

The evidence from the case studies points towards the shift to a digital economy sparking a major upheaval in the labour market leading to the creation of new job roles requiring new skillsets. Take, for example, the case studies of the energy sector in Tunisia and Albania (ETF, 2022). The sector case study revealed a rising demand for skills in digital data management, remote sensing, and predictive analytics. Both countries exhibited an increased need for digital skills as they moved towards improved management of smart grids and the development of renewable energy technologies, even though their starting points were different. Tunisia had been reliant upon fossil fuels and Albania upon hydro-electrics, but both needed to diversify their supply to include new renewable sources. In Turkey's

[2] The latest available for each country

automotive industry technologies such as robotics are becoming increasingly sophisticated as they incorporate the last wave of digital innovations.

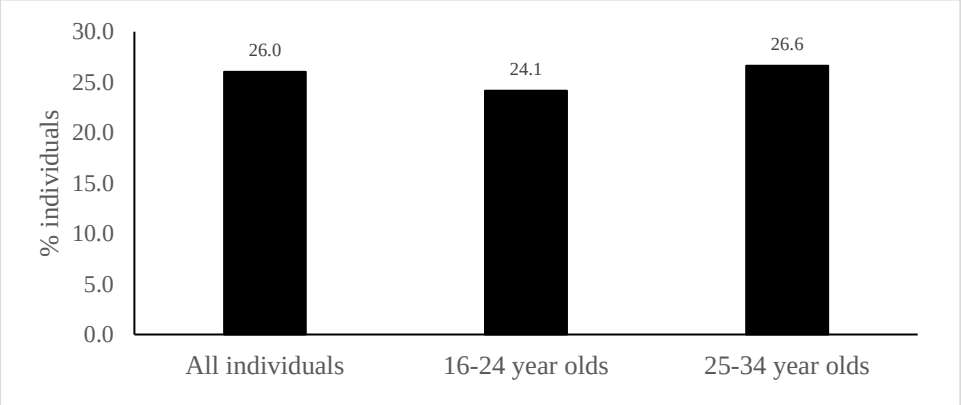
Across all sectors, the use of sensors to collect information about production processes is increasingly commonplace. This in turn generates large amounts of data that needs to be analysed – though this is also becoming semi-automated – and then acted upon. This in turn creates demands for people to develop and instal sensors, data analysts who can exploit the data to produce key performance metrics, which then provides information for a range of people in the workplace to act upon. This is all tends to be sector specific with respect to the particular skills which are required, but it does point to the way in which existing jobs are changed and new jobs requiring new skills are created.

Looking to the future, it is apparent that all countries are dependent upon people who can:

- develop new digital technologies and capabilities;
- adapt existing digital technologies to a particular sector's requirements; and
- those who can use or apply digital tools in carrying out tasks in their day-to-day jobs.

This represents, somewhat crudely, a hierarchy of digital skills from development to bespoke application, to day-to-day use. The speed at which digital technologies are developing means that skills supply often struggles to keep pace. It is notable that in European Union, where substantial investments in digital skills have been made over recent years, that a sizable share of individuals, including young people, have at best basic digital skills (see Figure 1). The issue of skills supply is returned to below.

Figure 1: Share of individuals with basic overall digital skills or less in the European Union, 2019



Source: Eurostat - Individuals' level of digital skills [ISOC_SK_DSKL_I]

Balancing technical and soft skills

It is not just about technical, digital skills. The World Economic Forum's Future of Jobs Report 2020 highlighted the continued and often growing importance of skills such as problem-solving, critical thinking, creativity, resilience, flexibility, and emotional intelligence despite increasing levels of automation incorporating artificial intelligence (WEF, 2020). Even in highly technical fields these skills are in increasingly high demand. These skills, sometimes referred to as "21st century skills" are important not least because they are transferable across different jobs and sectors. And, until now, they have been less susceptible to automation than routine, manual tasks, though this is not to say that this will always be the case.

From a normative perspective, it might be argued that the role of human centred skills become even more important in workplaces which rely upon high levels of automation to undertake their production tasks. In this way workers will remain engaged in their day-to-day work and diffuse levels of job

dissatisfaction and create conditions whereby workers can creatively exploit the processing power new digital technologies possess. It needs to be remembered that digital skills, while they may substitute for some skills within a job, and in some instances replace entire jobs, also have the potential to create new jobs, requiring new skills, producing the goods and services of the future. If that is to happen requires workplace cultures to be ones that encourage creativity and entrepreneurship (or intrapreneurship).

In summary, digital skills are ones that need to be enhanced and complemented by 21st century soft skills if they are to release their full economic and social potential.

The untapped potential of young people

Table 1 above suggests that the resource that young people provide is not being fully utilised in the labour markets of several countries. To some extent levels of youth unemployment and the NEET rate may reflect a transitional phase where young people move in and out of work until they find something which suits their being skills and interests. That said, youth unemployment and NEET rates are markedly higher in some countries compared with, for instance, the EU average, suggesting that there are frictions which prove difficult to resolve in the youth labour market. Those who struggle in the early stages of their careers may continue to do so through adulthood. The youth unemployment and NEET rates represent only part of the problem. In countries such as Egypt and Morocco, but not exclusively so, there is the problem of "educated unemployment" This refers to where a high number of young people who have completed tertiary education remain unemployed (or under-employed in some cases), despite possessing qualifications that one might expect to confer upon them manifold advantages in the labour market.

The problem of educated unemployment is a reflection of a significant skills gap. Investments have been made in education systems but, for one reason or another, this is not meeting domestic skill needs. It would appear at first glance to reflect differing combinations of people studying towards qualifications the demand for which is relatively low in the labour market, and / or those with the skills and qualifications required preferring to work in other sectors or taking better remunerated jobs abroad. Whatever the underlying cause the result is the under-supply of skills to key sectors such as agri-food, energy, and automotive which in turn, has the potential to slow the development of these sectors.

Bridging the digital skills gap

Tackling the digital skills gap requires a comprehensive and multi-faceted strategy. To begin with, there is a need to identify the skills that will be in high demand in the future. This involves staying abreast of the latest trends in technology and understanding how they are likely to shape the labour market. For instance, skills related to emerging technologies such as artificial intelligence, big data analytics, and cybersecurity are likely to be highly sought after in the coming years.

Next, it is necessary to understand the reasons behind the current skills gap. This includes looking at the curriculum of educational institutions, the availability of training programmes, the pace of technological change, and the alignment between education and industry requirements. Understanding these factors can help inform the development of targeted interventions to bridge the skills gap.

Lastly, it is important to make effective use of existing skills stocks. This means recognising the skills that young people already possess and finding ways to build upon them. For instance, many young people are digital natives who are comfortable using digital technologies. This could be used as a foundation upon which to build more advanced digital skills. Moreover, targeted investments in education and training, particularly in vocational training, are vital to equip young people with the requisite digital skills. At the same time, career guidance and outreach efforts need to be improved to

ensure young people are aware of the available opportunities and can make informed decisions about their career paths.

It also needs to be borne in mind that it is not all about skills supply. Employers – or the demand side – need to make sure that they offer employment opportunities that will attract young people who possess the skills they require.

Responses to the digital transition

The digital transition has created new employment opportunities. The agri-tech sector in Israel, for instance, has particularly benefited from technological advancements, fostering an increased demand for tech-savvy agronomists and biotechnologists. Similarly, in Morocco's agri-food sector, there is a growing need for digital skills for precision farming, using advanced technology to improve yields and resource efficiency.

In response to the challenges and opportunities presented by the digital transition, several strategic approaches have been implemented. Anticipating detailed, short- to medium-term skill needs is crucial to proactively address emerging skills gaps. Moreover, developing an integrated, coordinated approach involving a broad range of stakeholders can facilitate everything from curriculum development and qualification design to effective delivery and the development of a training infrastructures. The implementation of such responses can be facilitated by learning from successful examples. For instance, the multi-disciplinary hubs and agropoles set out in Plan Morocco Vert provide a valuable model where key actors collaborate on training and development. In the energy sector of Tunisia, companies have collaborated to create training related to specialised trades.

There are examples set out in the case studies undertaken for ETF (ETF, 2020, 2021, 2022), and in other countries too, that reveal the way in which various stakeholders working in concert have developed initiatives to stimulate the supply of much sought after skills. There is substantial scope to apply these approaches to assisting young people acquire digital skills.

Broader aspects of youth inclusion in the labour market

While digital and the accompanying soft skills are critically important factors associated with the successful integration of young people into the labour market, there are other factors to consider as well. For example, the labour market policies adopted by a country play a critical role in shaping the inclusion of youth in the labour market. This includes laws and regulations related to minimum wages, employment contracts, and employment protection, which can directly affect job creation and accessibility for young people. The overall economic environment can greatly impact the prospects for young people’s labour market inclusion. Social and cultural factors can also influence young people’s inclusion. For instance, societal attitudes towards gender roles can affect the types of jobs deemed 'acceptable' for, respectively, young men and women. Furthermore, views on vocational training versus academic education can influence the career paths that young people choose which in turn affects their job prospects and labour market inclusion. An education system that is aligned with the demands of the labour market and provides relevant skills training will enhance the young people’s employment opportunities. In some instances it might just be the case that the vocational pathway offers more rewarding entry to certain kinds of jobs.

Conclusion

The analysis and insights derived from the ETF reports underscore the significance of the digital transformation that is currently reshaping work across the world. Embracing the digital transition offers a promising avenue to foster young people’s inclusion in the workforce, though it is not without its own set of complex challenges that call for comprehensive, coordinated solutions. The sectoral case studies

undertaken for the ETF confirm the need to anticipate future skills needs and to have this interlinked with the design of training programmes which have been co-developed with industry and improve both digital and soft skills among the youth. While the digital transition presents certain challenges for young people's integration into the labour market, it also offers prospects for developing a more skilled, flexible, and inclusive workforce. By proactively bridging the digital skills gap and fostering inclusive policies, policymakers, educators, and employers can prepare young people not just to participate in the digital economy, but to excel in it. The future of work may be filled with uncertainties, but by equipping young people with a balanced blend of digital and soft skills, and nurturing a culture of lifelong learning, it is possible to shape a labour market that is resilient, inclusive, and adaptable to future disruptions.

More information on the ETF's case studies and other sources

1. The future of sills: A case study of the agri-tech sector in Israel. Turin, European Training Foundation, 2020. Available at https://www.etf.europa.eu/sites/default/files/2020-11/future_of_skills_agri-tech_sector_in_israel.pdf
2. 3. The future of skills: A Case study of the automotive sector in Turkey. Turin: European Training Foundation, 2021. Available at: https://www.etf.europa.eu/sites/default/files/2021-05/future_of_skills_automotive_sector_in_turkey.pdf
3. The future of skills: A case study of the agri-food sector in Morocco. Turin: European Training Foundation, 2021. Available at: https://www.etf.europa.eu/sites/default/files/2021-04/future_of_skills_agri-food_sector_in_morocco.pdf
4. The future of skills: Case study of the energy sector in Tunisia. Turin: European Training Foundation, 2022. Available at: https://www.etf.europa.eu/sites/default/files/2022-03/Future%20of%20skills_Energy%20sector%20in%20Tunisia_EN.pdf
5. Future skill needs in the Albanian energy sector. Turin: European Training Foundation, 2022. Available at: https://www.etf.europa.eu/sites/default/files/2022-03/Future%20of%20skills_Energy%20sector%20in%20Albania_EN_0.pdf
6. The future of skills: A case study of the energy sector in Egypt. Turin, European Training Foundation, 2023 (forthcoming)
7. World Economic Forum. (2020). The Future of Jobs Report 2020. Available at: http://www3.weforum.org/docs/WEF_Future_of_Jobs_2020.pdf