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DIGITAL SKILLS DEVELOPMENT - A KEY OBJECTIVE OF THE EUROPEAN UNION MEMBER STATES

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Abstract: The digital skills nowadays are very important and necessary in many fields of the activity. The Digital skills required in the workplace is one of the method to drive innovation and stay competitive. Developing digital skills is an objective key of the members of EU countries. The Digital Skills Indicator is a tool that monitors Member States' performance in achieving competence targets. This paper analyzes the degree of attainment of basic digital skills in the EU Member States ("low", "narrow" and "limited" digital skills level). The influence of demographic factors on the levels of digital skills is analyzed and the gap between rural and urban areas regarding the population's digital skills is presented. The importance of digital skills is emphasized both for increasing competitiveness in the labor market and for adopting digital solutions in business.

Keywords: digital transformation, digital skills, online information and communication, content creation skills, digital education

JEL Classification: O15

In the modern world, the effective use of digital tools in business operations and digital transformation processes are impossible without improving the digital skills of employees.

The concept of digital skills includes competences that allow people to manage digital processes, to implement and confidently use digital tools and knowledge in their work.

The Digital skills currently in demand can be grouped as follows: skills that determine

- the fluent use of technology and digital devices, as well as confident work in various programs,

- analytical skills that determine the ability to obtain information, process it, to draw right conclusions and convey the results and decisions to the target audience;

- communication skills that allow you to communicate freely and organize the work using digital channels;

- skills aimed at identifying problems and finding ways to solve them personal characteristics that allow a person to easily adapt to a changing digital environment.

When the whole world was on lockdown, the companies had no other way out, except to transfer all processes online. Now, many of those who went to work in online mode a year ago, left teams to work outside the office or gave employees the right to choose - work in the office or from home.

According to one of the latest studies on the state of digital skills in Europe, conducted by the IDC company for Microsoft, companies that have successfully implemented innovative technologies face a shortage of qualified personnel. Only 3,5% of employees from European countries meet the ever-increasing needs of the market in digital literacy. In the countries of the European Union, there are thousands of vacancies that require potential candidates to have highly qualified skills. The question of the staff's possession of such skills takes on even greater significance.

As noted in the Business Training Experts report on the return on investment in training, companies that have implemented a culture of professional development receive 24% more profit. The data from Global Knowledge show that 93% of employers are confident that certified employees increase overall productivity and commercial benefit. This means that companies investing in training today will be able to easily outrun competitors in the future.

The 2030 Policy Program: The Path to the Digital Decade approved by the European Parliament envisages that the European Union will achieve its objectives in the digital transformation of member states' economies by the end of the decade in line with EU values, promoting human-centered digital policies that give skills to citizens and businesses. EUR 127 billion is earmarked for digital reforms [2].

A cardinal direction established in the Path to the Digital Decade is: a digitally skilled population and highly skilled digital professionals. Achieving this objective will increase the competitiveness of the member states globally. Member States need to invest in their own digital transformation and help to increase innovative potential.

25 digital development plans were approved by the Council of the European Union. By 2022, the amount allocated in these plans was EUR 490 billion of which EUR 325 billion in grants and EUR 165 billion in loans [1].

Each Member State must allocate at least 20% of the total allocation of its Recovery Plan to measures contributing to the digital transition. Figure 1 shows the estimated expenses for digital transformation per member state.

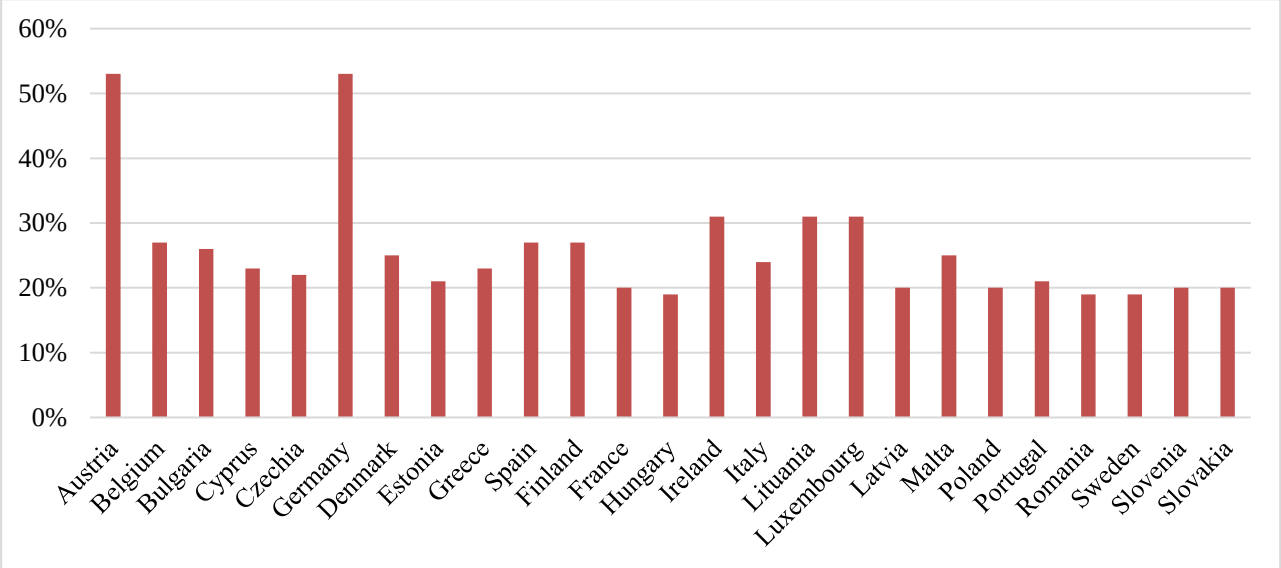

Figure 1 Contribution to the digital objectives

Source: European Commission

From €127 billion earmarked for digital reforms, about 17% targets are aimed to the development of basic and advanced digital skills [1]. The Investments and the reforms will make an important contribution to the set goals of digital development.

Today, the advances in the artificial intelligence and workflow automation are progressing so quickly that certain outdated jobs or processes are disappearing completely. However, this does not mean that technology will displace people from the labor market. Technological advances can create millions of new jobs. And these places will require candidates to have the appropriate skills and competences. The most jobs in-demand require digital skills to a greater extent.

Since the process of digital transformation evenly affects all sectors of the market, it is difficult to name a list of those areas in which digital skills would be most in demand.

Most people today need new knowledge and skills: from schoolchildren and students to workers in all fields of the activity.

Member States' progress in digitization is reflected in the annual Digital Economy and Society Index (DESI) reports. The report reflects several indicators on digital skills.

Since 2015, the European Commission has measured citizens' digital skills through the Digital Skills Indicator (DSI), based on selected activities related to internet or software use, which are performed by individuals aged 16-74. In 2022 was introduced the new DSI 2.0, measures citizens' activities taking place on the internet in the last 3 months in five specific areas:

- Information and data literacy;
- Digital content creation;
- Safety;

- Communication and collaboration;

- Problem solving.

According to the DSI 2.0, it is assumed that individuals having performed certain activities over the internet have the corresponding skills.

According to the number of activities performed in each area, two levels of skills are calculated, i.e. 'basic' and 'above basic'. Based on the level of individual's skills in each area, an overall level is then calculated. If an individual has 'basic' in some areas and 'above basic' in others, then this individual is considered having overall 'basic digital skills'.

In addition to calculating 'basic' and 'above-basic' levels, DSI 2.0 also includes information on different levels of digital skills such as [1]:

- Individuals with low digital skills: who have either basic or above basic level in 4 out of the 5 areas;
- Individuals with narrow digital skills: who have either basic or above basic level in 3 out of 5 areas;
- Individuals with limited digital skills: who have either basic or above basic level in only 2 out of 5 areas;
- Individuals with no digital skills: who have no skills in 4 areas or in all 5 areas;
- Digital skills could not be assessed because the individual has not used the internet in the last 3 months.

The Human capital dimension assesses both internet user skills of citizens and advanced skills of specialists.

Internet user skills includes:

- at least basic digital skills;
- above basic digital skills;
- at least basic digital content creation skills.

The indicator at least basic digital skills assumes the percentage of individuals with "basic" or "above basic" digital skills in each of the following five dimensions: information, communication, problem solving and software for content creation and safety [1].

The indicator above basic digital skills assumes the percentage of individuals with "above basic" digital skills in each of the following five dimensions: information, communication, problem solving and software for content creation and safety [1].

The indicator at least basic digital content creation skills assume the percentage of individuals with at least a basic level in using software for digital content creation.

Advanced skills and development include:

- ICT specialists;

- Female ICT specialists;
- Enterprises providing ICT training;
- ICT graduates.

The indicator ICT specialists assumes the percentage of employed ICT specialists, aged 15-74. It includes jobs like ICT service managers, ICT professionals, ICT technicians, ICT installers and servicers.

In 2022 the leaders in employed ICT specialists (percentage of total employment) were Sweden (8%), Finland (7,4%), Luxembourg (6,7%),Netherlands (6,7%) and the lowest percentage are found in Bulgaria (3,5%), Poland (3,5%),Greece (2,8%) and Romania (2,6%) [3].

The indicator Female ICT specialists assumes the percentage of employed female ICT specialists. It includes jobs like ICT service managers, ICT professionals, ICT technicians, ICT installers and servicers.

In 2022, 1709 thousand of individuals constituted employed female ICT specialists in EU. The leaders of this indicator were Germany - 391 thousand of individuals, France -259 thousand, Spain 157 thousand, and the lowest indicator was in Luxembourg 4,0 thousand, Cyprus 3,2 thousand and Malta 2,9 thousand of individuals [3].

The indicator enterprises providing ICT training assumes the percentage of enterprises who provided training in ICT to their personnel. In 2022, the largest share of companies that organized trainings was in Finland (37, 67%), Belgium (32, 62%), Sweden (32,15%), Denmark (30,20%), and the most a small share was in Bulgaria (6,7%) and Romania (5,9%). On average in the EU, this indicator constituted 19.68% of all enterprises [3].

The indicator ICT graduates assumes the percentage of individuals with a degree in ICT.

In 2022 in the EU, the share of persons with a degree in ICT constituted 3,9% of graduates. The leaders in this indicator were Ireland 8,6%, Estonia (8,4%), Finland (7,5%), Romania 6,7% of graduates. A small share of graduates in the IT field was in Portugal 2.6%, Belgium 2,2, Italy 1,4% of graduates [3].

The Path to the Digital Decade program aims to increase the number of ICT professionals employed in the EU to at least 20 million by 2030, up from 8.9 million in 2021 (corresponding to 4.5% of the workforce). Although there has been steady growth since 2013, acceleration is needed to achieve the set targets.

In 2021 only 54% of individuals possessed at least basic digital skills, 26% possessed above basic digital skills and 66% possessed at least basic digital content creation skills.

Regarding the indicator of advanced skills and development in 2021, employed ICT specialists aged 15-74, constituted only 4,5%, only 19% were female ICT specialists. In 2020, 20% of businesses offered ICT training and 3.9% constituted ICT graduates. In 2013, the number of ICT specialists was 6 million and increased to 9 million in 2021.

Figure 2 shows the situation regarding the Human capital dimension in all member states.

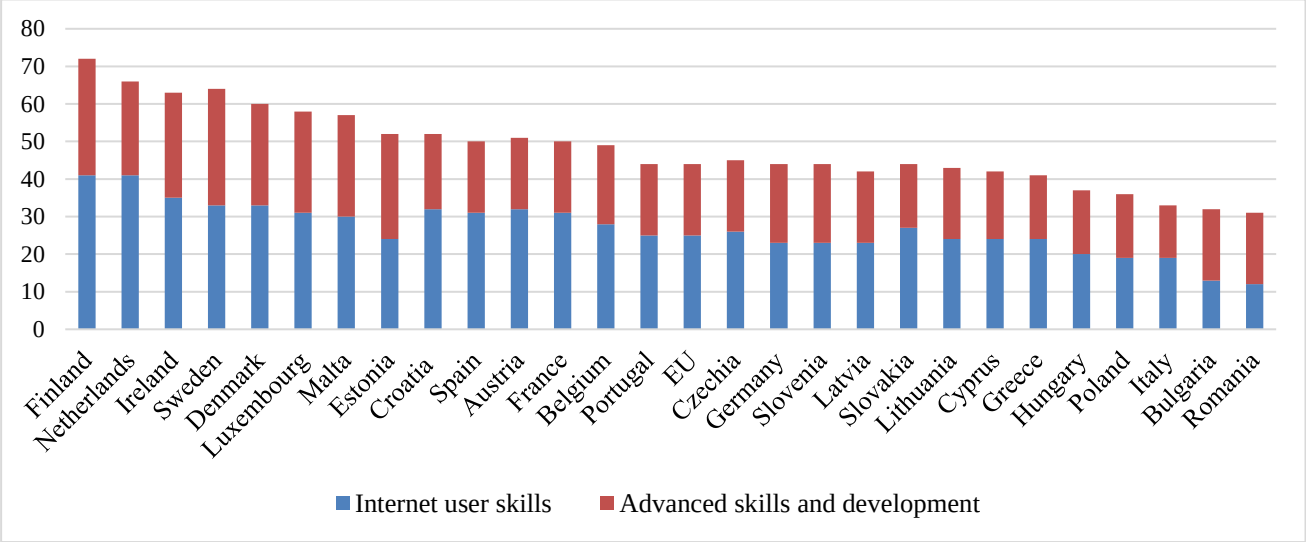

Figure 2 Human capital dimension (Score 0-100), 2022

Source: DESI 2021, European Commission

As we can see the leaders in internet user skills of citizens and advanced skills of specialists are Finland, Netherlands, Ireland, Sweden, and the lowest scores are found in Italy, Bulgaria, and Romania.

The situation in different member states regarding basic digital skills is presented in the figure 3.

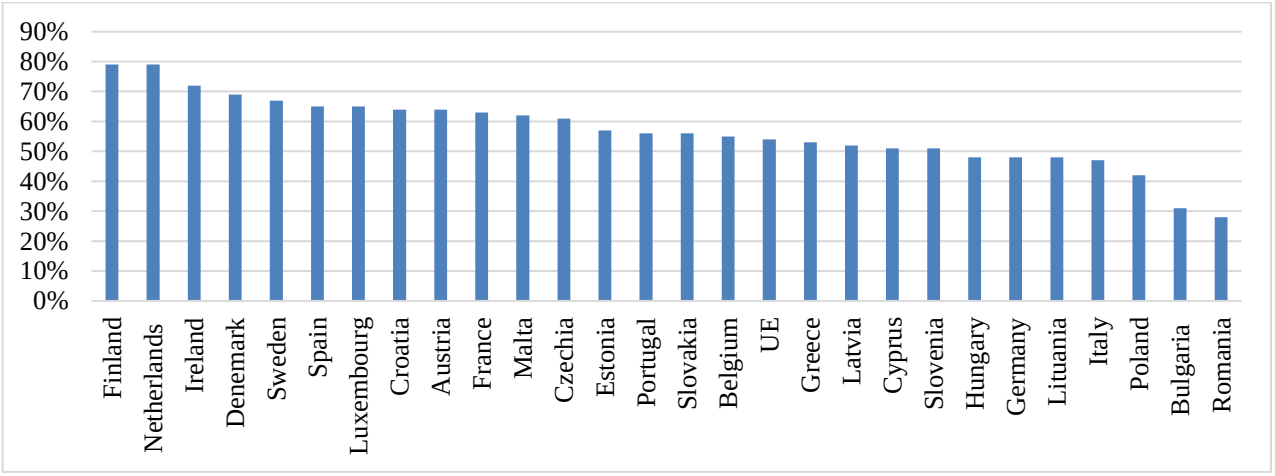

Figure 3 At least basic digital skills (% of individuals), 2022

Source: Eurostat, ICT usage in households and by individuals in Households and by Individuals

As we can see from figure 3 Finland and the Netherlands are leaders in the EU, where 79% of the population possesses basic digital skills. Romania and Bulgaria lag behind, this indicator constituting around 30% [1]. A large part of the EU population still lacks basic digital skills. The proposed objective for 2030 is for at least 80% of citizens to have basic digital skills [5].

The highest share of individuals (71%) who possess at least basic digital skills were in 2021 individuals from 16 to 24 years old, and the smallest share (25%) was the age group from 65 to 74. The analysis of this indicator depending on the living environment of the population showed that a greater share is represented by people who live in the urban environment (61%) and less is represented by the share of people from the rural environment (56%). In terms of studies, the largest share (79%) with at least basic digital skills is the group of individuals with high formal education. In terms of employment, the largest share with at least basic digital skills is the student group (77%), followed by the group of employees, self-employed, family workers (63%) and the lowest share is the group of retired persons and other inactive group (29%).

A recent Microsoft study on artificial intelligence and digital skills showed that 96% of employees in Europe say they are very interested in programs to improve digital literacy to remain successful in the age of advanced technologies.

Based on global data, the needs of the labor market were determined: in the most sought-after specialists and necessary skills. The list has been compiled of 10 professions, especially necessary in the modern economy - this is a software developer, a sales representative, a project manager, an IT administrator, a client manager, a digital marketer, an employee of support services, a data analyst, a financial analyst and a graphic designer.

To help people who lost their jobs due to the economic crisis, as well as specialists who want to obtain new knowledge for employment in the field of digital technologies, Microsoft launched a global initiative aimed at further training people in digital skills.

Initially, the company aimed to reach 25 million people around the world. Microsoft's certified training programs allow not only IT-specialists and developers to improve their skills, but also to increase the productivity of entire teams and workplaces by using the potential of cloud technologies and AI. In addition, training gives the opportunity to specialists from other industries to obtain new knowledge or requalify. This, of course, expands the specialist's horizons: he becomes more competitive on the market or can work in a completely new field for him.

In our opinion, business must always support, motivate and implement the training process of employees in the internal culture of companies. Especially considering the growing skills deficit, the heads of organizations should consider programs of professional development as priority tasks.

Conclusions

The demand for skills and employees who own them is increasing as the digital economy continues to evolve, and in the future it will grow even more. It has already been noted more than once that today every company is digital, because business is transformed under the influence of technological innovations.

The introduction of advanced technologies will accelerate, and companies will most likely use a combined approach in business in the future. In addition to the implementation of innovative processes, the digital skills of employees will improve as part of training at enterprises, this will allow them to remain in demand on the market and perform their work no less effectively than a few years ago.

Therefore, increasing digital literacy is not a new-fangled trend at all, but a vitally necessary process for the economy, which will continue in the future.

REFERENCES:

1. European Commission Digital Economy and Society Index (DESI) 2022 [online] Available at:< https://digital-strategy.ec.europa.eu/en/library/digital-economy-and-society-index-desi-2022> [Accessed 18 September 2023].
2. 2030 Policy Programme "Path to the Digital Decade", [online] Available at: < https://www.eumonitor.eu/9353000/> [Accessed 19 September 2023].
3. Shaping Europe's Digital Future, [online] Available at: < https://digital-decade-desi.digital-strategy.ec.europa.eu/datasets/desi-2022/[Accessed 21 September 2023].
4. Digital Education Action Plan 2021-2027, [online] Available at: < https://www.eumonitor.eu/9353000/https://education.ec.europa.eu/focus-topics/digital-education/action-plan>[Accessed 20 September 2023].
5. ICT usage in households and by individuals, [online] Available at: < https://www.eumonitor.eu/9353000/https://ec.europa.eu/eurostat/> [Accessed 21 September 2023].