Employee Education as Prevention Against Discrimination in the Labour Market

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Authored on behalf of the Independent Union Association

by Národní vzdělávací fond, o.p.s.

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Introduction

This study was assigned the Independent Union Association under the umbrella of the "Social dialogue as a tool of employee social protection and prevention against discrimination in the Czech labour market" project, with the aim to provide an overview of the selected aspects of the "employee education as prevention against discrimination in the labour market" issue.

First, the study's introduction summarises the current technological development's chief assumed impact on the labour market, identifying threatened occupations as well as changes in required skills. Chapter 2 lays out a basic overview of developments occurring in the Czech labour market and in selected countries, subjecting data sources to a statistical analysis. Chapter 3 maps flexible forms of work and new (alternative) forms of work, developed usually due to and using modern technologies and possibly associated with a higher risk of precarious work in some sectors or for certain groups of workers. Chapter 4 evaluates selected statistical characteristics of employee education in Czechia and a few other European countries. Chapter 5 addresses the issue of education in the context of collective bargaining and union activities, taking into account selected approaches abroad. Situation in Czechia is also evaluated, using available data. The final summary contains basic recommendations and inspiration for future union activities as related to the issue in Czechia.

The study is based on extensive research and secondary analysis of domestic and external literature and data sources, chiefly including research reports and statistics on the topic. The author also relied on his own experiences, as well as on conducted surveys and analyses, mostly of skill and education requirements posed by Industry 4.0. Among other things, the latter entailed many personal interviews with business managers and other experts on the subject. In-depth interviews with experts experienced in education and informed of the role of unions were conducted as a material underpinning this study.

I. Impact of new technologies on employment, occupations, and skills

New technologies are beginning to permeate all individual business operations, both in manufacturing and services, with even the content and form of work undergoing a transformation, forcing workers to quickly adapt. The rate of robotic automation, digitisation, and automation is affected not only by the nature of manufacturing and services, but also by business' financial resources, and last but not least by global competition which pushes companies to reduce costs, improve production quality, and enhance productivity. Importantly, most big businesses in Czechia, especially those operating in the industry and banking sector, belong to multinational corporations which require them to be on an appropriate technological level and compatible with their mother companies in terms of technology, information systems, quality systems, etc.

Due to ongoing real-time digitisation, automation becomes interconnected with all processes of manufacturing and services, storage, distribution, and sales. Use of big data allows companies to adapt their activities to the current state of supply and demand. Industrial robots increasingly perform repetitive laborious tasks; on the other hand, there are collaborative robots which require human cooperation. Artificial intelligence, or rather machine learning is becoming more capable of effectively managing automation processes and robots, using algorithms and statistical methods. Sensors on material objects in manufacturing (internet of things) increase the volume of available data, facilitating a more effective planning. Engineering activities can be digitised in the pre-manufacturing stage (e.g. modelling, virtual prototyping, simulation, visualisation, material and system testing). Additive manufacturing is currently employed mostly in the production of prototypes, but is also suitable for custom manufacturing a wide range of products and helps save materials. Online communication and perfected information systems transform the nature of business management, supplier relationships, sales models, and customer communications. In big businesses, new technologies are introduced at the fastest rate. In small and medium businesses, digitisation is more complicated, requiring that all processes be ready for digitisation, from manufacturing and administration to logistics, warehouses, or accounting, as they need to be connected and compatible.

In Czechia, application of new technologies is lacking in quality when compared to developed countries. Still, it is advancing relatively quickly. According to a Czech Statistical Office (ČSÚ) survey[1], 18 % of manufacturing businesses with ten and more employees were using industrial or service robots in 2019. Robotic automation is a strong point of primarily large entities. In 2020, industrial robots were used by more than 60 % of big businesses in the manufacturing industry and only by 9 % of small companies operating in the same sector. Industrial robots can be found in approximately 55 % of entities in the automotive industry. In Czech businesses, service robots are utilised at a lower rate than their industrial counterparts, and typically used for assembling, cleaning, or storage work. Over 40 % of companies in Czechia are already using the internet of things. Roughly one tenth uses it to regulate lighting or power consumption; a similar percentage to monitor the security of their business premises.

[1] Source: Czech Statistical Office, Využívání informačních a komunikačních technologií v podnikatelském sektoru v roce 2019 (https://www.czso.cz/csu/czso/vyuzivani-informacnich-a-komunikacnich-technologii-v-podnikatelskem-sektoru-rok-2019-aktualni-mesic-roku-2020)

Smart IoT devices have entered manufacturing as well. In the manufacturing industry, almost one fifth of businesses monitors production processes and can optimise them in real time. IoT, however, is most frequently used by logistics companies to monitor the movement of goods or the operating condition of vehicles. In 2019, 6 % of businesses were printing three-dimensional objects, mostly in industrial manufacturing where the technology was used roughly by one third of electronic or automotive companies. Besides the manufacturing industry, 3D printing is used most frequently by IT, telecommunications, or research & development businesses.

As confirmed by experts' practical experience, new technologies are also being introduced into small craftsmen businesses where digital tools, as well as cameras, drones, or 3D printers used to measure (flat) surfaces and for other purposes, supplement operations. Plumbers and heating technicians now have to work with smart buildings or intelligent households, needing to be able to install, set, connect, or repair everything.

Threatened occupations

The impact of new technologies on employment has long been a subject of many a research study. The first of these studies unilaterally focused on quantifying the replacement of work assignments with technology, and on possible termination of jobs due to technology. Their conclusions were strongly pessimistic, predicting that up to one half of jobs in developed countries would disappear and that the figure might actually be much higher in some states.

Recent studies acknowledge that application of (robotic) application will occur differently and at different rates of intensity over time, affecting individual industries and occupations differently depending on their nature. OECD made some calculations based on a thorough analysis of a rather broad variety of activities in all occupations. To this purpose, the organisation used data from PIAAC, an extensive survey of adult competencies, ascertaining, among other things, skills and other requirements for the performance of individual professions. According to these calculations, ca 14 % of occupations will be seriously threatened over the next 10–20 years, with another 32 % undergoing a significant transformation. This is a much lower estimate than the now legendary calculations by Frey-Osborne (2017) who predicted that even in such developed, service-rich countries as the USA, around 47 % of entire occupations groups would vanish. According to OECD, Czechia scores around the average, with ca 15 % of jobs in the country, i.e. roughly 780,000, being highly threatened with automation and robotic automation and further ca 30 %, i.e. over 1,560,000[2], undergoing a vast transformation. Considering the current generation of new jobs in the economy, extensive technological unemployment does not seem likely. Still, changes need to be responded to timely and adequately. Regardless of whether this concerns workers who will be forced to take up new jobs, or professions which will have to be significantly transformed, such workers will need to be equipped with new knowledge and skills in order to be supported in such a transformation era.

In a whole range of occupations, those **jobs** which involve a large amount of manual and routine tasks are threatened the most; those which depend on social skills and literacy the least. In the manufacturing industry, machine operating and physical activities in a predictable environment comprise approximately one third of workers' time worked. Thus, assembly line and machine operators who currently make up 27 % of those employed in the manufacturing industry constitute

[2] Estimate based on employment in 2017, source: ČSU-VŠPS

the most threatened group. Other manual activities related to the manufacturing process, such as packaging products, moving materials, or maintaining machines, are also easy to automate. To a degree, automatability of activities depends on the context of occupations' performance. While, technically speaking, up to 90 % of the activities performed by welders, toolers, and solderers in industrial operations could be automated, the same applies to less than 30 % of the same work done in customer service under the umbrella of the same occupations. That is because the latter is done in more complex, often unpredictable conditions and its performance must be adapted to a given purpose as per customers' requirements. Similar differences in automatability apply to series and custom manufacturing. According to experts' practical experience, jobs in series manufacturing will be replaced by automation at a double or triple rate compared to custom manufacturing.

Low-skilled workers may find themselves facing issues and replaced with available mid-skilled workers they will not be able to compete with. There is a danger of low-skilled workers being able to secure only low-level and odd jobs and thus being pushed further to the periphery. There is a great potential risk to social cohesion in the form a growing gap between the upper and lower classes. Additionally, it is clear there are groups of workers, chiefly e.g. the older generation, which may be negatively affected by the growing pressure to engage with new dimensions of work, and may struggle with an increasing psychological burden or even deal with the possibility of losing their job. Many empirical surveys confirm that businesses are addressing these issue and that workers who are not able to adapt to the new demands of technology tend to be re-assigned to different jobs. Nevertheless, the vulnerability of these workers is evident as any economic problems may cause them to be laid off at a greater rate or retire early, as already suggested by some data from the Czech Social Security Administration.

These negative consequences can be prevented by systematically creating an environment where qualifications are constantly enhanced, allowing employees to keep up with the technological advancement in their fields and making sure the structure of workforce skills is as adapted to new requirements as possible. At least some employees might be able to climb the qualifications ladder, preventing unemployment, income polarisation, and social tensions in society.

Application of new technologies will not result just in job reduction, but all industries will also see the **emergence of new activities**, performed within existing occupations, and even of **entirely new professions**.

Skill requirements

Qualitative changes brought about by new technologies will be reflected in the imposition of **new skill requirements on workers.** According to empirical studies, 42 % of skills will undergo a significant transformation. At the same time, it is clear that as a result of ICT and ongoing robotic automation, manufacturing processes which have so far been dissimilar from one another will become more alike in nature, and that the workers using these technologies will not be as specialised as they have been up until now, instead needing to acquire technical and other knowledge of a higher class of generality and abstraction. What is also gaining in prominence is social skills, as well as adaptability, ability to learn new things, communication skills, self-organising, etc. According to a WEF study, at least 54 % of all employees will have undergone significant retraining and qualification enhancing in the next 5 years.

Engineering experts will need to familiarise themselves with a broader range of technology and be able to evaluate solutions to problems in a much broader context than before as the complexity of

tasks will increase and production becomes more variable as well as more tailored to customer needs. They will have to be able to engage in project management or work in interdisciplinary and international teams. Greater emphasis is being placed on quality control across all stages of the manufacturing process, not just in one's own company, but also with external suppliers and in relation to customers or consumers. They have to be well-versed both in user-friendly and more challenging programming software.

To work in mid-skill technical occupations, workers will have to be able to perform a relatively wide range of tasks in all stages of a product's preparation and manufacturing; effectively use and interpret production data and documentation; prepare, use, and test high-tech devices; or use advanced business information systems, planning methods, and project management. **In blue-collar occupations**, setters and toolers will regularly work with complex computer-managed devices and information systems, needing to demonstrate technical skills and knowledge of programming. Operators and blue-collar workers in logistics will have to possess user-level IT skills, work with mobile terminals, and keep supplementing their skills with new elements of work, using both technologically advanced, expensive devices, and sophisticated components.

Traditional craft occupations also increasingly employ new technologies and digital tools, combining manual work with intelligent systems. Cameras, drones, or 3D printers are being used to measure (flat) surfaces and for other purposes. Plumbers and heating technicians now have to work with smart buildings or intelligent households, needing to be able to install, set, connect, or repair everything, meaning that workers, besides possessing professional skills, have to be aware of IT technologies.

In the **service sector**, from transportation and banking to healthcare and social services, workers will not be able to do without relevant ICT knowledge and skills needed to use these technologies when introducing sophisticated information systems, applying robotic service support, engaging in secure remote data transfers, telecommunicating with clients, etc.

Besides the increasing qualification requirements posed in occupations involving the use of new technologies, there is also a **risk of the opposite, i.e. the lowering of qualification requirements** in some jobs. This can manifest in the simplification and standardisation of work which will consequently become more dependent on instructions from algorithms and on the manner in which these algorithms work. Some qualified tasks may be taken over by machines, with people becoming mere controllers, unable to employ their own skills. Such a development may reduce the complexity of some types of work and consequently rob people of certain skills, as illustrated by drivers relying on navigations systems and ultimately losing their ability to find their own way. In some cases, workers stop being able to deal with problems caused or unsolved by machines as they do not gain any experience with their activities by merely observing them.

Certain elements of de-qualification, accompanying the process of introducing automatic and robotic devices into businesses, are being heralded by domestic research. For instance, during the 2019 survey into industrial businesses conducted by the National Training Fund and the Czech Technical University in Prague[3], the respondents stated that robotic automation of activities allows them to fill frequently vacant skilled jobs with trained workers from unskilled or low-skilled workforce. This is made possible

[3] Source: Janíčko, M.; Klicnar, F.; Budský, P.; Weisser, P.: Požadavky českého průmyslu na pracovníky v podmínkách Průmyslu 4.0. Forum sociální politiky, 2020-4, pp 6-14.

by the fact that the skills required for operating new machinery are often much easier to acquire, and thus can be acquired by unskilled workers, with a single worker often being able to service several new machines. In order to make sure the robots keep working, however, technicians-programmers need to be employed to program and maintain the machinery. Such jobs tend to be occupied by college-educated technicians.

Research into businesses has also demonstrated that automation has so far not been driving human labour out of the Czech industry to a significant degree, even though it has been taking place to some extent for a very long time. Businesses which had already begun automating and digitising their operation stated they were not laying off the workers who had been replaced with automation, instead retraining them for different jobs to increase production capacity while maintaining the same number of workers. According to businesses, high-skilled workers able to maintain, set, and programme robots needed to be hired to service the robots. Sometimes, high-skilled workers could be replaced with trained unskilled workers to perform simple tasks regarding the servicing of robots and new machinery.

Introduction of new technologies replaces some activities, mostly on the level of low skills, but also in mid-skilled administration. On the other hand, some activities may become simpler due to automation, losing their original expert nature. Thus, mid-skilled activities may lose some of their substance in the future, primarily in favour of high-skilled, but also low-skilled activities, likely contributing to the polarisation of the labour market.

Effect of the COVID-19 pandemic

It is clear that COVID-19 will accelerate the introduction of technologies. According to the estimates by Ernst&Young, the development of remote work technologies, as well as that of augmented and virtual reality technologies, will gain speed as these solutions increase effectivity while reducing costs and can be utilised in situations where there is limited physical interaction[4]. New technologies are dynamically spreading not only in manufacturing, but also in services, mostly in banking and health care which has seen an unprecedented development of telemedicine.

This conclusion is shared by the survey conducted in the fall of 2020 by the Association of Industry and Transport. Almost two thirds of the 99 surveyed businesses stated that their experiences with the coronavirus crisis would lead them to invest more in the Industry 4.0. technologies. For instance, the crisis accelerated investments in augmented reality. This allows businesses to remote-service machinery, without technicians having to travel long distance and service the machines physically. Other investments target simulation and modelling, not only of technological devices, but also of processes. Companies also invest in improving online communication between people and technological devices. While big businesses are more focused on analysing data from production machines, processes, or logistics in order to optimise human, material, or energy resources, small and medium businesses tend to emphasise production quality. Companies also increasingly improve their security, both cybernetic and procedural.

[4] Ernst&Young (2020): Pandemie COVID-19 uvolňuje prostor technologickým inovacím a naznačuje, jak bude vypadat nový normál. https://www.ey.com/cs_cz/news/2020-press-releases/04/pandemie-covid-19-uvolnuje-prostor-technologickym

As the introduction of new technologies accelerates, so do changes in requirements of skills compatible with the new technology. Importantly, all workers need to have the same chance at mastering their new tasks, including groups disadvantaged by their lower skills, by age, or type of employment. Among other things, they should be aided in this by the negotiating power of trade unions.

II. Selected labour market characteristics in the context of recent developments

II.1 Employment from the perspective of occupational groups—international comparison

From 2010 to 2020, employment in the EU-27[5] grew. In the 15–64 age group, this growth amounted to 5 % across all economic sectors (as per the NACE classification); slightly more in Czechia and Denmark (6 %) out of the countries being compared, and also in Germany (9 %). The greatest growth was recorded in Estonia (13 %), caused primarily by a drop in unemployment[6] accompanied by a neutral demographic development (Estonia's population size remained almost identical over the monitored period).

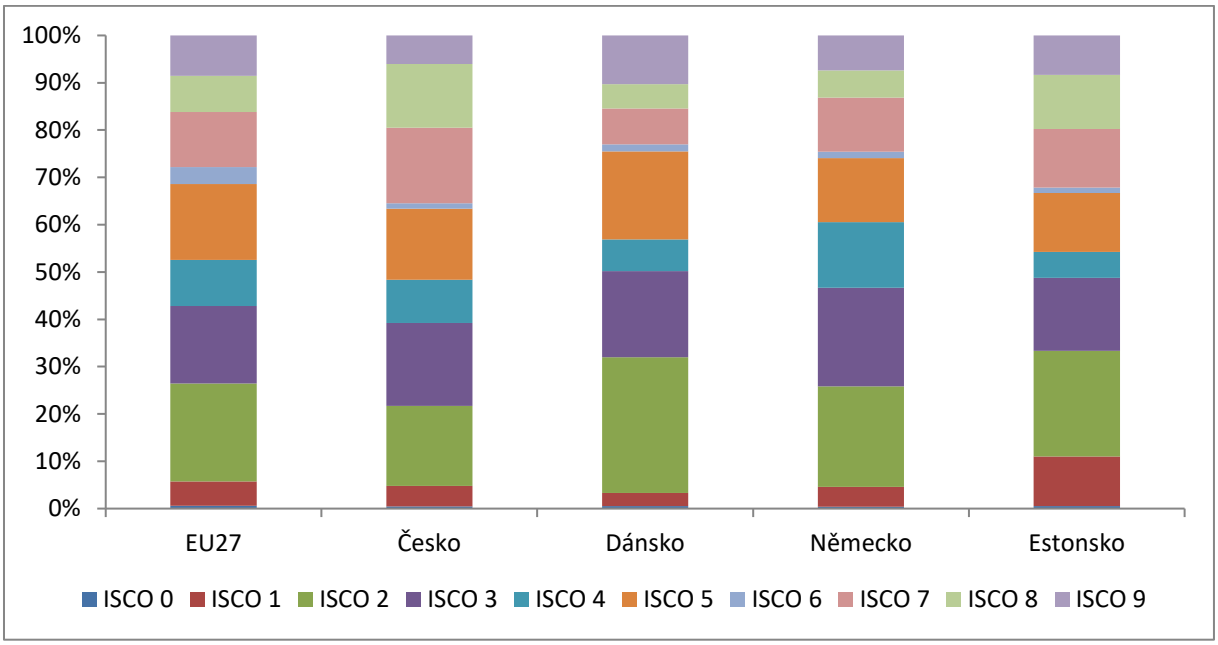
ISCO occupations can be divided by the skill level required for the performance of given professions. The highest skill level (or skill level 4)[7] is attained by the first two groups—legislators and managers[8] (ISCO 1) and professionals (ISCO 2). These are followed by technicians and associate professionals (ISCO 3, skill level 3). Skill level 2 comprises clerks (ISCO 4), service workers and shop and market sales workers (ISCO 5), skilled agricultural, forestry, and fishing workers (ISCO 6), craft and related trades workers (ISCO 7), and plant and machine operators and assemblers (ISCO 8). Elementary occupations (ISCO 9)[9] are the least skilled (skill level 1).

The occupational structure (classification as per ISCO) of national employment shows us, among other things, economies' skill intensity or rather the skill level required by an economy. It is also one of the indicators used to assess an economy's development.

When comparing the employment structure by occupation, we can see certain important differences in selected countries as of 2020 (see Chart 1). At 11 %, ISCO 1 is significantly more common in Estonia compared to the 3–5 % in the other countries and in the EU-27. Specifically, ISCO 2 is less common in Czechia (17 %) and the most in Denmark (29 %). In the selected stated, ISCO 3 similarly ranges from 15 to 21 %. The ISCO 4 group of occupations exceeds the average percentage (10 % in the EU-27) in Germany (14 %). The other compared countries fall below the average, in the following order—Czechia (9 %), Denmark (7 %), and Estonia (6 %). ISCO 5 ranges between 12 to 19 % and ISCO 6 between 1 to 4 %. ISCO 7 is the most common in Czechia (16 %) and the least in Denmark (8 %). With their 13 % and 11 %, respectively, Czechia and Estonia's share of ISCO 8 significantly exceeds the EU-27 average (8 %); Denmark (5 %) and Germany (6 %) score below the average. ISCO 9, i.e. the least-skilled occupations, are the most common in Denmark (10 %) and the least in Czechia (6 %).

[5] Without the United Kingdom. Any data from before the UK's departure from the EU was retroactively recalculated to accommodate this departure.
[6] 17 % in 2010, 7 % in 2020.
[7] For the relationship between skills quality and professional ISCO groups see page 3: https://www.czso.cz/documents/10180/23172001/metodicka_prirucka_1.pdf/1607eef6-476b-47b6-af64-a426699ac52a?version=1.0
[8] With the exception of managers in accommodation and food service activities.
[9] Those employed in armed forces (ISCO 0) occupy both the highest and lowest qualifications level.

Chart 1: General employment structure as per occupation percentages (ISCO) in 2020

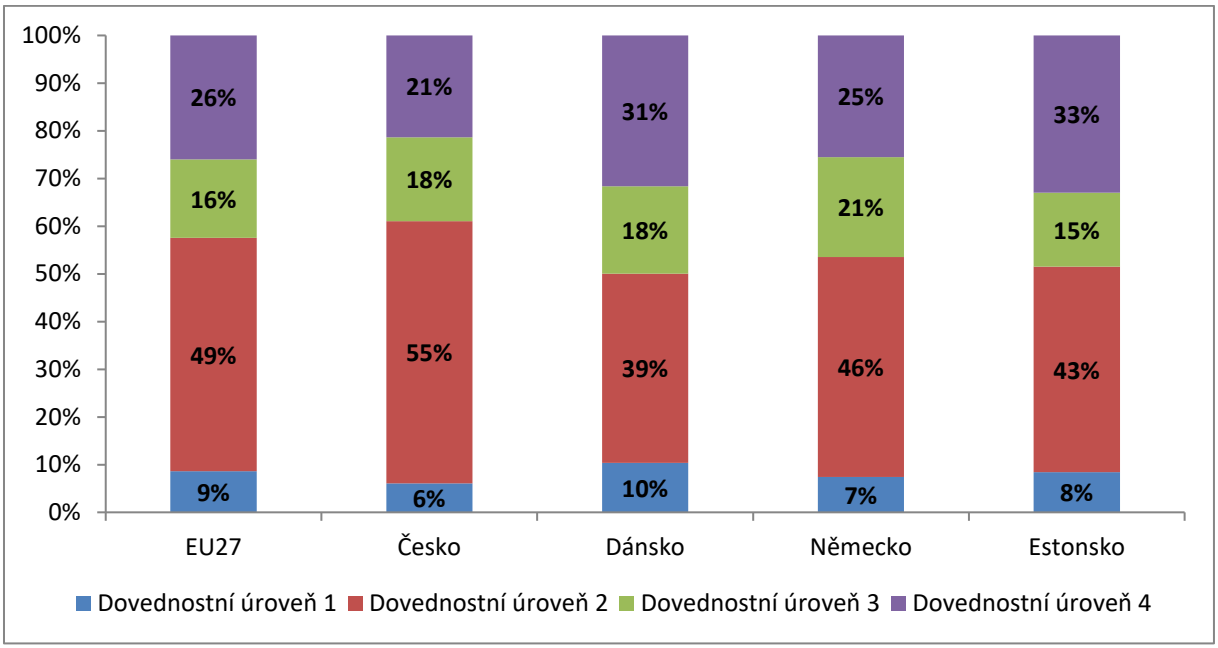


Source: Eurostat, table code [lfsa_eisn2]

Czechia, Denmark, Germany, Estonia

The following chart (Chart 2) compares combined groups of occupations in categories by skill level, providing clearer information on economies' skill intensity. In Czechia, unlike in the other countries being compared and unlike the EU-27 average, the highest skill level is the least common (21 %). This is likely due to the nature of the Czech economy, based on strong industrial production, and to the high rate of foreign ownership of businesses, resulting in high-added-value work (e.g. research and development) being predominantly performed in the countries of origin, with Czechia engaging only in basic manufacturing which relies on the country's relatively good infrastructure and lower workforce costs when compared with Western Europe. In this regard, Czechia also lags behind the post-communist Estonia where the highest skill level enjoys the greatest commonality out of all the monitored countries (33 %), although this is caused by the country's large number of managers rather than professionals. In Denmark, too, the highest skill level is the most common out of all skill levels (31 %); conversely in Germany (25 %), its percentage is slightly below the EU-27 (26 %) average. Compared to the other selected countries, Czechia has a significantly higher proportion of the second skill level (55 %), mostly in the form of craft and related trades workers (ISCO 7) and plant and machine operators and assemblers (ISCO 8). This corresponds with the country's vast manufacturing industry, focused on low-added-value manufacturing which demands these occupations. On the other hand, Czechia has the smallest proportion of the lowest skill level out of the monitored countries (6 %), while the economically highly developed Denmark has the highest proportion (10 %). From this we can conclude that as the Czech economy qualitatively moves to create innovations, engage in high-added-value work, or apply a higher rate of automation as witnessed in such developed states as Denmark, the economy may generate not only a need for high-skilled workers, but also a relatively great demand for unskilled labourers.

Chart 2: Percentage of professional groups by skill level (1–lowest, 4–highest)



Source: Eurostat, table code [lfsa_eisn2]

Czechia, Denmark, Germany, Estonia

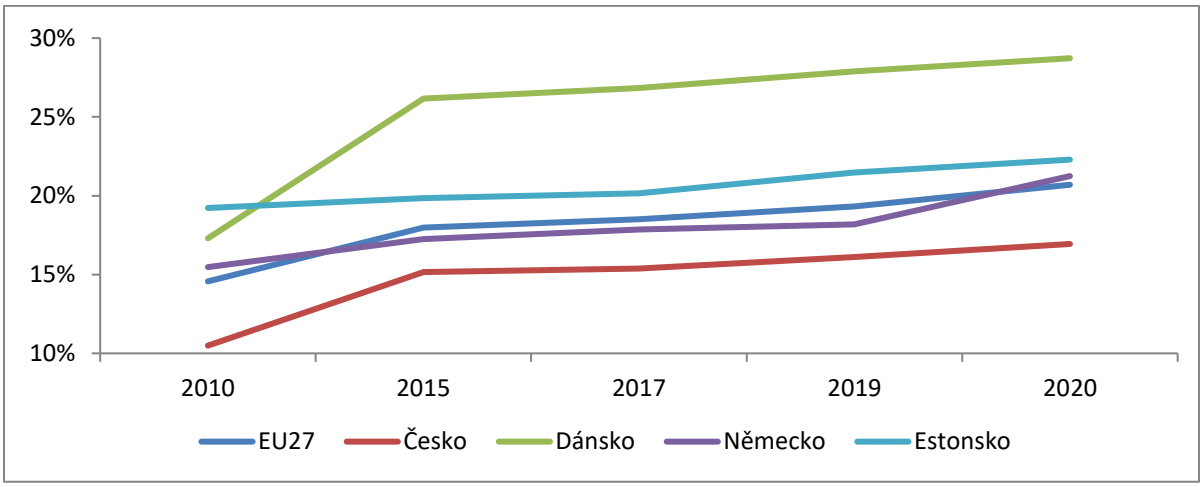
Skill level 1 *Skill level 2* *Skill level 3* *Skill level 4*

Changes in occupations commonality in the economy

Over the monitored period (2010–2020), the percentage of individual occupations in the observed economies and in the EU-27 changed. The following listing demonstrates significant value changes when comparing 2020 with 2010, especially substantial shifts in the ISCO 2 and ISCO 3 groups, briefly highlighting changes in occupational structure in other groups of occupations.

Rather significant upward changes were detected among professionals (ISCO 2)—see Chart 3. In respect to employees, the largest percentage was recorded in Denmark (by 11 %), followed by the EU-27, Germany, and Czechia (by 6 %, respectively); the lowest in Estonia (by 3%). Since Czechia's professionals constituted only 10 % in the base year, i.e. the lowest share in the monitored countries, the 6 % growth can be viewed as relatively small, especially considering the fact that in the economically highly-developed Denmark the initial value of 17 % increased to 29 %. Estonia's growth was smaller than Czechia's, though the local share of specialists is comparable to the EU-27's or Germany's.

Chart 3: Development of the percentage of professionals (ISCO 2) in selected economies

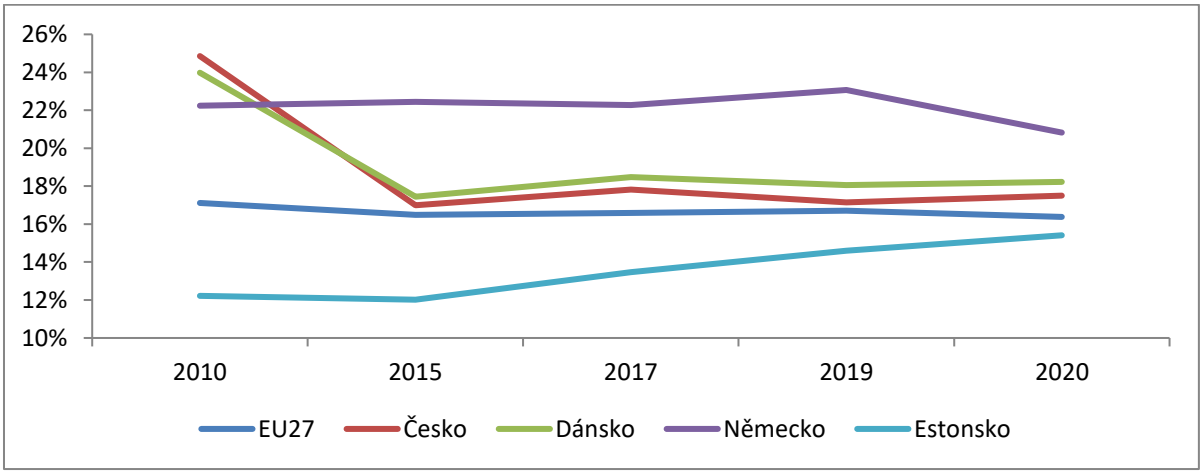


Source: Eurostat, table code [lfsa_eisn2]

Czechia, Denmark, Germany, Estonia

In most monitored countries, the percentage of technicians and associate professionals decreased—mostly in Czechia (by 7 %), then in Denmark (by 6 %), the EU-27, and Germany (1 %) Only in Estonia was there a 3 % increase, but the base position in 2010 was rather low and this occupational group remained the smallest out of the monitored countries in 2020 as well.

Chart 4: Development of the percentage of professionals (ISCO 3) in selected economies



Source: Eurostat, table code [lfsa_eisn2]

Czechia, Denmark, Germany, Estonia

In the legislators and managers group (ISCO 1), there was a 2 % drop in representation on the EU-27 level, just like in Denmark and Germany. In Czechia and Estonia, the decrease amounted to 1 %.

In the case of clerks (ISCO 4), the greatest structural shift was recorded in Denmark, with the group's size decreasing by 3 %. Conversely in Germany, clerks grew by 2 %, becoming the most common occupational group in the country.

In respect to service workers and shop and market sales workers (ISCO 5), the greatest increase was detected in Czechia (by 3 % to 15 %), overtaking Germany (13 %) and Estonia (12 %) as well as approaching the EU-27 (16 %) and Denmark (19 %).

Among skilled agricultural, forestry, and fishing workers (ISCO 6), there were no substantial changes in structure. In regard to craft and related trades workers (ISCO 7), their percentage in the monitored countries decreased—mostly in Germany (by 3 %). As for plant and machine operators and assemblers group (ISCO 8), their size either slightly dropped or stagnated, with the greatest decrease recorded in Estonia (by 3 %). Elementary occupations, too, (ISCO 9) saw slight changes of up to 1 %. The structure of ISCO 0 experienced minimal changes.

II.2 Unemployment in Czechia, at-risk population groups

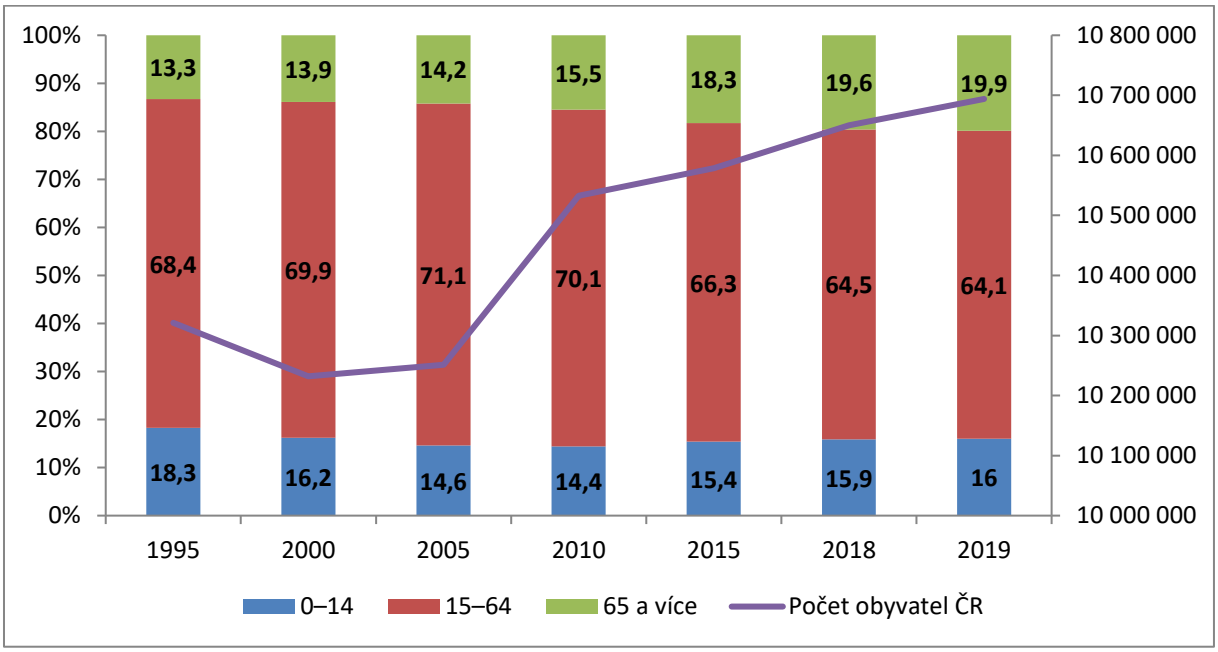
Development of unemployment in Czechia

This chapter discusses the development of unemployment in Czechia from 2010 to 2021[10]. In January 2013, the methodology for calculating the unemployment rate has changed. While the term *unemployment* used to designate the ratio of the unemployed to those economically active, now it means the ratio of the unemployed to all those of the relevant age[11]. This change in methodology results in a lower unemployment rate being calculated. Regarding the data being presented, this concerns mainly the comparison between 2010 (unemployment calculated as per the old methodology) and 2015 (new methodology) where a significant difference can be expected on account of the change.

Demographic development in Czechia affects employment as well. The former primarily takes the form of demographic aging, i.e. of the oldest group of unproductive age (65 and above) increasing in size while the youngest age group (up to 15 years of age) and the population of economically productive age (15 to 64 years) decrease. Looking at long-term development in Czechia (see Chart 5), we can see that the country's total population is rising but the percentage of those of productive age is declining. In terms of employment, this can mean that even less-demanded population groups can find employment, and also that there may, for instance, be a greater need for foreign workforce.

[10] Always as of the end of March of the relevant year.
[11] https://www.czso.cz/csu/czso/zmena_vypoctu_ukazatele_registrovane_nezamestnanosti20121107

Chart 5: Demographic development in Czechia as per age structure (left axis) and total population (right axis)

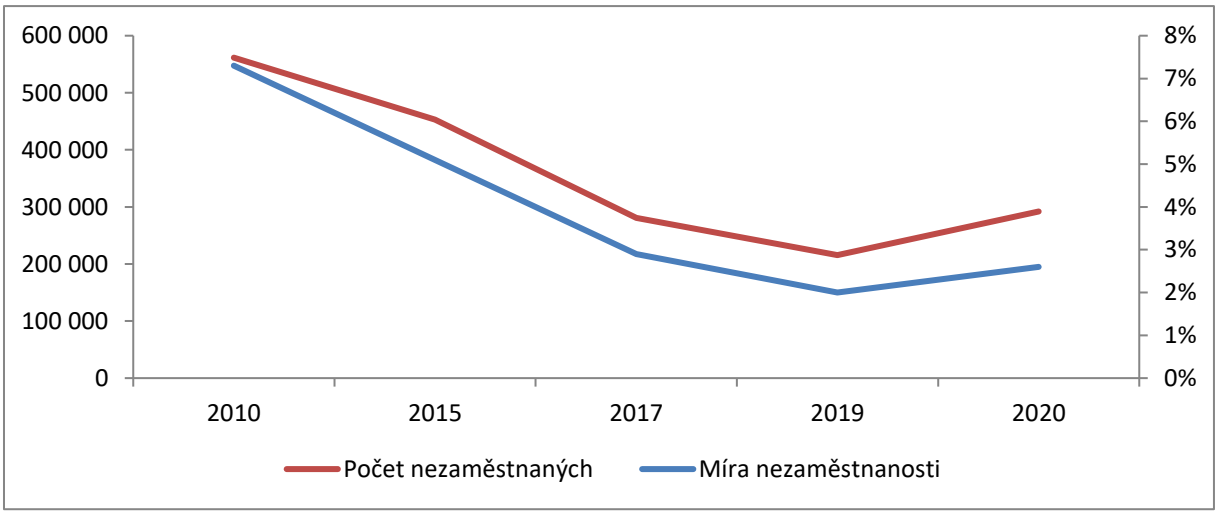


Source: https://eacea.ec.europa.eu/national-policies/eurydice/content/population-demographic-situation-languages-and-religions-21_cs

65 and above, *Czech population*

Over the monitored period, unemployment in Czechia tended to decrease (Chart 6). The relatively high unemployment in 2010 can be explained as having been caused by the final effects of the global economic crisis of 2008–2009. Gradual economic reconstruction and strong economic growth, especially after 2017, have been accompanied by a marked drop in unemployment, reaching 2 % in 2019. In 2020, unemployment grew, primarily as a result of the global COVID-19 pandemic, to almost 3 %.

Chart 6: Development of the number of the unemployed (left axis) and the unemployment rate (right axis) in Czechia



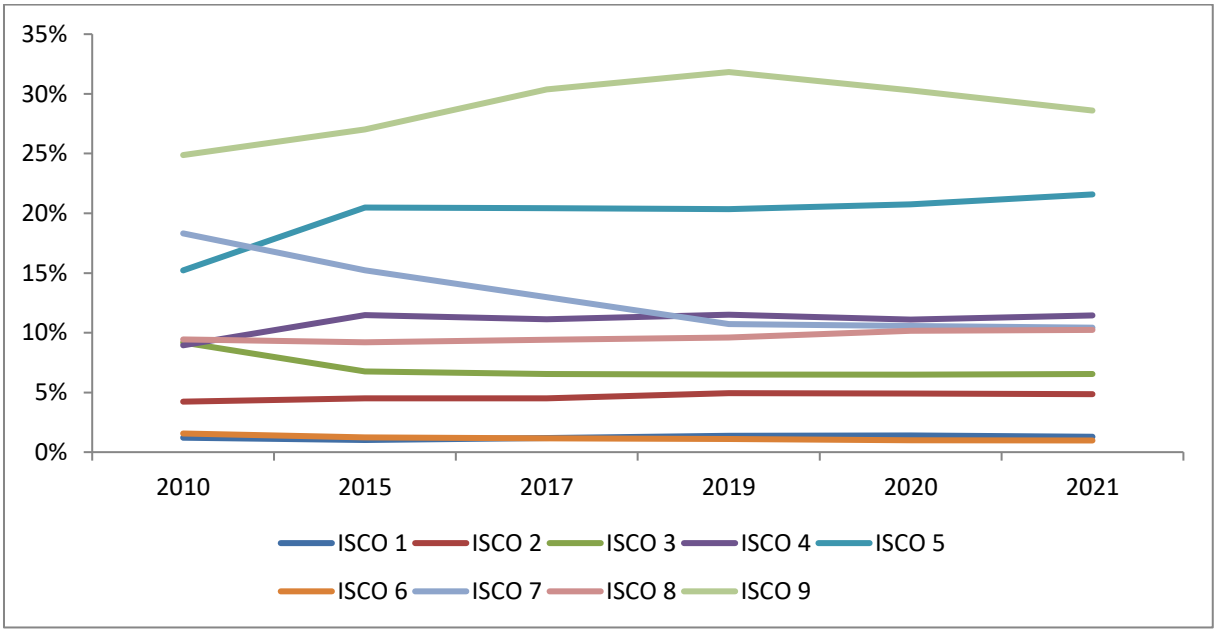
Source: MŠMT (statistiky nezaměstnanosti), Eurostat, table code [TEPSR_WC170]

Number of the unemployed *Unemployment rate*

Occupational structure of unemployment

Among the unemployed, those working in elementary occupations (ISCO 9), as well as service workers and shop and market sales workers (ISCO 5), constitute the two largest groups—as of March 2021, they constitute 29 % and 22 % of all the unemployed, respectively. Over the monitored period, the size of these two groups grew at the greatest rate (ISCO 5 by 6 %, ISCO 9 by 4 %). Conversely, craft and related trades workers (ISCO 7) saw a drop of 8 % and technicians and associate professionals (ISCO 3) by 3 % which can likely be attributed to a strong demand for skilled workforce in the Czech industry. Clerks (ISCO 4), too, have seen a 3 % decrease. When comparing the employment and unemployment structure, it is clear that elementary occupations (ISCO 9), service workers and shop and market sales workers (ISCO 5), and clerks (ISCO 4) are excessively represented in the unemployed population. The high-skilled ISCO 1, ISCO 2, and ISCO 3 groups are less represented in the unemployed population, along with skilled ISCO 7 and ISCO 8 workers who tend to find employment in the manufacturing industry.

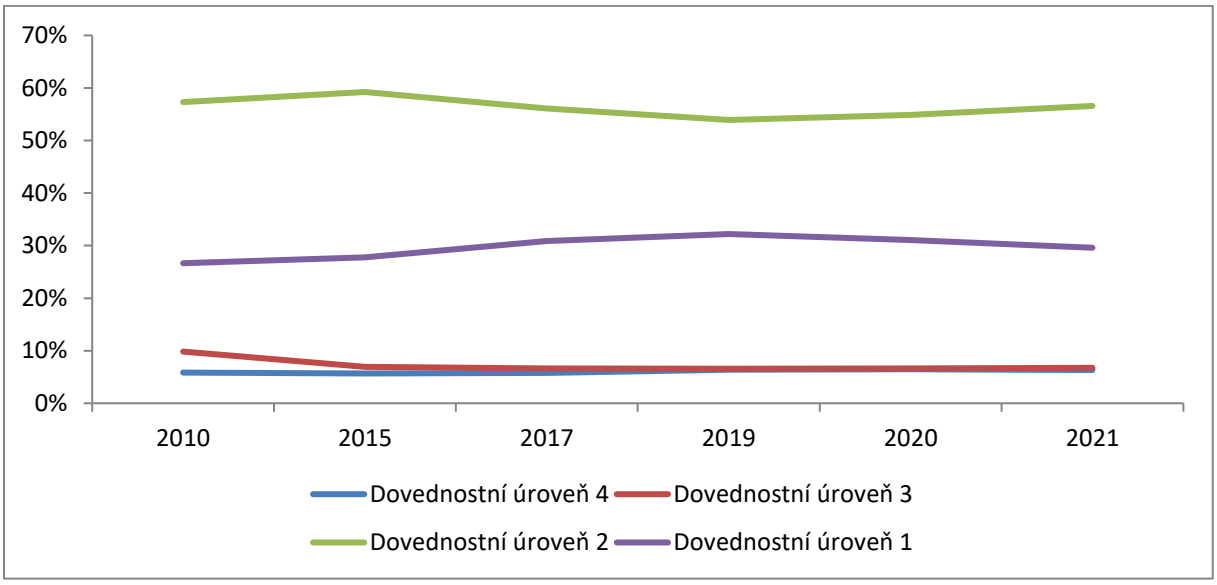
Chart 7: Development of the occupational structure of unemployment



Source: MŠMT (statistiky nezaměstnanosti)

When classifying unemployment by skill level (see Chart 8), it is clear that the structure saw no significant changes over the monitored period. The size of the 3rd skill group decreased by 3 % while that of the 1st skill group grew by 3 %. The 4th skill group saw a 1 % growth, mirrored by a 1 % drop in the size of the 1st skill group. Thus, there is a trend of less-skilled and unskilled workers being increasingly represented among the unemployed.

Chart 8: Development of the structure of unemployment by skill level (1-lowest, 4-highest)



Source: MŠMT (statistiky nezaměstnanosti)

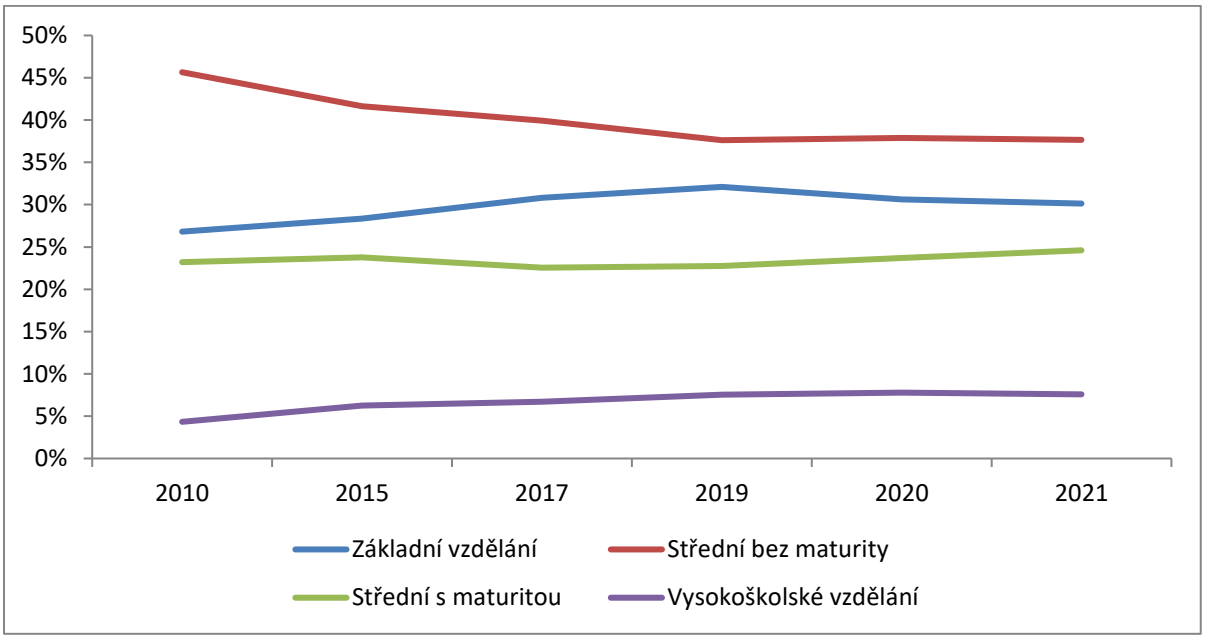
Skill level 4 *Skill level 3* *Skill level 2* *Skill level 1*

Educational structure of unemployment

As of March 2021, the educational groups most represented among the unemployed are people with a secondary education without matura (38 %), an elementary education (30 %), and a secondary education with matura (25 %); the college-educated enjoy the lowest percentage (8 %). Over the monitored period, there were rather substantial shifts in percentages. The greatest change occurred in the case of those with a secondary education without matura whose percentage dropped by 8 %. Still, this group constitutes a larger segment of the unemployed than of the general population. Conversely, the number of the college-educated grew (by 3 %) but their representation among the unemployed was much lower than in the general population. The number of the unemployed with an elementary education grew by 3 %, with this group being excessively represented among the unemployed when compared with their share in the general population. In the unemployed population, the proportion of those with a secondary education with matura increased by 1 %.

The decline in the numbers of those with a secondary education without matura needs to be interpreted within the demographic context as this group's share in the population has long been decreasing. Conversely, the numbers of the college-educated have been increasing. As far as the growing numbers of the unemployed with an elementary education as concerned, this trend is not rooted in demographic development as the percentage of people with an elementary education is decreasing in the population. The percentage of those with a secondary education with matura, both among the unemployed and in the population, has seen no substantial changes since 2010.

Chart 9: Development of the educational structure of unemployment by educational attainment



Source: MŠMT (statistiky nezaměstnanosti)

Elementary education, Secondary without matura, Secondary with matura, College education

III. Labour market flexibilisation and new forms of employment

Flexibilisation of the labour market involves and occurs due to modern technologies, primarily ICT. Standard employment still predominates, though the labour market is starting to be characterised by increasingly diverse forms of work. Certain new forms of employment are expected to keep becoming more common due to the sharp increase of the use of digital technologies, pressure to improve productivity, and demand to satisfy customers' requirement in a flexible manner. Work flexibilisation occurs both by expanding upon the well-known, long-present, less standard forms of employment such as fixed- and part-time employment, and owing to the emergence of entirely new forms of work and employment which have been dynamically expanding over the past few decades.

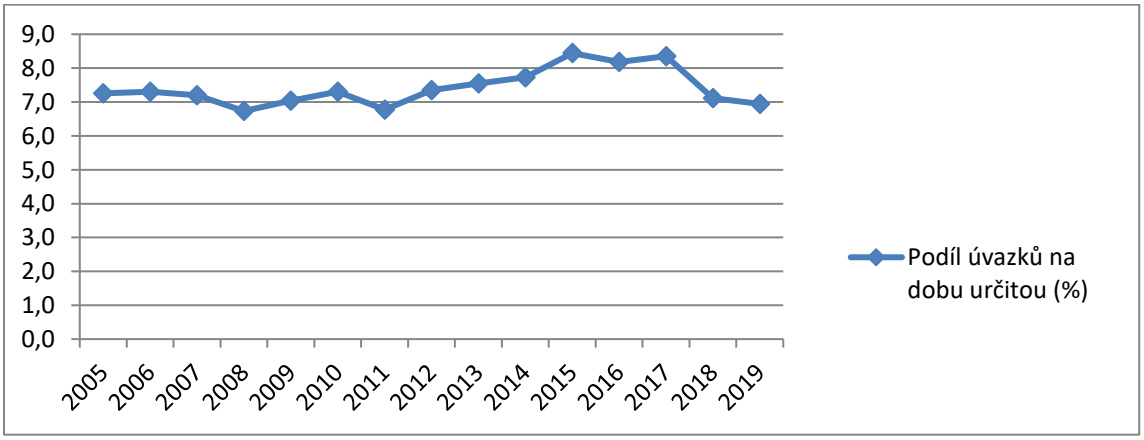
Many new forms of employment are based on the need to make relationships between employers, consumers, and workers more flexible—certainly a welcome change. On the other hand, it is essential to make sure such a flexibility does not reduce worker protection and security. Equal rights and opportunities must be provided to all workers, regardless of the form of their employment, especially as regards working hours, remuneration, occupational health and safety, social protection, and education.

III.1 Fixed- and part-time employment

III.1.1 Development in Czechia

Flexible forms of work which have long been present in the Czech labour market include fixed- and part-time employment. The number of **fixed-term employment** contracts has dropped in Czechia over the past few years, as did their share in the total employment; however, its long-term development does not manifest a clear trend and has been oscillating around ca 7 %. Fluctuations in this type of contracts partially correspond with the development of the economy and overall demand for workforce, and are likely caused by the flexible intake and letting go of workers who would otherwise not participate in the labour market, such as students and senior citizens.

Chart 10: Development of the percentage of fixed-term employment



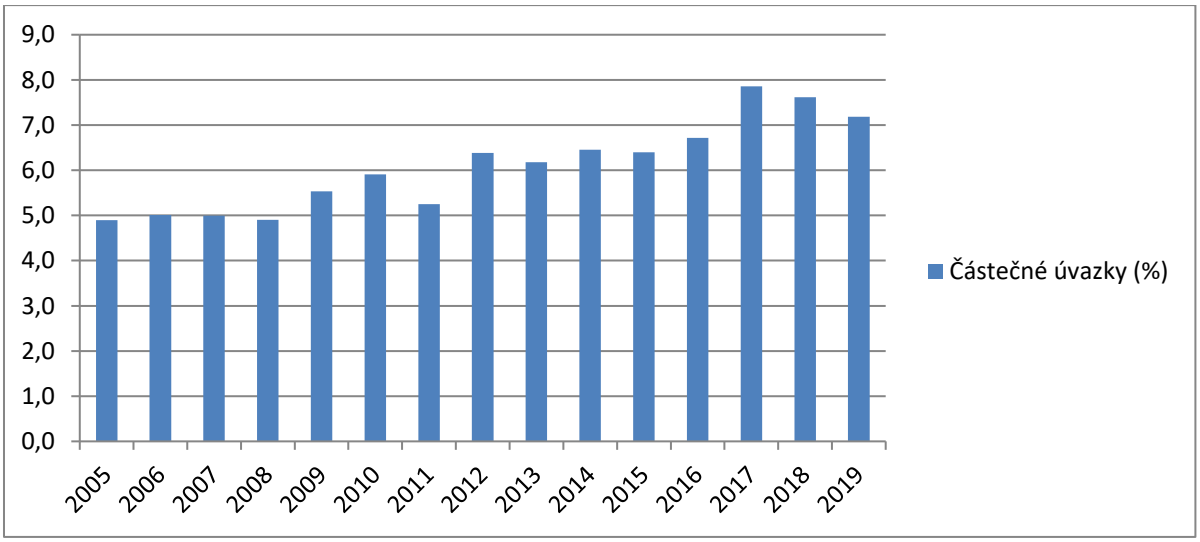
Source: ČSÚ: Výběrové šetření pracovních sil (2019), author's calculations and treatment.

Percentage of fixed term employment

Unlike fixed-term contracts, **part-time employment** (employment involving shorter working hours) which tends to be permanent if under the umbrella of main employment (i.e. concluded for an indefinite period of time), has long manifested an upward trend. From 2005 to 2019, its share in main employment contracts grew from 4.9 % to 7.2 %. Still, it is one of the lowest in the EU where 18 % of employees on average worked part time. In Germany, for instance, the figure was 28 % and in the Netherlands even over 50 %. These differences are influenced by several factors, including a different structure of the Czech economy, primarily the great size of its industry and small size of its services, a sector which tends to generate more part-time jobs. Other factors include a low employment rate of mothers with small children or people from peripheral age groups which are the ones using this type of employment the most. Additionally, part-time employment may be partially kept from being applied more broadly by the minimum healthcare payments, calculated as 13.5 % of the minimum wage. This is the case if part-time employment does not amount to the minimum wage.

In European countries, the percentage of part-time employment keeps dynamically growing (by almost 13 % within the past ten years). A similar development is beginning to occur in Czechia and can be expected to intensify in the future.

Chart 11: Development of the percentage of part-time employment (as main employment)



Source: ČSÚ: Výběrové šetření pracovních sil (2019), author's calculations and treatment.

Part-time employment (%)

Although Czechia has long been a country with one of the lowest commonality of flexible and part-time employment in Europe, these types of employment are increasingly being offered. The COVID-19 pandemic has contributed to this as many employers changed their views of less traditional forms of work. Such employment contracts are being offered in the case of administrative jobs, the IT or finance sector, haulage or transport services (especially to drivers), healthcare, social, and nursing services, delivery services, household services, security, and other services.

Part-time work provides large groups of job applicants with flexibility, allowing them to achieve a better work-life balance. Part-time employment, for example, makes it easier for parents to enter the labour market, especially for mothers with little children; the same applies to people with disabilities or students who would like to gain practical experience or earn income while studying. Part-time

employment also tends to be sought after by professionals who work on multiple projects for multiple employers simultaneously.

On the other hand, so-called underemployment remains a somewhat common issue in Europe. On average, almost one quarter of Europeans of productive age (15–64 years) who work part-time do not do so of their own will, rather because they were unable to secure full-time employment. In Czechia, this is not a significant issue at the moment as unwilling part-time employment comprises only ca 5.5 % of the total amount of part-time employment contracts and the number of such job applicants who do not manage to find any other job opportunity than part-time employment dropped to roughly a half over the past decade (see Table 2 in the Annexe). Women comprise more than two thirds of the total number of the underemployed[12].

Despite this low volume of involuntary part-time employment, the issue needs to be monitored in Czechia since, as demonstrated by European trends, part-time jobs are not only becoming more common due to the creation of new opportunities in the service sector, but are also beginning to replace or eliminate full-time jobs in such traditional sectors as industry or construction[13].

Even when part-time work is being performed voluntarily, issues may arise regarding the working conditions and social security of employees working part-time. For instance, workers with shorter working hours and lower wages often have to do much more work than what is implied by the form of their employment. Long-term part-time employment has other negative effects as well. It can, for example, negatively affect the amount of the worker's future pension as part-time workers earn less and thus pay less into the social security system. Additionally, low earnings make it impossible to create alternative sources of financial security for old age, not to mention the risks associated with any unexpected changes in one's living situation. In many cases, these workers have a smaller opportunity at receiving support from their employer when it comes to their professional development and career advancement.

III.2 New forms of employment

Due to digitisation and remote work, standard forms of employment, although still the predominant form of working relationships, are being increasingly transformed into an expanding range of flexible work forms. A recent Eurofound study[14] on the labour market trends in the EU countries defined several new models of working relationships. According to the Eurofound's definition, new forms of employment are characterised by one or more of the following: relationships between employers and employees differ from established individual employment, with a single worker being able to have several employers; multiple workers can hold a single job; an employment form combines both of the former types; work does not always have to be performed at an employer's workplace. Some new forms of employment deal with the issue of workers' unclear status, contributing to the segmentation

[12] Ministry of Labour and Social Affairs: Development of employment and unemployment in 2019—analysis
[13] PES Network – European Public Employment Services: Part-time Employment. https://www.pesnetwork.eu/cs/2019/11/05/lmb5-part-time-employment/
[14] Eurofound: New forms of employment – 2020 update. The study was based on a 2020 survey conducted in the EU Member States, Norway, and the United Kingdom. Available online: https://www.eurofound.europa.eu/publications/report/2020/new-forms-of-employment-2020-update.

of the labour market. Eurofound defines nine new forms of work[15]: i) employee sharing; ii) job sharing; iii) interim management; iv) casual work; v) ICT-based mobile work/work from home; vi) voucher-based work; vii) portfolio work; viii) crowd employment; iv) collaborative employment.

The public, experts, social partners, and public policy-makers in Czechia have recently focused mostly on the issues of remote work, job sharing, or crowd employment, a very delicate subject. Some new forms of employment may be negatively affected by the impact of the COVID-19 pandemic on the economy and labour market. Discussions are being held, though elementary measures have also been taken in terms of the Czech labour legislation. For this reason, some problems associated with these forms of employment are further detailed in the following subchapter.

Worker discrimination in flexible forms of employment—working conditions and access to education

Since 2005, Eurofound analyses have been mapping the progress achieved in regard to improving working conditions. In its 2021 analysis[16], the agency evaluates which groups are threatened the most with poor working conditions and consequently lag behind others. The analysis shows that job quality has been improving overall across the EU. Not all workers benefit from this positive trend equally—gender, age, and contractual status have a significant effect on a person's working conditions. Although digitisation helps solve some problems related to job quality, it poses new challenges as well. The COVID-19 pandemic has worsened existing trends, intensified concerns, and emphasised the importance of achieving job quality and worker protection.

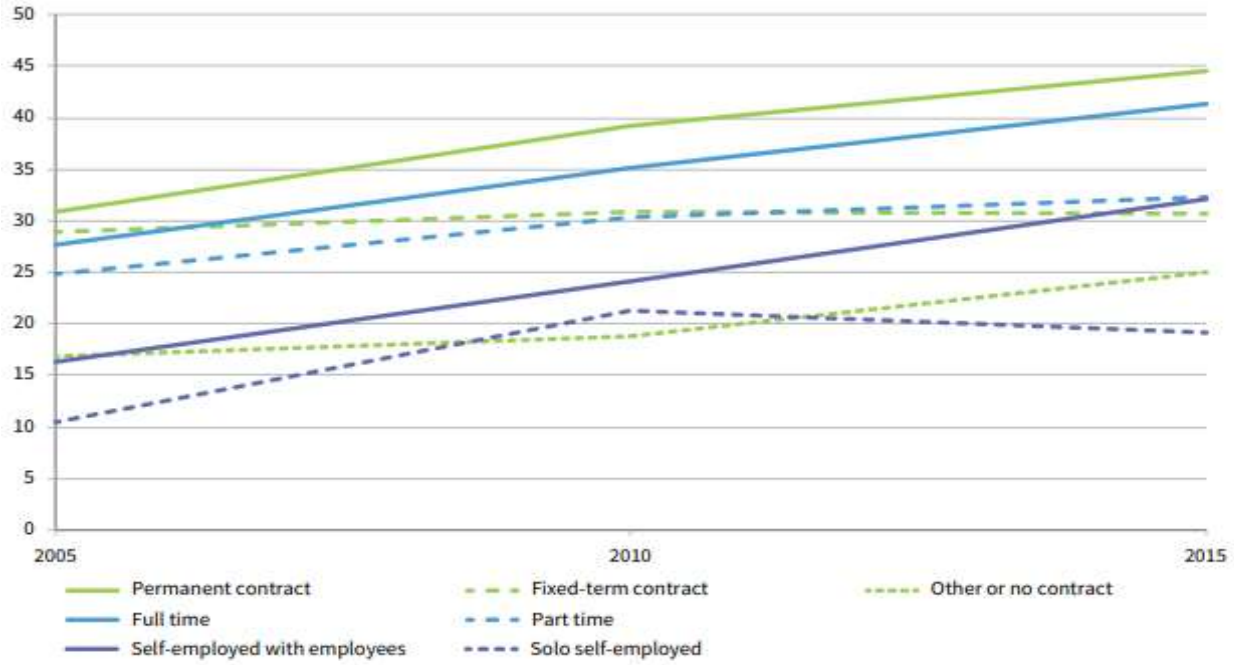
Nowadays, jobs require more skills and offer more independence than before. This is reflected in the improvement of the skill index. Development of workers' skill is hindered by unequal access to employer-paid education. Older workers participate in fewer training courses and the access gap between employees of different contract statuses (full-term employment vs. part-time employment and permanent fixed-term employment) is widening.

Training participation in relation to the nature of employment contracts

As shown by the Eurofound survey, the overall extent of employer-provided training has increased but so did the differences between types of contracts and the number of working hours—significantly so. In 2015, there was a 14 % difference between the percentage of permanent employees and fixed-term employees who took part in a training sometime in the 12 months preceding the survey—a 12 % increase since 2005 (See Chart 12). Similarly, a gap is opening between workers of different employment lengths: in 2015, 41 % of full-time and 32 % of part-time employees took part in training, compared to 28 % of full-time and 25 % part-time employees in 2005.

[15] Eurofound's definition does not include fixed-term employment, part-time employment, and agency work, i.e. forms which are already established and more or less regulated by national legislations.
[16] Eurofound (2021): Working conditions and sustainable work: An analysis using the job quality framework (Working conditions and sustainable work: An analysis using the job (europa.eu)

Chart 12: Rate of participation in paid education (in %) by employees' working status (EU average, incl. United Kingdom)



Source: Eurofound (2021): Working conditions and sustainable work: An analysis using the job quality Framework.

To get a more three-dimensional picture, let us consider the concurrent effect of multiple real factors when assessing impact on individual groups, such as workers' status, length of employment, age, qualifications, and other characteristics. As per an Eurofound analysis, younger groups are more likely to undergo training than older workers, though they are also more likely to conclude a fixed-term employment when compared to older workers (Eurofound, 2018b). In the case of women, there is a higher probability of part-time work when compared with men, creating a persisting gender equality issue in the form of insufficient access to further education. Formal education and qualifications also play a role—employees with lower attainment are less likely to participate in employer-paid training.

Deepening differences in the provision of paid training between workers of different contractual statuses (full-time vs. part-time contracts or fixed-term to indefinite-term contracts) are concerning as the environment of rapid technological changes may trap these workers in a position of low qualifications and low earnings. Reasons for these differences are multifold, from workers' preferences and availability to employers not being incentivised enough to invest in temporary employees and part-time employees. Thus, further education and support of such workers' professional career should be promoted by social partners and policy-makers.

III.3 Platform work—Crowdworking

This type of paid work is done via online platforms which give access to work or customers to a large number of independent individuals or institutions fulfilling certain tasks or providing certain services. In this manner, platform-operating companies offer a wide range of services (described below), though

they do share a common framework of so-called triangular working relationships—between the platform, worker, and customer. Platforms arrange this relationship, facilitate payment, and sometime monitor and manage the performance of work, including the price. Usually, platforms also allow customers to rank the worker fulfilling the task, using these ratings in their monitoring and control procedures. Platform-based businesses strive to obtain a commission for each transaction, typically ranging from 10–30 % of the transaction's value.

This type of work oscillates between paid work and self-employment. Workers performing tasks via a platform have an uncertain status, being frequently viewed as self-employed although their actual position approximates that of employees, without the due protection employees enjoy. Crowdworking is increasingly common in such sectors as IT, design, the creative industry, transport, tourism, or household services of a craft, social, or auxiliary nature. There is a wide range of occupations which practice this type of hiring, from high-skilled (ICT professionals, designers) to unskilled professions or amateurs. They also overwhelmingly employ students who use this form of work to earn some income while studying.

The operation of job platforms is subject to general business and civil laws, though the work itself as provided through said platforms is not protected in any manner (wages, working conditions, intellectual property, social protection). Moreover, in regards to some platforms in specific fields, there have been repeated reports of evasion or failure to fulfil financial regulations (especially as regards fulfilling one's tax obligations), as well as failure to adhere to administrative regulations (doing business without possessing the required trade licences is common). From the perspective of labour legislation, there are clear violations of labour law and employment regulations, not only by platforms but also by other entities which avail themselves of the platforms' anonymity and unwillingness to share data with government bodies.

Although no accurate records of people engaging in crowdworking exist, there are partial estimates and field surveys. According to Eurofound findings, approximately 11 % of the EU workforce state they have used a platform to provide a service at least once[17]. Based on this, we can conclude that while the number of these workers keeps growing, the growth's dynamic is not strong and does not reach the original alarming estimates. The overall share of this type of work in the total employment remains low. Furthermore, most crowdworkers use platforms as a source of additional income, with their main source typically being full-time employment, however uncertain and poorly paid (Joyce et al., 2019).

Platforms directly affect the way work is organised, as well as the workers' wages and working conditions. Many aspects of crowdworking can be both potential risks and opportunities if utilised well. The **most frequently mentioned advantages and opportunities** include the fact that when compared with traditional employment this form of work gives workers more space to achieve work-life balance more flexibly. However, this advantage may fade over time as the performance of work in standard employment becomes more flexible as well.

Expansion of working opportunities and elimination of obstacles preventing one from entering the labour market are other benefits introduced by crowdworking. It is evident that platform economy can promote employment growth as, due to there being essentially no formal requirements for performing work in the labour market, it can offer new opportunities, mostly to groups which have so far been

[17] https://ec.europa.eu/commission/presscorner/detail/en/qanda_21_656

disadvantaged. Anyone can avail themselves of this opportunity, a significant benefit to those who find it difficult to access the traditional labour market, on account of e.g. discrimination factors (age, gender, ethnicity…), little to no experience in a given field or in the labour market as such (graduates…), due to having little time or being busy with other duties (parents with small children, people caring for children and other relatives, students, etc.), or people otherwise disadvantaged in the labour market. Free access to the labour market also has significant consequences in terms of the acquisition of new skills. Workers who find themselves at the start of their career, without experience, or try to succeed in another field than the one where they have been chiefly employed so far, can gain working experience, independence, and develop their professional skills, sometimes even their entrepreneurial spirit.

On the other hand, crowdworking is associated with **relatively many risks and disadvantages**. An OECD study[18] identifies three basic areas where workers are disadvantaged when these forms of work are compared to others. They are primarily a) significantly fewer opportunities to develop professionally, due to lower access to education; b) unstable working relationships, as well as a danger of excessive workload; and c) low, less stable income, slow wage growth, and a danger of high wage loss.

Education

Essentially, crowdworking is possible regardless of any formal qualifications, i.e. no matter if the worker is officially licenced to perform a specific task or if they have relevant education or practical experience. What determines the value of their skills and quality of their work are the review systems platforms use to rate individual workers. The situation of platform workers differs from that of traditional employers in terms of access to further education and its availability. Unlike standard employees whose education is provided and paid by their employers, platform workers are responsible for their own education. This is an additional investment in terms of time and financial expenditures[19]. Findings show that crowdworkers most often improve those of their technical skills which are relevant to the online platform's operation. On the other hand, they frequently acquire a unique mixture of entrepreneurial, communication, and organisational skills and capacities, associated with the building of their brand. Ability to learn is a necessity.

Almost 60 % of the platform workers participating in the survey developed their skills at least once a week. Just like in all workplaces, the need to learn in crowdworking is closely related to the performance of work assignments and fulfilment of clients' requirements. Workers are motivated to learn chiefly by client feedback and by the skills required in job offers. Since most platform workers already have a basic level of professional "soft" skills, they tend to seek out targeted online courses and short educational programmes to develop the professional skills required in their field. When learning and seeking new information, they prioritise educational programmes on YouTube and Google since these are free (as they receive money from advertising) and quick. Conversely, MOOC courses are viewed by crowdworkers as too long since they excessively focus on the acquisition of basic skills which these workers already possess. The same applies to school courses. Expansion of various forms

[18] OECD (2015): In it together: Why less inequality benefits all. OECD Publishing, Paris. Available online: http://www.oecd.org/social/in-it-together-why-less-inequality-benefits-all-9789264235120-en.htm.
[19] Cedefop (2020). Developing and matching skills in the online platform economy: findings on new forms of digital work and learning from Cedefop's CrowdLearn study. Luxembourg: Publications Office. Cedefop reference series; No 116. http://data.europa.eu/doi/10.2801/588297

of informal learning and micro-education poses a significant problem for the existing processes of skill verification and for the overall relevance of formal systems of qualification and education. The trend can be expected to intensify in the future.

Support for a skills and reputation portfolio, transferable across platforms

Since the mechanisms of worker evaluation by clients are specific to individual platforms, this type of information is not transferable and workers cannot switch to another platform without affecting their own income. A transferable portfolio would promote each worker's mobility, making it easier for them to find employment in the labour market. However, instituting transferability of certified skills, working experience, client reviews and references, and other data of this type poses a substantial challenge, among other reasons due to limited standardisation capacity, different technical infrastructure and communication models of individual platforms, and last but not least regulations on personal data protection. Dialogue between governments, social partners, and main professional platforms is needed if these obstacles are to be overcome. One proposal which might facilitate the transferability of platform workers' experience and references hints at the creation of an independent public portal where workers would be able to upload their portfolios with relevant information, certificates, customer references, etc. The portal might function as a digital passport of professional qualifications, overcoming the limitations of individual platforms.

Social security

The issue of platform workers' status is closely related to that of their access to social security. Social security systems are funded from mandatory payments by employers, employees, or both. Crowdworkers usually enjoy lower (or no) labour protection and often do not contribute to the social security system at all, or only very little. Their right to social protection and its scope is very unclear, chiefly due to their uncertain status (i.e. whether they are employed or not). Since in most cases, platform workers are not legally viewed as employees, they need to rely on a system designed for the self-employed. This system, however, is not sufficient for most crowdworkers due to their limited independence, low wages being earned, unstable income, etc.; factors which complicate the workers' social situation not only in the short, but long term negatively impact the amount of their future pension.

Thus, it is advisable that a new model of funding the social security system be designed. In some countries, such models are already emerging. One way is to create a special status to extend protection to platform workers, similarly to how it is currently being extended to those working part-time, for a fixed-term, and to agency workers. If such a status is introduced, professional platforms might contribute to at least some tools of these workers' social protection. Nevertheless, there are problems in terms of definition and harmonising with the rest of the national legislation. Another solution is to institute the transferability of benefits by creating secure individual accounts where social entitlements would be recorded regardless of employer and from which entitlements would be satisfied. There are also proposals to have platform workers' ultimate employer pay into the social security system, as they would if these workers were their own employees.

III.4 Issues associated with new forms of work, grounds for solution

New forms of work not only expand the number of job opportunities, but also bring about much flexibility, independent decision-making, and many other worker benefits. On the other hand, there are significant risks which is why the effect of new forms of work in the labour market should be consistently monitored and analysed.

The European Commission launched an initiative concerning the operation of platforms and the issue of crowdworking. In 2020, the Commission entered the first stage of social partner consulting, defining the following areas as a matter of priority in need of improvement[20]:

- employment status;
- working conditions, including occupational health and safety;
- access to reasonable social protection;
- access to collective representation and bargaining;
- cross-border dimension of platform operations;
- algorithmic management issues;
- access to training, professional opportunities, and career advancement options.

The COVID-19 crisis has accelerated digital transformation and expansion of platforms' business models in the internal market. Some platforms have played an important part in securing access to services in lockdown conditions and expanded their job opportunities. On the other hand, measures protecting public health worsened the uncertain working conditions of large numbers of crowdworkers. As a result of the pandemic, health and safety hazards intensified in some cases due to high exposure to the virus and insufficient measures being in place to protect crowdworkers.

While the European Commissions established a priority direction of the European crowdworking initiative during the first stage of social partner consultations, the second stage, held as of the start of 2021, strives to elaborate the content of the initiative's individual spheres of issues. This process allows European social partners to directly influence proposal-making in regards to European social policy recommendations.

In some countries, there are also interesting initiatives being formulated at the instigation of governments, unions, employer organisation, even the crowdworking community itself (workers and the platforms) to address emerging problems. Most of these initiatives are new and so far small in scope. Eurofound[21] has set up a web storage where this information is gathered and made accessible to the public, allowing users to look up examples of EU country initiatives concerning the following areas: i) counselling for crowdworkers on their rights, remuneration, occupational health and safety standards, etc.; ii) implemented arbitrages (court case interpretations); iii) examples of information campaigns, overview of available data (statistics, research, analysis); iv) codes of conduct, standards (agreements on conduct and rules regulating the relationships between platforms, their workers, and customers); v) overview of implemented collective actions and bargaining concerning working

[20] Questions and Answers: First stage social partner consultation on improving the working conditions in platform work. https://ec.europa.eu/commission/presscorner/detail/en/qanda_21_656

[21] Eurofound - Platform Economy Repository: https://www.eurofound.europa.eu/data/platform-economy/initiatives

conditions, examples of collective agreements; vi) legislation overviews (taxes, sector-specific regulations); vii) review and reference systems (including options for workers to review platforms); viii) examples of insurance and social protection; ix) overview of methods and of organisations representing platforms and workers.

Currently, the European Commission is addressing the option of extending collective bargaining to the self-employed, including those working via platforms. In 2021, the Commission entered into the first round of social partner negotiations on the issue of collective agreements for the self-employed[22].

New forms of employment are rather diverse and may be both subject to general labour laws or special regulations, or regulated by collective agreements or not regulated at all. When evaluating new forms of employment, focus must not be solely on employees (i.e. employment contract issues); instead, it is necessary to address the problems facing the self-employed (i.e. civil law or service provision contracts). Legislative rules should be established to regulate the status of this type of work, responsibilities of the parties involved, rules of fair remuneration, workers' right to social and health insurance, or consumer protection. The social security system, including employment services, should be modernised to provide adequate support to workers who find themselves at a critical point of their working life, to reduce their risk of uncertainty in case of wage loss or sickness, and to promote their career development via financial or other tools which facilitate ongoing education and certification of new skills. Among other things, tax tools (tax concessions, negative tax, etc.) could be increasingly applied to this purpose. Trade unions should promote these goals as a part of tripartite negotiations.

[22] https://ec.europa.eu/commission/presscorner/detail/en/qanda_21_656

IV. Education of employed persons in Czechia, international comparison

Employee education plays an important part in the operations of businesses, especially as regards the introduction of new technologies in all of institutions'' procedures, regardless of whether these are industrial businesses or service-providing organisations. For each party to this relationship, i.e. employees and employers, education means expending certain costs and acquiring certain benefits.

Labour shortages often affect the way in which businesses approach their employees. Businesses have a greater interest in retaining their workers even if certain jobs are being eliminated or if their description is changing. By training and educating workers who are thus being made available, companies try to give them the skills and knowledge necessary for the performance of new or transformed jobs, provided this is feasible in view of the workers' current knowledge and skills.

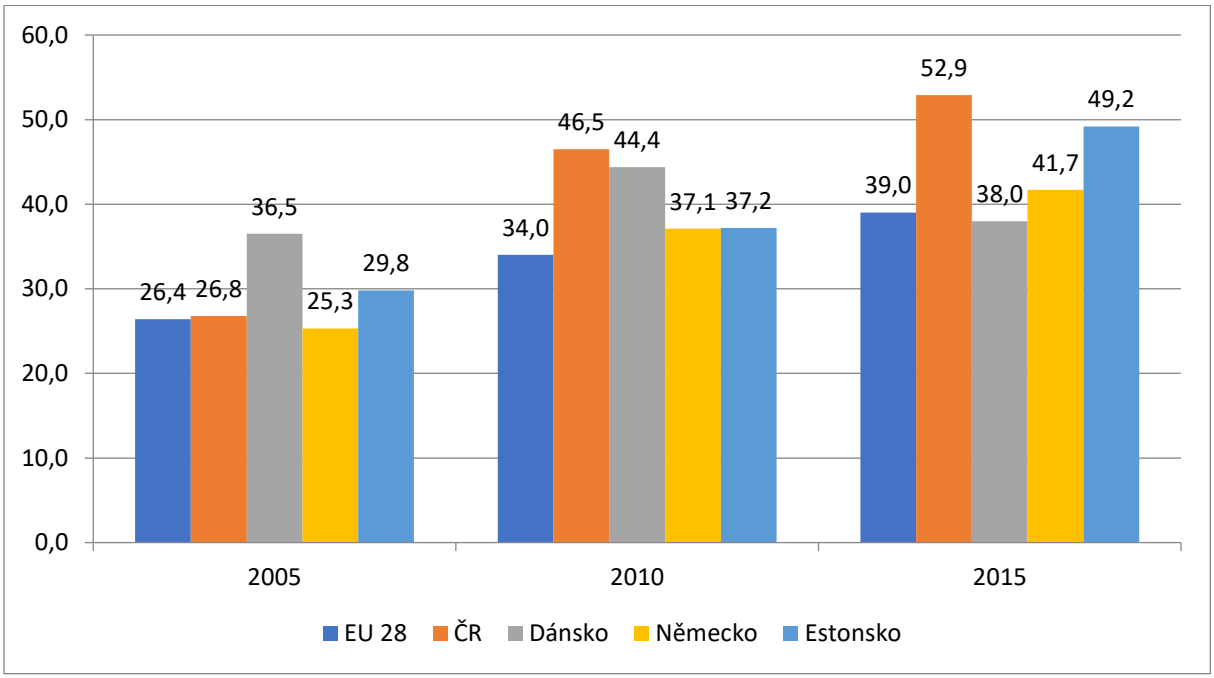
The situation of employees in Czechia in regards to their participation in informal education related to their jobs, compared with the EU Member States, is evaluated using surveys conducted by the European Foundation for the Improvement of Living and Working Conditions (Eurofound), a tripartite EU body. These European Working Conditions Surveys (EWCS) are conducted once every five years and monitor selected aspects of working conditions, one of them being education and professional training of employed persons. The survey is implemented by means of individual interviews in individual countries. This study uses results of the past three surveys, i.e. those for 2005, 2010, and 2015. The newest survey (EWSC 2021) had been carried out this year, from March to June.

IV.1 Participation of employed persons in informal professional education

In EWCS, employed persons comprise not only employees, but also the self-employed. As evident from the question posed, informal education related to an employed person's job includes both education paid by the employer, and education paid by the self-employed or employees from their own funds. The survey results give us information on the importance employers and employees themselves assign to further education. Presumably, employer-paid education is the predominant type.

In terms of employee participation in informal education, Czechia's situation is compared with the EU average which includes those countries which were EU members at the time of the survey's execution, and with Germany, Czechia's main business partner whose economy assigns relatively strong importance to the manufacturing industry, as does Czechia's. Denmark and Estonia, countries characterised by high-quality use of information technologies, were also included in the comparison.

Chart 13: Participation of employees aged 15–64 in job-related informal education and professional training in the past 12 months (%, 15–64 years)



Source: Eurostat, Eurofound, code table [QOE_EWCS_6_1]

Czechia, Denmark, Germany, Estonia

As illustrated by ChartChart 13, the rate at which **employed persons in Czechia educate themselves exceeds the EU 28 average**, in all of the three years when the survey was conducted. Additionally, Czechia's lead over the EU average grew in the second and third year. In these two years, the country **excelled** in comparison to the other countries. Almost 53 % of the employed aged 15–64 participated in job-related informal education. Czechia also saw the greatest increase of the percentage of employees being educated in 2015 when compared with 2005. In this period, the number of employees being educated increased by 26 %, with Estonia seeing the second greatest increase of 19 %. Denmark was the only sample country without a gradual increase of the employee participation in informal education indicator, its growth trend interrupted in 2015 when the indicator's value dropped somewhat sharply when compared with 2015—by 6 %.

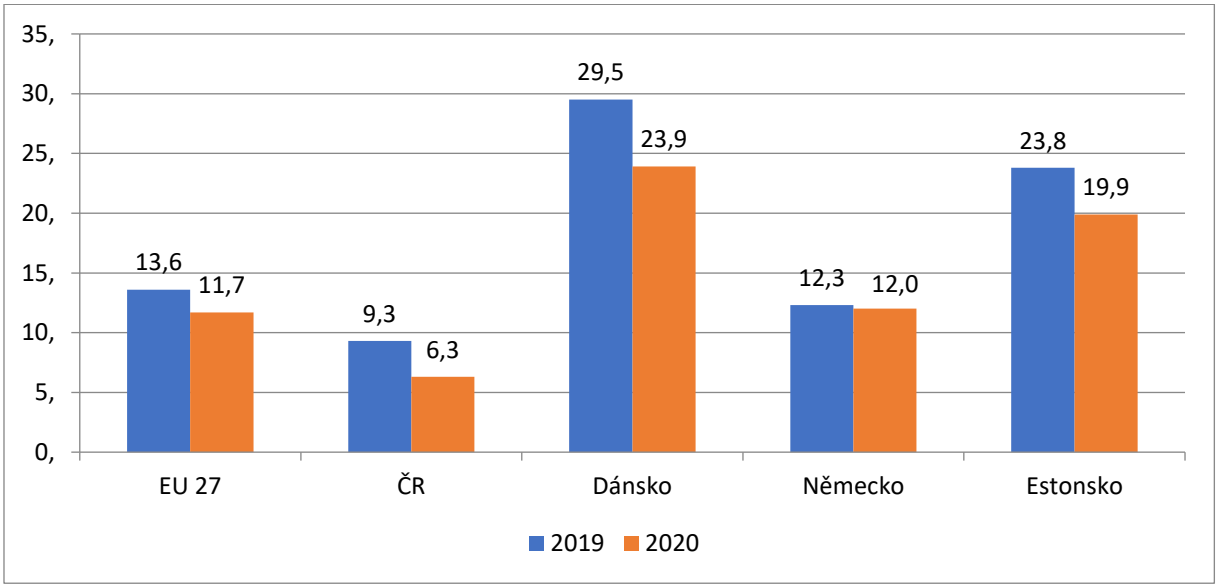
Czechia's excellent position among the compared countries, however, does not equal an exceptional position in the EU 28. Finland had the highest participation rate in all three years (see Table 3 in the Annexe) as more than 50 % of the countries employed persons was in informal education as early as in 2005. The figure rose to 55 % by 2015, i.e. surpassing Czechia by 3 %. Countries where employed persons' rate of participating in informal education and professional training surpassed 50 % also included Ireland (50.9 %), the United Kingdom (50.6 %), and the Netherlands (50.5 %).

In Czechia, similarly to the EU-27 average[23] and the other countries being compared, the **employed population educated itself at a lower rate in 2020 than in the previous year**. In this respect, the pandemic situation was handled the best by those employed in Germany where the education

[23] Since the UK terminated its EU membership, the only available data is for the EU-27 average in 2020, with Eurostat having recalculated the values for the EU-27 for previous years as well.

participation rate essentially remained the same. The greatest drop was seen in Denmark (ca 6 %), although the country still remained at the forefront. Conversely, Czechia found itself at the bottom, with its education participation rate in 2020 decreasing by 3 %.

Chart 14: Participation of employees aged 18–64 let in education / training over the past 4 weeks, in %



Source: Eurostat, table [TRNG_LFS_03]

Czechia, Denmark, Germany, Estonia

According to LFS outcomes, Czechia's international position in terms of the employed population's participation in education is not as optimistic as suggested by EWCS outcomes. Indeed, Czechia's values are lower both when compared with the EU-27 average and the other countries. EWCS and LFS results are not comparable as they differ in terms of the respondents' ages (15–64 for EWCS, 18–64 for LFS) and in education length. This study does not aim to explore the causes behind these different LFS and EWCS results, only to illustrate the 2020 trend.

It is clear that generally speaking, when compared to the employed the self-employed face less favourable conditions in regards to their further education. While receiving employer-paid education, employees do not suffer from wage loss while the opposite is no doubt the case for the self-employed. The self-employed also have to invest into searching suitable education on their own while these activities are typically done on behalf of employees by the HR department.

Although it can be assumed that the self-employed usually are not unionised, there is a space for occupationally close union organisations to promote the interests of these workers, especially as regards the equalisation of their capacity to participate in further professional education required if they are to be able to avail themselves of the new opportunities emerging in their occupation as a result of new technologies starting to permeate all the areas of human activity.

IV.2 Participation of senior employees in informal professional education

As a result of population aging and the rising threshold of old-age pension entitlements, there is an urgent need to educate older employees, i.e. those aged 55 and above. The informal education participation rate of this employee age group is illustrated by Chart 15.

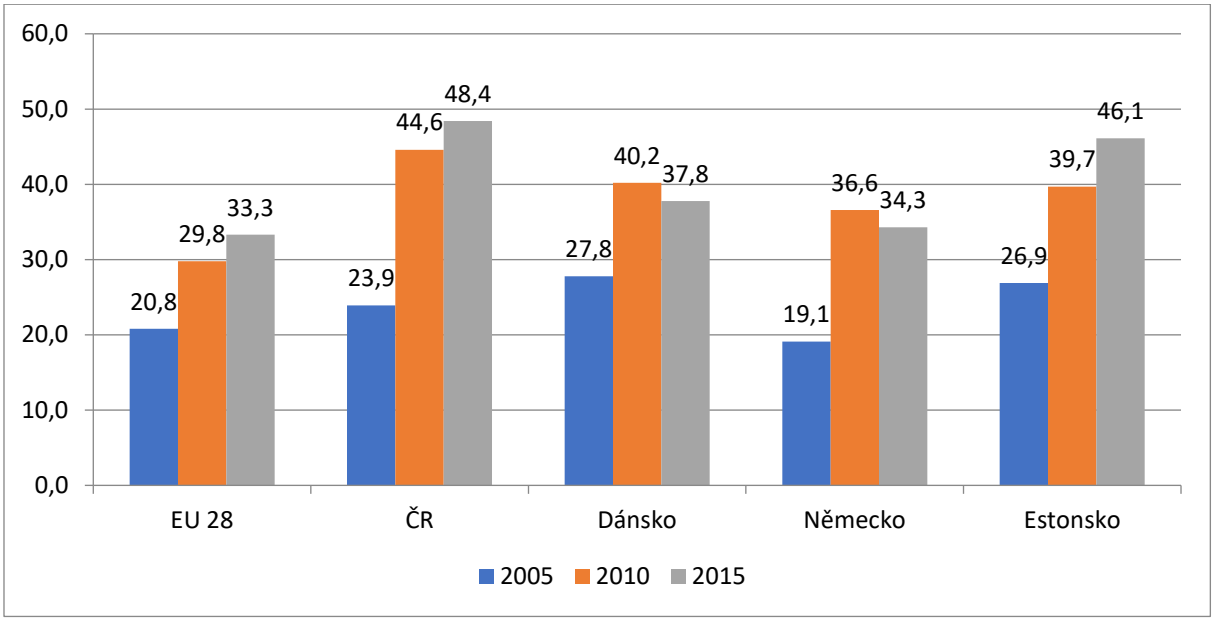
Generally speaking, the process of educating older employee populations turned out very well. Comparing informal education participation in 2015 and in 2005, there is a marked increase both in the EU-28 and in all the countries being compared. EWCS results show that participation among older employed persons increased, particularly between 2005 and 2010 whereupon the rate decreased significantly, even dropping in certain countries. Values for all EU Member States are listed in the Annexe (Table 4).

In Czechia, participation of the 55–64 age group increased by 20.7 % in 2010 when compared with 2005, while the 2015 increase amounted to mere 3.8 % when compared with 2010. Among the countries being compared, similar growth was present only in Estonia. Naturally, one must ask whether there is a ceiling or an optimum informal education participation rate associated with the extent of changes in skills and knowledge requirements or with the degree of harmony between supply and demand in the labour market.

Nevertheless, not all countries saw a clear upward trend. Of the countries being compared, two (Czechia and Estonia) manifested a stable growth while the other two (Denmark and Germany) experienced a slight decrease in 2015 when compared with 2010.

In terms of informal education of older employed populations, Czechia's position developed very well in the international context, with the country showing not only the highest participation rate out of the countries being compared, but also the second highest in the entire EU. Finland scored first within the EU as 48.8 % of its employed persons aged 55–64 were in education in 2015, i.e. exceeding the Czech value by just 0.4 %. One other country surpassed the 48 % mark—the Netherlands where the same percentage of employed persons aged 55–64 participated as in Czechia, i.e. 48.4 %.

Chart 15: Participation of employees aged 55–64 in informal education, in %



Source: Eurostat, Eurofound, table code [QOE_EWCS_6_1]

Czechia, Denmark, Germany, Estonia

The rising rates of older employees' participation are a testament to the fact that businesses are aware of how important this age group is for their operation. Similarly, individuals are also becoming increasingly aware that it might be difficult for them to maintain or improve their position in the labour market without further education. Rising retirement age is another important aspect as this process involves the lengthening of the period when the employee and employer can capitalise on the benefits associated with positive changes in individuals' skills and knowledge.

However, when comparing this age group's participation with the total participation of employees aged 15–64, it is clear that the former is being discriminated against to a degree, in all compared countries, in the EU-28, and in all monitored years. Estonia in 2010 was the sole exception as the informal education participation rate of its senior age group exceeded that of the overall 15–64 cohort (37.2 % vs. 39.7 %). This is a surprising, though not entirely exceptional finding. In 2005, a similar situation was noted in 6 countries (Croatia, Latvia, Hungary, Malta, Slovakia, France) and only in two countries in 2010 and 2015 (Estonia and Luxembourg in 2010, Lithuania and Hungary in 2015; see Table 4 in the Annexe). Available data does not allow us to define the reasons for this; we can only assume that massive support measures were adopted to stimulate the participation of senior employee age groups in job-related informal education.

Table 1: Differences in participation of employed persons aged 15–64 and 55–64, in %

	2005	2010	2015
EU 28	5,6	4,2	5,7
Czechia	2,9	1,9	4,5
Denmark	8,7	4,2	0,2
Germany	6,2	0,5	7,4
Estonia	2,9	-2,5	3,1

Source: Eurostat, Eurofound, table code [QOE_EWCS_6_1], author's calculations

The Support for Professional Employee Education (POVEZ II) programme which awards additional points if employees aged 54+ participate in education, can be given as an example of Czechia's measures promoting the participation of employed persons aged 55.

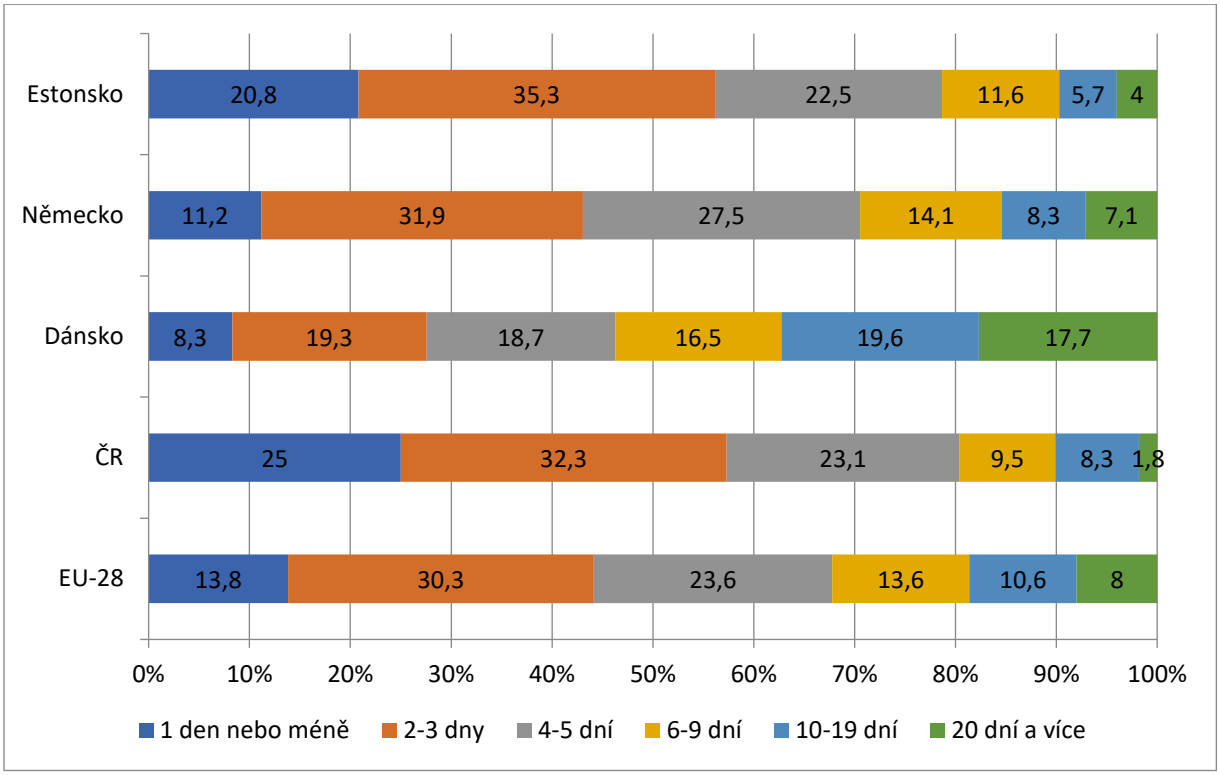
In this respect, unions should pay attention to the elimination, albeit not excessive discrimination of employed persons aged 55–64. However, union activity should not be centred solely around employers, rather around the employees themselves in order to promote the latter's willingness to further educate themselves. According to research, older populations are less willing to keep deepening or improving their skills and knowledge. When compared with younger populations, this unwillingness tends to be explained by a lower return on investment due to the fact that older populations benefit from this investment in further education for a shorter period of time, but also by their lower confidence in their own ability to sufficiently master new knowledge.

IV.3 Length of employer-provided informal education

The previous section discussed the participation of employed persons in informal education and special job-related training, regardless of whether such activities were initiated by the employer or the employee themselves. This part is once again based on EWCS surveys, however it concerns only informal education and professional training provided by the employer. Evaluation focuses on answers to the question "Over the past 12 months, how many days in total have you spent in training paid or provided by your employer?"

As shown by this study's previous sections, Czechia does well in the international context when it comes to employee participation. What sullies the picture is the length of provided education. The following chart shows how many of the total number of education participants educate themselves over specific time periods.

Chart 16: Length of employer-provided education per education participant in 2015, in %



Source: Eurostat, Eurofound, table code [QOE_EWCS_6_2]

Estonia, Germany, Denmark, Czechia

1 day or less, 2–3 days, 4–5 days, 6–9 days, 10–19 days, 20 and more

Looking at the other countries being compared, we can see that short-term education lasting a single day at the most is very common in Czechia—in 2015, one fourth of employed persons aged 15–64 and participating in employer-provided education took part in these short-term courses, the highest figure out of all the countries being compared and almost a double the EU-28 average. It is by far the highest percentage in the entire EU. These short-term courses are highly popular in post-communist countries; besides Czechia, only in Poland (23.6 %), Hungary (22.2 %), Slovenia (21.0 %), and Estonia (20.8%; see Table 5 in the Annexe) did participation exceed 20 % of the total number of participants.

In the countries being compared, but also in respect to the European average, employer-paid education usually lasts 2–3 days. With the exception of Denmark, ca one third of the total number of participants takes part in such education courses; in Denmark, the figure is only 20 % of the employees receiving education.

To a certain extent, length of education reflects the scope and depth of skills and knowledge being acquired. Predominance of short-term training can be seen either as a positive, or as a negative. Positive evaluation is based on the belief that in Czechia, workers are perfectly ready to perform their occupations and need only a brief induction or introduction to the business particulars of their profession or corporate culture in order to do their job. If this explanation is not correct, the predominance of short-term training may suggest that employers do not pay enough attention to this aspect and that Czech businesses are characterised by limited career advancement to high-skilled jobs, associated with the necessity to improve one's skills and knowledge which requires long-term training.

Unions should pay more attention to whether or not employees are being provided with education of relevant scope in their businesses and offered opportunities for further professional growth. Employees' educational needs are influenced not only by the introduction of new technologies, but also by changes effected by the COVID-19 pandemic as a whole range of professions have switched, partially or fully, to working from home which requires both appropriate ICT technology, and new skills to ensure ICT security when working from home. Unions should oversee that individual provisions of Act No. 262/2006, Coll., Labour Code, as subsequently amended, regarding employees' professional development (Sections 277–235), i.e. training and induction, professional experience of graduates, and deepening or improving one's qualifications, are fully respected.

Education and professional training facilitate transitions from one occupation to another and should also help freed-up workers find jobs which allow them to utilise their skills at the maximum. Question remains what kind of an educational scope and focus will be necessary in order to make sure that employees working in jobs highly threatened with new technologies are able to switch to less threatened types of work.

Occupational Mobility, Skills and Training Needs[24], an OECD study relying on the results of a PIAAC survey, divided the education length necessary to facilitate switching from threatened to less threatened jobs into three categories: education lasting either 6 months, one year, or three years. Naturally, employers will not be able to provide education of such a scope and the role of the government will grow. It is not yet clear to which extent employers will participate in implementing this education/retraining and whether the current employment subsidies, calculated as 1.2 % of employees' total bases of assessment, will suffice.

IV.4 Pandemic's impact on employee education

How much the pandemic has affected employee education will be illustrated by the outcomes of EWCS 2020 which is being held this year and will be made available in 2022. Labour Force Sample Survey (LFS[25]) data is being used as a replacement source, though it only concerns participation of the employed population aged 18–64 in education in the 4 weeks immediately preceding the survey.

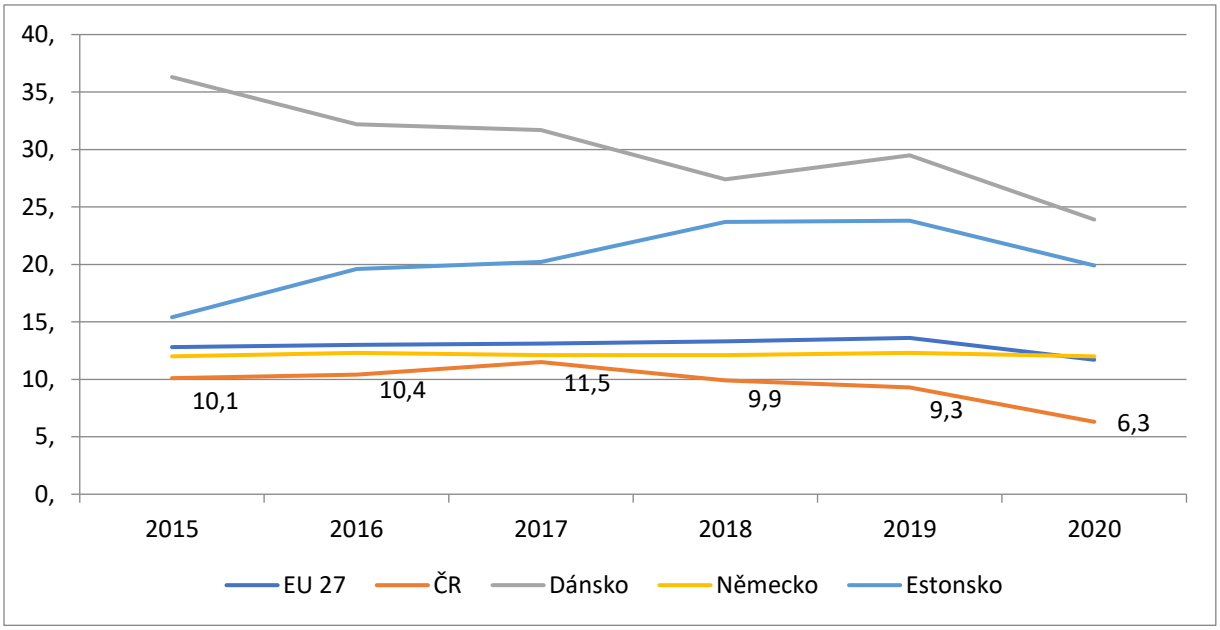
As illustrated by the following chart, **the participation rate of Czechia's employed population in further education began to decrease as early as in 2018.** Typically, businesses reduce investments in education to respond to a worsening economic situation which manifests via a decreasing GDP growth rate on the macroeconomic level. In 2018, Czechia's GDP growth rate dropped to 3.2 % after the 2017 economic recovery and this negative trend kept intensifying. In 2020, the adverse economic development was worsened by the impact of covid-related measures on the economy's operation, and the GDP growth rate dropped to negative values (-5.6 %). The suspension or reduction of operations

[24] Source: OECD, POLICY PAPERS April 2019 No. 70, Nagui Bechichi, Stéphanie Jamet, Gustave Kenedi , Robert Grundke, Mariagrazia Squicciarini: OCCUPATIONAL MOBILITY, SKILLS AND TRAINING NEEDS

[25] According to LFS results, Czechia's international position in terms of the employed population's participation in education is not as optimistic as suggested by EWCS outcomes. Indeed, Czechia's values are lower when compared both with the EU-27 average and the other countries. EWCS and LFS results are not comparable as they differ in terms of the respondents' ages (15–64 for EWCS, 18–64 for LFS), and in education length. This study does not aim to explore the causes behind the different LFS and EWCS results, only to illustrate the 2020 trend.

or the assigning of certain activities to those working from home resulted in further decrease in the employed population's participation in education, dropping to 6.3 % in 2020.

Chart 17: Education participation rate of the employed population aged 18–64, in %



Source: Eurostat, table code [trng_lfs_01]

Czechia, Denmark, Germany, Estonia

Czechia's unfavourable position in terms of the employed population's participation in education when compared with the EU-27 average and selected Member States has only become worse. In 2019, employees' participation in education was 3.1 % lower than the EU-27 average; in 2020, the difference rose to 5.4 %.

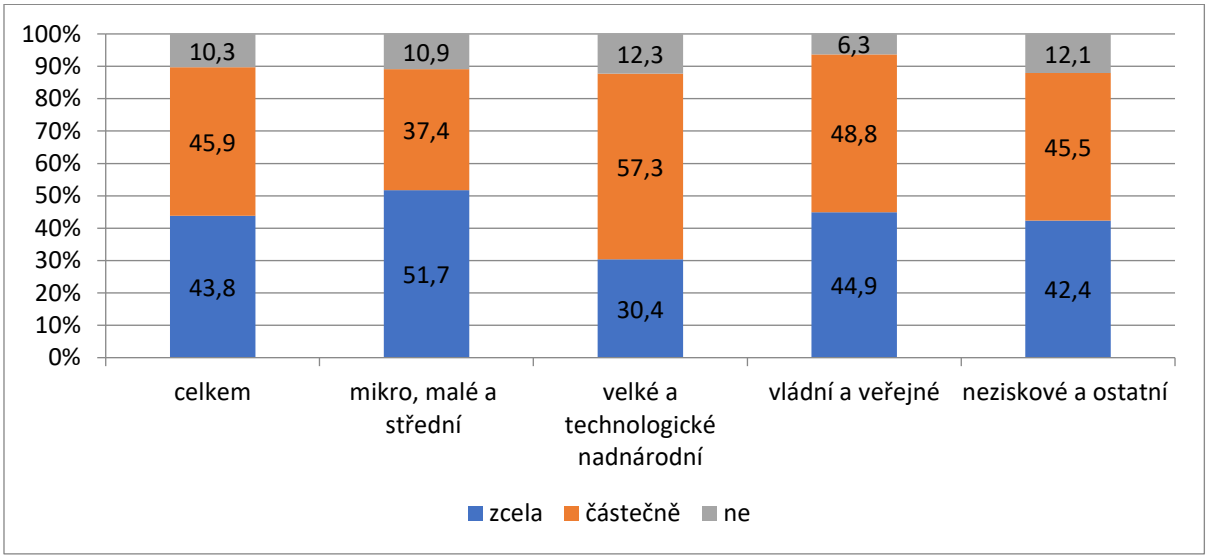
Essentially all countries had to deal with unfavourable economic development and the impact of anti-covid measures. Germany, however, managed to handle the situation without significantly reducing the employed population's training. Throughout the monitored period, Germany's participation in education ranged around 12 %. *Thus, Germany can serve as an example of good practice to other countries. Under the umbrella of international cooperation of unions, it would be beneficial to evaluate the attitude of businesses and perhaps even governments to the provision of education during unfavourable economic conditions.*

The questionnaire survey conducted by the International Labour Organisation (ILO) from April 27 to June 5, 2020 to map the pandemic's impact on the education of employees served as another source of information. The survey obtained altogether 901 answers from 114 countries, with Czechia being represented by a single questionnaire. According to the authors, the results may be partially skewed due to the unequal representation of individual regions and types of business. Still, they give us valuable information, primarily in terms of the pandemic's impact or the response of different types of businesses.

As businesses limited their activity somewhat and introduced work from home, **employee education was being suspended**, partially or completely. On average, only 10 % of the respondents did not suspend their education, the average being surpassed mostly by large businesses (12.3 %) and non-

governmental organisations. Those who entirely gave up on educating their employees were mostly businesses with up to 250 employees (52 % of the respondents). Some respondents stated the departments responsible for ensuring employee education were not ready for the crisis and did not have sufficient experience with developing and providing online education.

Chart 18: Discontinued education among the employees of surveyed business, in %

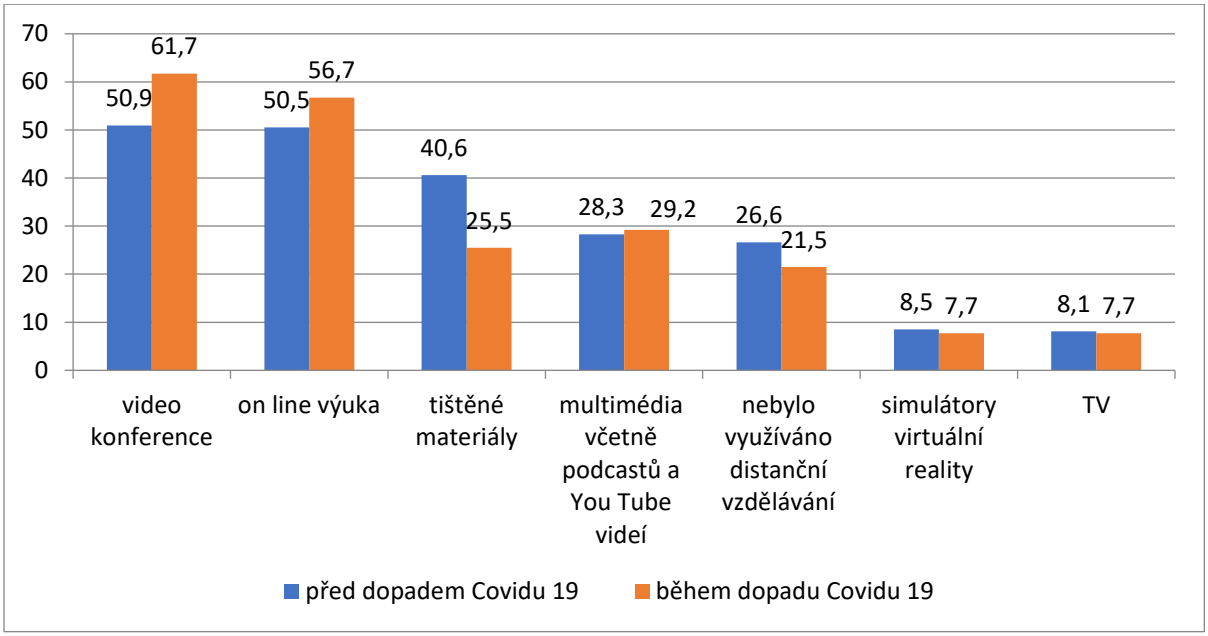


Source: ILO study, chart 6

in total, micro, small, and medium, large and multinational technological, government and public,non-government and other
entirely, partially, no

The pandemic affected both the scope of the provided education, and its forms. As illustrated by the following chart, businesses increasingly employed video conferences and online learning for education purposes. When compared with the pre-covid period, the share of businesses using video conference tools grew during the pandemic rose from 51 % to 62 %; online learning saw growth from 51 % to 57 %. The number of businesses relying on printed materials dropped significantly—from 41 % to 26 %.

Chart 19: Use of remote learning tools in surveyed businesses, in %



Source: ILO study, chart 7

video conferences, online learning, printed materials, multimedia, incl. podcasts and YouTube videos, no remote learning virtual reality simulators,

before COVID-19, during COVID-19

As shown by the survey, the process of educating employees was less affected by the pandemic in big than in small businesses. The crisis helped develop new forms of education which were then used by a larger percentage of companies. Presumably, there has been and will be a quantitative shift, with the percentage of programmes facilitating active participation of those interested in receiving education rising.

V. Measures to promote further education and strengthen the importance of collective agreements

V.1 Experiences abroad

Countries with a developed culture of tripartite negotiations covering a broad range of subjects, with the associated strong position of union organisations, include primarily the states of Western Europe. In countries where these procedures are not as advanced, tripartite dialogue focuses almost entirely on the issue of wages and working conditions. This, unfortunately, still applies to Czechia. How much a tripartite dialogue focuses on broader topics beyond this framework is related to the wage level in particular countries or industries. For instance, collective bargaining in Germany's automotive industry is starting to include the subject of education more and more while other industries, characterised by lower wages, still centre their collective bargaining almost entirely on the wage amount. In this regard, technological intensity also plays an important part as the automotive industry is among the sectors most affected by ongoing automation and robotic automation, placing higher demands on the flexibility of workforce and the development of workers' skills, with both employers and employees being increasingly aware of the need for lifelong education.[26]

Therefore, an assumption can be formulated that just as there is a pyramid of people's individual needs, so do collective needs of employees constitute a pyramid. Such basic needs as a respectable wage amount or satisfactory working conditions and occupational health and safety predominantly decide the nature of union activities up until a certain threshold of satisfaction is reached. This is followed by new types of demands, giving union organisations the mandate and motivation to negotiate such "extra" needs as education. Although this is an evident fact, many studies and expert recommendations are based on the fact that in the future, further education will be vital to keep jobs, and more generally businesses in essentially any sector competitive. Therefore, we can also point out a reverse causality trend where having a more educated workforce leads to higher wages. For that reason, it is advisable to raise awareness of the necessity to include unions in the development of further education across all sectors.

OECD[27] recognises three basic categories of countries, depending on the inclusion rate of social factors in education. Social partner inclusion is the strongest in countries where they define and manage the education system, such as in Austria, Denmark, Germany, and Italy. A medium participation level means that social partners contribute to the education system concept (e.g. Belgium, France, Poland). In the third group of countries, such as in Czechia, Slovakia, Spain, the Baltics, etc., social partners are merely consultants. The fourth, small category groups countries which cannot be included elsewhere (Hungary, United Kingdom).

[26] See e.g. Kulatý stůl Další vzdělávání a rozvoj dovedností v celoživotní perspektivě – Germany, June 25, 2021, online, Czech-Moravian Confederation of Trade Unions.
[27] OECD (2019): Getting Skills Right: Making adult learning work in social partnership (www.oecd.org/employment/emp/adult-learning-work-in-social-partnership-2019.pdf)

Iceland can be mentioned as a country with a strong social partner participation. The employers and employees are grouped in the Education and Training Service Centre, conceptually managing and operating the education system, in joint cooperation with the Ministry of Finance and the Association of Local Authorities. The Centre identifies educational needs, creates educational programmes including curriculums, validates formal and informal learning, supervises career counselling, establishes quality control tools, and collect data. Another vital role, the Centre also manages the education fund to which employers contribute.

In Norway, a broad coalition of partners formulated the Norwegian Strategy for Skills 2017–2020—five different ministries, the Sámi Parliament, the Norwegian Association of Local and Regional Authorities, civil society organisations, three employer associations, and four union organisations. This broadly inclusive approach was inspired when OECD discovered[28] it was partner coordination that needed improving in regard to skill development. Vitally, partners did not simply give comments or feedback, but actually cooperated in the strategy's creation. The strategy set three main general priorities: (1) informed choice for individuals and the society; (2) promotion of workplace education and effective use of skills; (3) strengthening of the skills of those adults who did not enjoy a strong position in the labour market. The strategy's implementation is monitored by the Skills Policy Council where strategic partner representatives sit as well.

Similarly, Estonia saw the creation of the Education Strategy 2012–2012 to address, among others, the topic of further education—a result of cooperation between multiple key partners, including employer and union representatives. This activity, however, followed in the footsteps of their long-term cooperation. The strategy defines five goals for lifelong education: (1) developing an individual approach to learning; (2) competent, motivated teachers and school administration; (3) adjusting educational offers to the needs of the labour market; (4) digital access to lifelong education; (5) equal opportunity and participation in education. The strategy's implementation is monitored via established measurable indicators.

Dutch sector plans, drawn up jointly by unions, employer associations, and in some cases other organisations (e.g. regional administration or educators), can serve as an example of a sector initiative. The plans aim chiefly to improve market function in the short- to medium-term. Adopted measures fall under the following categories: (1) supporting interested individuals in changing their jobs; (2) financially contributing to the wages of the young and other groups threatened in the labour market; (3) education; (4) transfer of knowledge from older to younger generations; (5) occupational health; (6) evidence based policy improvements. Since 2013, these sector plans have been a part of the Social Agreement which strives to improve the resilience of the Dutch labour market in face of future challenges.[29]

Generally speaking, as a country's awareness of the importance of further education improves, the need to incorporate the subject in collective bargaining grows.

[28] OECD Publishing (ed.) (2014): Skills Strategy Action Report Norway. Quoted from: OECD (2019): Getting Skills Right: Making adult learning work in social partnership (www.oecd.org/employment/emp/adult-learning-work-in-social-partnership-2019.pdf)

[29] OECD (2019): Getting Skills Right: Making adult learning work in social partnership (www.oecd.org/employment/emp/adult-learning-work-in-social-partnership-2019.pdf)

Germany as an example

Germany has long been holding a society-wide discussion on so-called Work 4.0, focusing on the future nature of work and working conditions and on the possibility of lifelong education. Unions are involved rather intensely. The debate has resulted in proposals for solutions, various initiatives, projects, analytical-research work, but also legislation concerning (further) education. Additionally, various types of support for further education and its accessibility can serve as an inspiration.

In order to keep their current jobs, many employees and low-skilled people may find it crucial to improve their basic or moderately advanced digital competencies, or even the complete basics of literacy (reading, writing, counting). In Germany, these competencies can be acquired in public courses, typically financed from public funds. The so-called **Volkshochschule** (**VHS**) constitute the country's densest network of public educational institutions whose offer of digital competence courses ranges from basic courses (e.g. use of Excel or smartphones) or specialised training in various programmes, tools, and touch typing, to programming or data analysis courses.[30] VHS also offers courses in basic competencies, such as reading, writing, or counting.[31]

The dense local network of VHS educational centres, their accessibility to the general public, and financial funding of socially beneficial educational courses make VHS a practical tool for supporting the education of (not only) adults from all social strata. Striving for establishing a similar network of educational centres, with an open, socially beneficial offer of courses, could be one feasible measure to promote further education, not only in the digital field.

Focusing on establishing a widely accessible offer of courses facilitating the improvement of basic literacy (reading, writing, counting, using a PC) is crucial when it comes to providing further education to the most vulnerable social group.

Another measure related to the promotion of accessible adult education is the **provision of a reliable source of information on the education system, counselling, and available educational opportunities**. Germany has www.bildungsserver.de, a central, state-established and guaranteed link site containing information on the entire education system, including information on further education[32]. **InfoWeb Weiterbildung[33] (IWWB)—a meta-search engine for further education**—is another state-guaranteed tool for looking up suitable opportunities to participate in further education. It can also be used by those providing further education counselling.

Counselling is a significant tool for promoting further education. Consultants can also work at professional and employee chambers, union organisations, educational institutions, in communities, etc. Their services may include not only assistance with searching for suitable educational opportunities (courses, study programmes, etc.), but also counselling in regards to negotiating with employers on suitable conditions of education or looking up suitable education subsidies (usually the Employment Office).

[30] For a more detailed offer see e.g. Volkschochschule Hannover, https://www.vhs-hannover.de/kursprogramm/digital.html.
[31] See e.g. Volkshochschule Hannover, https://www.vhs-hannover.de/kursprogramm/2-bildungsweg-und-elementarbildung.html?action%5B644%5D=category&cat_ID=549-CAT-KAT6487618#cnt.
[32] https://www.bildungsserver.de/Erwachsenenbildung-24-de.html
[33] The search engine's home page: https://www.iwwb.de/kurssuche/startseite.html; for information on the search engine see e.g. https://digitaltag.eu/weiterbildungsberatung-mit-dem-infoweb-weiterbildung-iwwb.

In Germany, there is also a **search engine to look up further education counselling and information services**, available on InfoWeb Weiterbildung[34]. Counselling jobs are being established in various types of institutions, among others in employer associations (e.g. industry and commerce chambers), employee chambers (e.g. chambers of craftsmen), educational institutions (e.g. VHS[35]), municipal counselling firms, or employment offices.

"Guidance Dialogue—Bessere Chancen für Bildung und Beruf durch Beratung[36], an international project co-funded by the EU and involving the German Education Union (GEW), Austrian Trade Union Federation (ÖGB), and Polish Teachers' Union, serves as an example of union activity. The project aims to provide European unions with subjects for national discussions on reforms in educational and guidance counselling.

Further education counselling is where unions can discover lots of room for their activities, from creating individual counselling jobs and creating information materials or cooperating on state- and EU-funded projects, to establishing counselling offers and networks. All these activities are in the interest of the general employee public whose members consider relevant information on further education opportunities and their funding to be vital if they are to keep a job or find a new one. Since neutral further education consulting is not common in Czechia, perhaps with the exception of the Employment Office network, any union activity will be a plus.

The accessibility of further education can also be improved by using open educational resources (OER). In Germany, the OERinfo[37] is a central point of relevant information, created at the behest of the Federal Ministry of Education and Research (BMBF) in 2016 and operated by the Leibniz Institute for Research and Information (DIPF[38]). Currently, OERinfo strives to establish this type of materials as the standard in the creation of educational materials, i.e. to make sure that educational materials are created and licensed professionally. To this purpose, a set of "gold standards"[39] was formulated, i.e. definitions of the optimum quality of ten types of OER educational materials (video, podcast, game, work sheet and interactive exercise, text, photo, presentation, online course, blog or website, templates for makers).

Focusing on the availability of quality educational materials, both in terms of institutional, and individual education, is another way of promoting the availability of further education to the general public. OER and online materials in general can play an important part here. Nevertheless, it is advisable to acknowledge that a part of the population, especially its poorest and least educated segment, might not have access to the internet or a PC. Thus, when making online educational content accessible, ideas should be considered to actually make PCs with internet access free for all or for the specific group of people threatened in the labour market (e.g. library network, rooms in educational centres, etc.).

[34] https://www.iwwb.de/beratungssuche/beratungsstellen.php

[35] Volkshochschulen. Mostly established by various types of non-profit organisations, these are community centres for further education, open to the general public. On the state level, they are organised by Deutscher Volkshochschul-verband (https://www.volkshochschule.de/) whose website also contains a search engine where users can look for educational opportunities offered by these organisations.

[36] "Guidance Dialogue - Bessere Chancen für Bildung und Beruf durch Beratung". For more see https://www.gew.de/weiterbildung/beratung/.

[37] OERinfo – Informationsstelle Open Educational Resources, https://open-educational-resources.de/.

[38] Leibniz-Institut für Bildungsforschung und Bildungsinformatio, https://www.dipf.de/de.

[39] For more see https://wb-web.de/aktuelles/der-gold-standard-fur-oer.html.

Federal Ministry of Education and Research (BMBF)[40]—roles and activities

The ministry is responsible for legislation concerning education in general, including further education, and for its funding. Most significantly at the moment, the **Act on Strengthening Qualification Opportunities and Providing Better Protection in the Area of Unemployment Insurance (the so-called Qualification Opportunities Act)**, [41] effective as of January 1, 2019, strives to improve people's educational opportunities upon first entering the labour market. The Act's formulation was one of the outcomes of the discussion on the nature of Work 4.0., leading to the publication of White Paper Work 4.0.

Essentially, the Act aims to expand the promotion of professional training for employees whose work may have been replaced with new technologies, who are threatened with structural changes, or who attempt to obtain further education in bottleneck occupations. Thus, businesses now have the option of receiving subsidies to cover the cost of further education and employees of receiving subsidised pay for work throughout the education process[42].

The federal government set itself the goal of promoting further education, training, and lifelong learning to a greater extent than before, consolidating this intention in 2019 in the form of the **National Further Education Strategy**[43], drawn up under patronage of the BMBF and Federal Ministry of Labour and Social Affairs. Both state governments and the federal government, as well as unions and employer and employee representatives, [44] have been interested and participating in its implementation. On the most general level, the strategy's aim is to create a so-called further education culture in Germany, i.e. make it common and easy to enter into further education whenever a person's current career or living situation requires it.

Federal Ministry of Labour and Social Affairs (BMAS)[45]—roles and activities

The Federal Ministry of Labour and Social Affairs (BMAS) is another key German institution responsible for initiatives, programmes, and support provided in order to ensure a smooth transition to society, economy, and work 4.0. The BMAS website contains a summary of initiatives and activities which emerged from debates on the changing nature of work and working conditions due to the arrival of the 4th industrial revolution. This discussion was forcefully initiated by the BMAS in 2015 via the Green

[40] Bundesministerium für Bildung und Forschung, www.bmbf.de.
[41] Gesetz zur Stärkung der Chancen für Qualifizierung und für mehr Schutz in der Arbeitslosenversicherung (Qualifizierungschancengesetz), for more information see e.g. https://wb-web.de/dossiers/recht-weiterbildung/folge-1-gesetzliche-rahmenbedingungen-auf-eu-bundes-und-landesebene/bundesbildungsgesetze/qualifizierungschancengesetz.html
[42] See e.g. https://www.arbeitsagentur.de/vor-ort/giessen/content/1533728944619.
[43] Nationale Weiterbildungsstrategie, for more information see https://www.bmbf.de/de/nationale-weiterbildungsstrategie-8853.htmlp or https://www.bmas.de/DE/Arbeit/Aus-und-Weiterbildung/Weiterbildungsrepublik/Nationale-Weiterbildungsstrategie/nationale-weiterbildungsstrategie.html; for full version see https://www.bmbf.de/files/NWS_Strategiepapier_barrierefrei_DE.pdf.
[44] Specifically, the participation's drafting involved BDA, DIHK, and ZDH on behalf of employers and DGB, IG Metall, IG BCE, ver.di, and GEW on behalf of employees. Germany's states were represented by KMK, ASMK, and WIMKO.
[45] Bundesministerium für Arbeit und Soziales, www.bmas.de.

Paper Work 4.0[46] and ultimately resulted in the White Paper Work 4.0[47] which frames the issues arising from these transformation processes, as well as the main goals and directions of the relevant responses. The document maps trends (digitisation, globalisation, demographics—workforce pool and cultural changes), areas of tension (changes in fields and employment, crowdworking, BigData, industry 4.0 and human-machine interaction, time and spatial work flexibility, organisational forms of businesses), and associated tasks:

- ensuring employment;
- work flexibility, offset by employees' influence on the manner in which work is organised;
- improving working conditions in services;
- occupational health and safety 4.0;
- setting high standards of employees' data protection;
- improving participation quality, spreading elements of participation in businesses, increasing union membership;
- supporting and providing sufficient social-legal protection for the self-employed;
- developing and designing a social-market state.

Proposals regarding employment and individual employee needs as formulated in the White Paper Work 4.0 include a **personal employee account**, set up for anyone who becomes an employee and subsequently used throughout that person's working life. The proposal was inspired by the French concept of "personal activity account", introduced in France in 2017[48]. The aim is to allow employees to enter into further education throughout their career. Entitlement to such an education should be dependent on the time worked and on the employee, not the employer—i.e. entitlements calculated from years worked remain in effect even if the employee changes employers.

Unions, along with other employer and employee representatives, have been an important part of the discussion on Work 4.0 ever since it began. They highlight primarily topics which pose a threat to employees, such as lack of limits on digitised work (employees' constant availability through means of electronic communication, sometimes even after working hours or during a vacation; blurred lines of working hours; difficulty achieving a work-life balance), and call for their resolution.

Additionally, discussions on the subject of Work 4.0. produced measures aimed at establishing new working conditions: INQA, corporate experimental spaces, the Think Tank for Digital Work, Works Council, Alliance for Initial and Further Training.

INQA—Initiative for New Quality of Work[49]

The initiative is promoted by the federal government, state governments, social insurance institutions, unions, foundations, and employers and financed by the Federal Ministry of Labour and Social Affairs. Supporting chiefly small and medium businesses, it helps them transform the world of work, especially in regards to working conditions. The goal is to create a quality and healthy working environment,

[46] For more information and full version see https://www.bmas.de/DE/Service/Publikationen/A872-gruenbuch-arbeiten-vier-null.html.
[47] Download here: https://www.bmas.de/SharedDocs/Downloads/DE/Publikationen/a883-weissbuch.pdf?__blob=publicationFile&v=1; for Czech summary see http://www.nvf.cz/nemecka-bila-kniha-prace-4-0-reserse-nvf.
[48] Compte personnel de formation, for more information on these accounts see e.g. https://www.moncompteformation.gouv.fr .
[49] Initiative Neue Qualität der Arbeit, www.inqua.de.

modern management, and a work-life balance. As a preliminary tool, INQA provides companies with complementary INQA-Checks, time-tested checklists, to systematically evaluate their strong and week points, mainly in terms of management, diversity, health, and competences. Additionally, INQA funds the project of corporate educational and experimental spaces (for more on experimental spaces see below), couching, and tailor-made consulting.

Corporate experimental spaces[50], Centres for the Future

Since 2017, BMAS has been supporting businesses and administrative bodies as they establish corporate educational and experimental spaces for the purpose of their own "working innovations", encouraging them to engage in their own testing and introduce new methods of work. There, the management and employees can see what work of the future in their business might look like. The goal is to create a sustainable business culture. Support is provided mainly to small and medium businesses. As of 2019, the previous funding was supplemented with a focus on artificial intelligence (AI) in workplace practice. The funds go to such educational and experimental spaces which develop innovative solutions for the creation of a digital world of labour, implemented in business in cooperation with employees and evaluated by scientific institutions.

Think Tank for Digital Work[51]

In 2018, BMAS set up the Think Tank for Digital Work as its new, interdisciplinary, agile organisation unit, combining the functions and working methods of a traditional think tank with a laboratory for the future. The goal is to timely identify new areas of activity for the Ministry of Labour and Social Affairs, based on digitisation and other trends; to increasingly see the labour world in a social context; and to develop new approaches to solutions. The think tank groups projects and processes related to digital transformation under the BMAS umbrella, comprising a central point of contact for science, technology, practice, and social partners in this area. The project is based on the belief that in a constantly changing digital economy, frameworks can be designed to make sure they benefit all the parties involved (economy, society, and employees)—if the development and use of digital applications focus on the needs of employees and the requirements of good work.

Currently, the project is concerned primarily with the following: AI and the related strategies, employee data protection, strategic forecasting, platform for civic innovations, and work in a platform economy.

Alliance for Initial and Further Training 2019–2020

In August 2019, representatives of the federal government, Federal Employment Agency, leading business associations, unions, and German states signed a new agreement to conclude an alliance for initial and further training 2019–2020. The Alliance was set up by the end of 2014, replacing the National Pact for Training and Young Professionals which expired in 2014, aiming to strengthen the attractiveness, quality, performance, and integrative power of professional education and training.

[50] For more see BMAS - Lern-und Experimentierraeume https://www.bmas.de/DE/Arbeit/Digitalisierung-der-Arbeitswelt/Austausch-mit-der-betrieblichen-Praxis/Lern-und-Experimentierr%C3%A4ume/lern-und-experimentierraeume.html.

[51] Denkfabrik Digitale Arbeitsgesellschaft, for more see https://www.bmas.de/DE/Arbeit/Digitalisierung-der-Arbeitswelt/Denkfabrik-Digitale-Arbeitsgesellschaft/denkfabrik-digitale-arbeitsgesellschaft-arbeit-neu-denken.html.

German Trade Union Confederation (DGB)[52]

An example of union and union federation activity, the German Trade Union Confederation participates in the Alliance for Initial and Further Training. DGB's educational institution, DGB Bildungswerk[53], however tends to focus on active unionists, providing them with support and political education, rather than on general or digital education.

Since 1953, **Berufsfortbildungswerk[54] (Bfw)** has been a reliable provider of educational services for businesses and employees, offering them consulting, qualifications, and training. DGB is a Bfw partner. Bwf's offer of courses for employees and the unemployed helps maintain and enhance individual qualifications, focusing also on digital education and education in bottleneck occupations (especially in health care and social services), but also in e.g. industry and technology. The organisation comprises a national network of branches. Its services include consulting on how to obtain financial funding for the educational services being provided[55].

A network of educational centres offering courses aiming to improve selected qualifications (including different types of digital competencies or e.g. IT retraining), either promoted or established by unions, might be a suitable measure to support employees threatened with digitisation.

Hans-Böckler Stiftung[56] is the country's second largest union organisation supporting talented workers. It distributes 3.5 million EUR annually and offers intensive workshops, student consulting, contacts between groups of scholarship holders, or a mentoring programme. Scholarship holders study at universities and vocational colleges[57], or for matura as a part of the so-called "second chance education". The foundation supports applicants who are active participants socially or societally, in unions or politics.

As a union federation representative, DGB is involved mainly in the political sphere, representing the interests of employees, especially those who are low-skilled and threatened with precarious working conditions. The organisation participates in initiatives for improving workers' chances to acquire better qualifications (Alliance for Initial and Further Training, discussions about Work 4.0), monitors and critically evaluates the effectiveness of current support measures (e.g. DGB's critical position document on partial qualifications), and offers educational courses via its network of educational centres. Its main role, however, is political, with unions acting on behalf of employees, emphasising the interests of workers with low or no skills, as well as migrants or women, and trying to ensure their interests are taken into account when political decisions are being made or programmes and laws formulated.

[52] Deutscher Gewerkschaftsbund, www.dgb.de.
[53] https://www.dgb-bildungswerk.de/
[54] www.bfw.de.
[55] See the offer of consulting on https://www.bfw.de/foerdermoeglichkeiten-bfw/.
[56] https://www.boeckler.de/de/stipendien-2650.htm; https://www.dgb.de/service/bildung-und-weiterbildung
[57] Fachhochschule.

Other sources of inspiration

Last but not least, workers' working conditions regarding further education need to be enshrined in law. In Germany, the Professional Education Act[58], amended in 2020[59], is a key standard governing occupational education, including further occupational education. The amendment introduces new measures to improve the attractiveness of occupational education, such as a minimum wage for apprentices in training[60], facilitates a more flexible form of "part-time education" (i.e. while students work), and enhances the education system's permeability. The amendment's focal point is the introduction of transparent further education levels for higher qualifications in the field of professional education, with the goal of making it more attractive. Graduates will now obtain titles "certified professional", "Bachelor—professional", or "Master—professional". This will equalise professional education and training with college education. Since these terms are comprehensible in the international context, they promote the mobility of those improving their qualifications, allowing them to enter foreign markets.

Enshrining easily accessible forms of further education in law, good permeability of individual stages of education, and the broadest possible support for further education are crucial if further education is to be widely provided.

The federal programme "Creating Further Education Systems[61]" aims to create a new way of organising further education in businesses in order to make sure that available resources are used as effectively and economically as possible. The government strives to find new methods and business strategies to encourage businesses to co-operate in the field of education, and to provide knowledge and education to the greatest number of employees possible. In 2019, an agreement on promoting such decentralised systems of further education was enshrined in the National Further Education Strategy, a project focusing mostly on small and medium businesses and including financial funding for model projects. Businesses, educators, and regional labour market entities are grouped and cooperate within the systems. Emphasis is placed on exchange and cooperation between the system's partners, identification of further educational needs in businesses, counselling and research into suitable offers of further education, or on the concept of new further education measures as per the business' ascertained needs.

Austria as an example

In the Austrian environment, information on further education, i.e. adult education received upon first entering the labour market, is typically available under the key term Erwachsenenbildung—adult education. It is a wide range of educational activities, ranging from courses in basic skills (literacy, counting, PC) to the acquisition of different types of educational certificates (conclusion of elementary education or subsequent educational stages) and partial educational activities with various focus and

[58] Berufsbildungsgesetz – BBiB, for full version see https://www.bmbf.de/upload_filestore/pub/Das_neue_Berufsbildungsgesetz_BBiG.pdf.
[59] For more see e.g. https://www.bmbf.de/bmbf/de/home/_documents/die-novellierung-des-berufsbildungsgesetzes-bbig.
[60] We should add that Germany has a specific system of vocational training, so-called dual training, which requires students to receive education at the employer's workplace. Meaning, this type of "apprentice" essentially receives a minimum remuneration.
[61] Aufbau von Weiterbildungsverbünden, for more see e.g. https://www.bmas.de/DE/Arbeit/Aus-und-Weiterbildung/Weiterbildungsrepublik/Weiterbildungsverbuende/weiterbildungsverbuende-art.html.

organisation (courses, distance learning, etc.) in the area of hobby, civil, and occupational education. Many of them focus on various types of digital skills development, with a great emphasis being placed, as is standard in the German-speaking world, on occupational education. It is this area of occupational education, received while one is in employment, that is strongly supported, including financially. It occurs mostly under the umbrella of dual education which essentially takes place at an employer's workplace, and also as a part of several statutory options of temporarily suspending employment to facilitate education, receive specific government subsidies, and keep one's job.

Since direct union activity in regards to supporting people in occupations or jobs threatened by the development of Industry 4.0 and by its consequences is not particularly developed in Austria, let us focus mostly on mapping the further education system and support which are a prerequisite for adjusting and changing qualifications with the aim of keeping one's current job or improving their chances of securing a new one.

Specifically, Austria has a **system for adult education**. Austrian societies, associations, chambers, and other non-market institutions are very active in this area. The establishing of the **Austrian Conference of Adult Education Institutions [62] (KEBÖ)** was a vital step towards the promotion of further education. A platform for the issues of adult education, it was founded in 1972 in cooperation with the *Federal Ministry of Education and Arts*[63] and the *Federal House for Adult Education in Strobl*[64]. The platform groups 10 Austrian independent and non-profit adult education associations, listed in the **1973 Adult Education Funding Act** [65]**.** They include, among others, the **Institute for Economic Promotion**[66]; **Association of Austrian Trade Union Education** [67]; **Association of Austrian Adult Education Centres**[68]; **Austrian Library Association**[69], or **Forum for Catholic Adult Education in Austria**[70]. University and non-university research institutes, as well as a number of commercial educational institutions, play an important part in adult education as well.

Individual ministries and government institutions in Austria participate in the promotion of further education, often focusing on specific target groups. **The Federal Ministry of Education, Science, and Research[71]** is a main government institution responsible for adult education, i.e. also for further education in digital competencies, and its support, both in terms of legislation and funding.

[62] Konferenz der Erwachsenenbildung Österreichs, for more see http://erwachsenenbildung.at/themen/eb_in_oesterreich/organisation/keboe.php; https://de.wikipedia.org/wiki/Konferenz_der_Erwachsenenbildung_%C3%96sterreichs.
[63] Now the Federal Ministry of Education, Science, and Research (BMBWF—Bundesministerium für Bildung, Wissenschaftund Forschung, www.bmbwf.gv.at) .
[64] Now the Federal Institute for Adult Education (Bundesinstitut für Erwachsenenbildung, bifeb, http://www.bifeb.at/).
[65] Erwachsenenbildungs-Förderungsgesetz 1973, BGBl. Nr. 171/1973, for full version see http://www.ris.bka.gv.at/Dokumente/BgblPdf/1973_171_0/1973_171_0.pdf.
[66] Wirtschaftsförderungsinstitut der Wirtschaftskammer Österreich – WIFI
[67] Verband Österreichischer Gewerkschaftlicher Bildung – VÖGB
[68] Verband Österreichischer Volkshochschulen – VÖV
[69] Büchereiverband Österreichs – BVÖ
[70] Forum Katholischer Erwachsenenbildung in Österreich - FORUM
[71] Bundesministerium für Bildung, Wissenschaft und Forschung – BMBWF, www.bmbwf.gv.at.

Another example of government body activity aiming to improve education of adults and their position in the labour market, the Adult Education Initiative[72] is a joint programme of the federal government and state governments, promoting the acquisition of:

a) basic competencies, including:

- learning competencies (autonomous learning, learning to learn);
- German (speaking, reading, writing);
- basic competencies in another language (speaking, reading, writing);
- mathematical competences;
- digital competences.

b) elementary education (equivalent to completed elementary education in Czechia).

These courses are funded by the federal government and state governments, involve a curriculum, and their availability is increased by consulting on appropriate course selection, provided telephonically and through other channels by means of a so-called "alpha phone".

Legally enshrining alternatives to established initial education paths (before entering the labour market) of which working adults can avail themselves in order to change or supplement their qualifications, i.e. as a part of further education—second education path—is a vital prerequisite if workers are to adapt to the changeable, digitised labour market. Designing college degrees which could be obtained in this manner is one such path, ultimately beneficial to society as a whole, e.g. by making it possible to acquire teaching qualifications in other ways than by undergoing a complete initial college education, giving adults the option of going into education and supplementing the labour force. In Austria, these opportunities are open from the very basics of education to the enhancing of completed elementary education or obtaining matura and a college degree.

We need to point out that ensuring a sufficient offer is in place for people with low or no qualifications is a vital point when it comes to making the qualification process accessible to adults since easy-to-access opportunities to supplement one's elementary education (be it literacy or complete elementary education) are a prerequisite for the development of all other competencies, i.e. also digital competencies, and for obtaining qualifications required in new occupations.

Further education is also being made more accessible by the **availability of information on educational options, specific educational opportunities, and manners of their funding**. Such information, as well as offers of consulting, can be found on the central website erwachsenenbildung.at, specifically under the link https://erwachsenenbildung.at/bildungsinfo/beratungswegweiser/. Once again, this link page and consulting network were established by state institutions. Under the umbrella of the Austrian Educational Counselling Initiative, funded by ESF, state governments, BMBWF, and others, a nation-wide system of further education counselling centres was set up, offering its services through personal or remote consulting (e-mail, homepage, phone). Online educational counselling has its own website https://www.bildungsberatung-online.at/startseite. The link page erwachsenenbildung.at is primarily the responsibility of the BMBWF. The counselling offered there concerns not only searching and

[72] Initiative Erwachsenenbildung, for more see https://www.initiative-erwachsenenbildung.at/initiative-erwachsenenbildung/was-ist-das/at.

choosing suitable forms of specific educational activities, but also the acquisition of funds to finance one's education.

Besides an engine for looking up counselling and educational opportunities, **the state-funded adult education portal erwachsenenbildung.at**, a fundamental link page on the subject, features an adult education support engine, a separate tab for the subject of digital professionalization in adult education, and the electronic version of the Erwachsenenbildung, with research articles, experiences with adult education, etc. The website also features a lot of interesting content for educators and professionals in the area of further education (articles, research reports, aids and tools for download, mooc courses, webinars, podcasts, and other forms of content concerning further education (research, practice, education policy). Such link pages improve, among other things, professionalism and quality in the field of further education. Quality education, implemented professionally, subsequently has a more positive impact on its participants.

ERWACHSENENBILDUNG.AT features essentially all meaningful content which can be seen as providing information and support services for professional educators of adults. The portal also conveniently groups all relevant information, with links to start one's further education. Those who are indecisive or are not satisfied with the website's search engines can turn to a nation-wide counselling system. The information on the website comes from reliable sources. Unions could promote the creation of a similar link-page, a verified and actively managed source of information and counselling as one possible measure, or be directly engaged in its creation, in cooperation with other organisations.

Further education resources and support recipients

In Austria, further education is funded by different entities[73]. For example, the federal government and the Public Employment Service (AMS) approve various subsidies for employees and the unemployed if such an education will lead to higher qualifications or to the obtaining of a higher degree of education. Additionally, subsidies for selected population groups are available relatively often, e.g. for mothers returning to work or for the disabled. Occasionally, educational subsidies are provided to those who wish to become self-employed.

The Federal Ministry of Education, Science, and Research[74] supports generally beneficial societies concerned with further education, observing statutory terms governing the support of adult education and libraries when distributing subsidies.[75] State governments also support professional education and training, geared primarily to retraining or the pursuit of an occupation as required in the labour market. Employer organisations in individual states issue educational vouchers which can be used to acquire professional education or in education centres for adults. There are also several subsidies for very specific types of education or for education in certain competencies which are important for society, such as subsidies for the development of digital competencies or education in nursing. Moreover, some union associations support further education, usually covering the cost of professional training courses and training concerning particular occupations.

[73] https://www.bmbwf.gv.at/Themen/eb.html
[74] Bundesministerium für Bildung, Wissenschaft und Forschung, https://www.bmbwf.gv.at/.
[75] Federal Financing Act on the Funding of Adult Education and Public Libraries from Federal Funds - Gesamte Rechtsvorschrift für Förderung der Erwachsenenbildung und des Volksbüchereiwesens aus Bundesmitteln. Full version on https://ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=10009356.

Projects funded from ESF resources are co-financed by the Federal Ministry for Education, Science, and Research and covering these priority areas: improving basic literacy (reading, writing, counting, basic digital competencies), completing basic education, further education counselling, and professionalization of further education.

The Public Employment Service Austria[76] (AMS) is a key institution citizens can turn to in case changing qualification requirements, brought about by technological development, cause them to need educational consulting, further education support, and last but not least assistance with looking for a job and identifying suitable ways of doing so. Concerning further education, AMS' branches[77] provide counselling and information relevant to choosing an occupation and educational path[78] (including counselling centres). Those interested in AMS' services can use the AMS-Karrierekompass website[79] (information on occupations, education, and offers of education) or the initial and further education database [80] (incl. the option of looking up further educational opportunities, supported by AMS), as well as obtain counselling regarding the funding of further education[81] (different types of further education subsidies, e.g. for the unemployed who need to continue their education, undergo retraining, etc.) and support when arranging a so-called Bildungkarenz[82].

Education leave (Bildungskarenz) allows one to receive further education without terminating their employment. The employer and employee conclude an agreement, with the employee not being remunerated for their work by the employer; if they fulfil all terms, however, they can receive educational subsidies from AMS while in education, equivalent to unemployment benefits. Over a period of 4 years, the employee can take up to 12 months' worth of education leave which can be taken intermittently but always for the minimum period of 2 months, though taking the full 12 months at once is also a possibility. Employees can educate themselves abroad, in fields related to their occupation (language and professional training), or undergo qualifying education. In order to take an education leave, an employee must have been in employment for at least 6 months.

Part-time education leave (Bildungsteilzeit[83]) is another way of broadening or improving one's qualifications while in gainful occupation. In this case, the employee and the employer agree that the former's employment will be reduced by 25–50 % (they need to keep working for at least 10 hours a week while educating themselves for 10 hours a week at minimum) and the employer is entitled to receive a monthly financial subsidy from the AMS. Education of this type can last from 4 to 24 months and the employment can be adjusted to said extent over the period of 4 years, possibly in sections.

Education leave and part-time education leave as two statutory tools are possibly the clearest advantage enjoyed by Austrian employees over the Czech ones. Introduction of this tool would help turn the demand for and the idea of lifelong education into an actual possibility. It is the goal of unions

[76] Arbeitsmarktservice Österreich, www.ams.at.
[77] Basic overview on https://www.ams.at/arbeitsuchende/aus-und-weiterbildung.
[78] For more see https://www.ams.at/arbeitsuchende/aus-und-weiterbildung/berufsinformationen.
[79] For more see https://www.ams.at/arbeitsuchende/aus-und-weiterbildung/karrierekompass.
[80] For more see https://www.ams.at/arbeitsuchende/aus-und-weiterbildung/ausbildungs--und-weiterbildungsdatenbank.
[81] For more see https://www.ams.at/arbeitsuchende/aus-und-weiterbildung/so-foerdern-wir-ihre-aus--und-weiterbildung-.
[82] https://www.ams.at/arbeitsuchende/aus-und-weiterbildung/bildungskarenz-weiterbildung-mit-einkommen.
[83] For more see https://www.ams.at/arbeitsuchende/aus-und-weiterbildung/so-foerdern-wir-ihre-aus--und-weiterbildung-/bildungsteilzeitgeld#wasistbildungsteilzeit.

to advocate for the introduction of relevant statutory changes and to pressure employers to be open to the notion of their employees availing themselves of these options or even recognise their benefits (i.e. employees continuously improving their qualifications).

The **ÖGB** union association (Österreichischer Gewerkschaftsbund) is an example of union activity. ÖGB offers further education as a tool for supporting certain groups, e.g. women, affected by the pandemic more than men. ÖGB's women's group set 5 goals regarding the promotion of women[84], including the establishment of a foundation promotion (further) education of women, or of a counselling body focused on women in the labour market. Specific measures are currently not available, only the agenda.

The so-called ÖGB "union school"[85] provides adult education, but also focuses on knowledge and skills which are useful for union activities and political work. As an example of specific ways in which the organisation promotes further education, let us mention its local branch—ÖGB Tyrol contributes to their members' education fees[86] if they study or are enrolled in courses at specific educational institutions and their education is job-related. The contribution amounts to 10 % of the cost of education if the course costs up to 300 EUR; if the expenses surpass this sum, the contribution ranges from 60 to 299 EUR.

As is the case with other union organisations, the offer of direct educational activities focuses predominantly on education for the purposes of union activity. In terms of content, the education specialises mostly in political work and the advancement of goals important to the employees being represented.

An example worthy of being followed, the so-called **digi-winner**[87], a joint programme of Arbeitkammer Wien (AK)[88] and the municipal fund Waff[89], provides specific employee support ensuring that digital transformation is handled well. The programme gives AK members financial support to receive occupational education and further education in the digital field. The support is conditioned on the applicant living and working in Vienna, and amounts to 5000 EUR at maximum. Based on their income, applicants can receive funds of 40 to 80 % of course expenses. The education must be provided at educational institutions recognised by Waff. The goal is to improve employees' chances in the digital world of labour, help them acquire new skills or even qualifications, and enhance their employability. In this case, the provision of support aimed at digital skills and qualifications creates a relationship between employee representatives and a municipal-bound fund, becoming a local activity.

Another source of inspiration, **waff**[90], the Vienna Employment Promotion Fund, supports Viennese workers in their career advancement and offers them a number of educational opportunities. Founded in 1995 on the initiative of employee interest groups, its main goal is to provide the Viennese with information, counselling, and financial funding for their career growth. The organisation also closely cooperates with AMS Vienna. Waff also performs a vital coordination function in the creation and

[84] For more see https://www.oegb.at/themen/arbeitsmarkt/arbeitsmarktpolitik/kuerzere-arbeitszeiten-und-weiterbildung-gegen-arbeitslosigkeit.
[85] https://www.oegb.at/der-oegb/bundeslaender/tirol/bildung/gewerkschaftsschule-startet-wieder-.
[86] https://www.oegb.at/der-oegb/bundeslaender/tirol/bildung/bildungszuschuss.
[87] digi-winner, for more see https://www.waff.at/foerderungen/digi-winner/.
[88] The Chamber of Labour, https://wien.arbeiterkammer.at/index.html.
[89] Vienna Employment Promotion Fund (Wiener ArbeitnehmerInnen Förderungsfonds – waff), www.waff.at.
[90] https://www.waff.at/der-waff/

implementation of the Viennese Qualification Plan, established in 2012 at the city hall's behest. The plan has been extended to 2030, prioritizing the provision of help to the Viennese with mandatory matura or lower attainment requirements, and of quality professional education to even younger people (dual education system), a prerequisite for finding employment in the labour market.

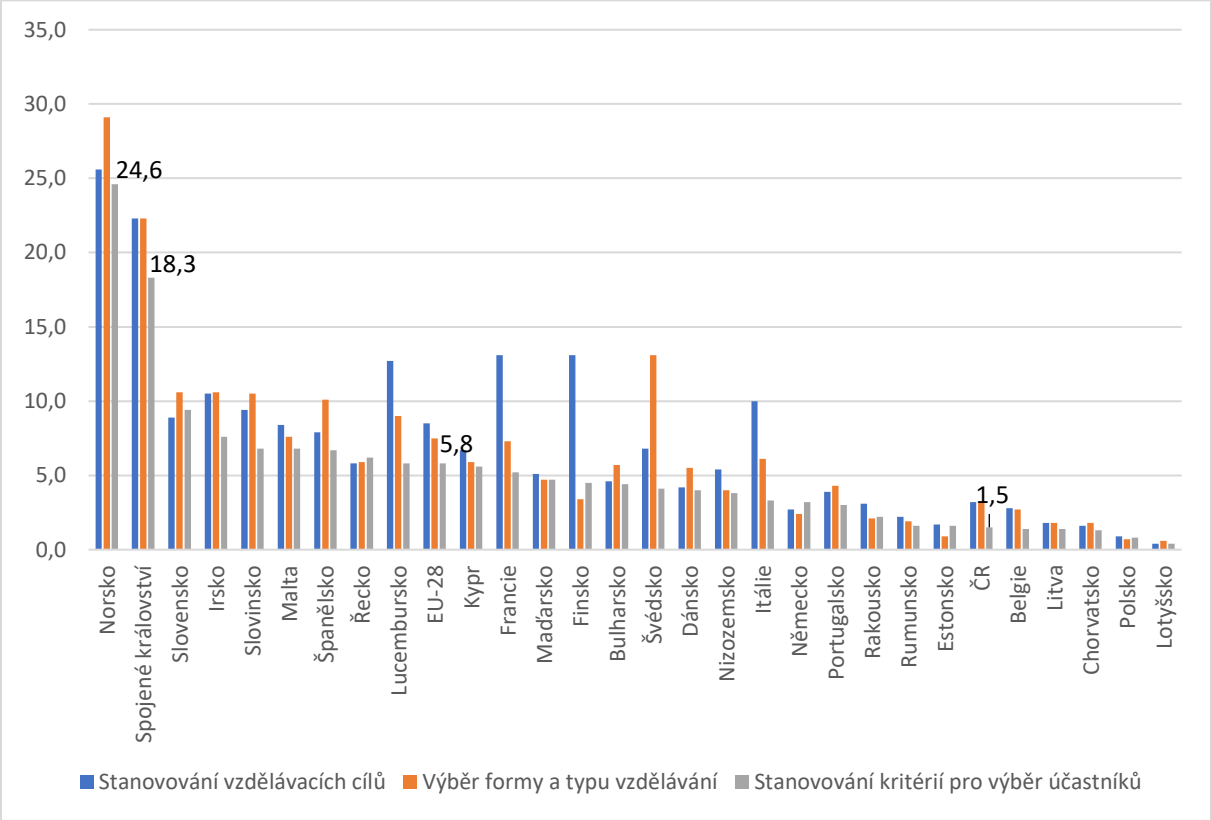
Union organisations might be inspired by the opportunity to look for partners and ways of giving employees threatened with the digitisation of economy support in their further education in as concrete a form as possible, especially via financial contributions but also through suitable course offers. In this manner, unions can specifically help the development of education and improve the situation of at least some specific employees.

V.2 Situation in Czechia—Assessment

The rate of employees' participation in managing further education in businesses can be roughly compared, using the results of the international CVTS survey[91]—see Chart 20. The chart shows three selected forms of participation—joint decision-making concerning educational goals, selection of the form and type of education, and determining the criteria for applicant selection. The latter is especially important in the context of the issue of potential discrimination and effect on the education of threatened employee groups as it gives employee representatives or unionists the option of practically preventing discrimination and unequal access to education in businesses. According to the chart, Czechia scores well below the EU-28 average, in all three categories. In terms of the EU-28 average, employees help make decisions on educational goals in 8.5 % of business, with Norway (not included in the EU-28 average), enjoying the highest percentage out of European countries—25.6 %. In Czechia, employees participate in setting educational goals in 3.2 % of businesses. In the EU-28, employees in 7.5 % of businesses help select the form and type of education, with Norway once more having the highest percentage out of the monitored countries—29.1 %. In Czechia, the figure is 3.2 %. In most European countries, employee participation in the selection of target groups for education is the least common out of all three categories—5.8 % in the EU-28. The figure is the highest in Norway—24.6 %. In Czechia, employees in only 1.5 % of businesses have the power to make joint decisions on who in their business will receive education—one of the lowest figures in Europe.

[91] Continuing Vocational Training Survey (Eurostat).

Chart 20: Employee representatives' participation in managing further education in businesses (Eurostat, survey CVTS, 201592)



Source: Eurostat, table [trng_cvt_09n2], NVF adjustments.

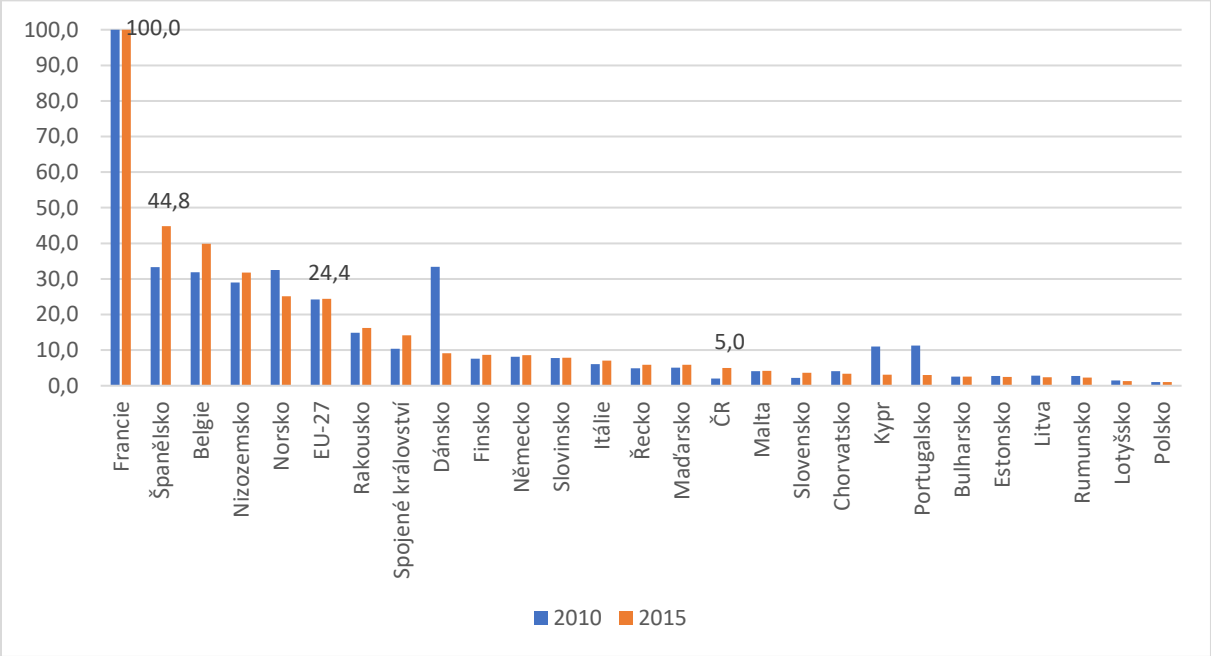
Norway, United Kingdom, Slovakia, Ireland, Slovenia, Malta, Spain, Greece, Luxembourg, EU-28, Cyprus, France, Hungary, Finland, Bulgaria, Sweden, Denmark, Netherlands, Italy, Germany, Portugal, Austria, Romania, Estonia, Czechia, Belgium, Lithuania, Croatia, Poland, Latvia

Determining educational goals, Selecting form and type of education, Determining participation selection criteria

Graf 21 shows the percentage of businesses, as ascertained by a CVTS survey, which have concluded a collective agreement governing, among other things, further professional training. The chart also provides information on the development between 2010 and 2015[93]. Over this period, situation in some countries improved while in others it deteriorated. In regards to the EU-27 average, the situation essentially did not change whatsoever (24.2 % of businesses in 2010 vs. 24.4 % in 2015). Although Czechia lags significantly behind the average, the situation is improving—the percentage of businesses where such provisions are included in collective agreements had grown from 2 % in 2010 to 5 % in 2015. France is a special case as, likely due to the presence of national binding collective agreements, 100 % of businesses have enshrined the right to education in their collective agreements.

[92] Newer data is not available due to the periodicity of CVTS surveys.
[93] Newer data is not available due to the periodicity of CVTS surveys.

Graf 21: Percentage of businesses with a collective agreement between social partners regulating further professional training (% of all businesses)

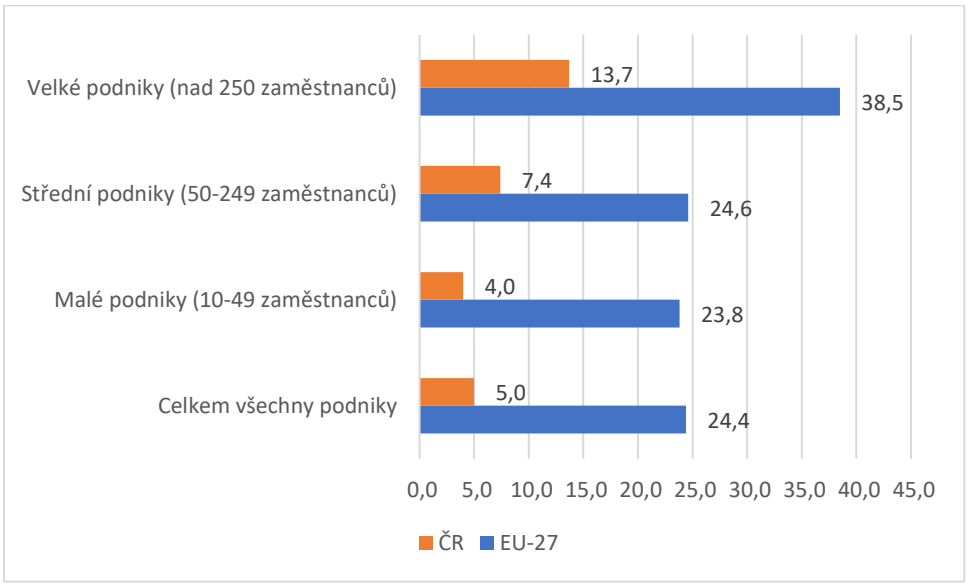


Source: Eurostat, table code [trng_cvt_08n2].

France, Spain, Belgium, Netherlands, Norway, EU-27, Austria, United Kingdom, Denmark, Finland, Germany, Slovenia, Italy, Greece, Hungary, Czechia, Malta, Slovakia, Croatia, Cyprus, Portugal, Bulgaria, Estonia, Lithuania, Romania, Latvia, Poland

Another interesting view of the situation in Czechia is offered by Chart 22 which shows the relationship between business size and collective agreements regulating further education. As assumed, the percentage of businesses concluding such agreements was the highest among big companies with more than 250 employees (13.7 %) and the lowest among small businesses with 10–49 employees (4 %). The small business category also saw the greatest drop when compared with the EU-27 average where the percentage among small and medium businesses was lower as well, though not to such a striking degree (23.8 % of small businesses concluded such agreements, compared to 38.5 % of large companies). In this respect, there is a clear opportunity in terms of promoting small and medium businesses in Czechia.

Chart 22: Percentage of businesses with a collective agreement regulating further professional training—by business size (in %, CVTS, 2015)



Source: Eurostat, table code [trng_cvt_08s], NVF adjustments.

Large businesses (over 250 employees), Medium businesses (50–249 employees),Small businesses (10–49 employees), All businesses in total

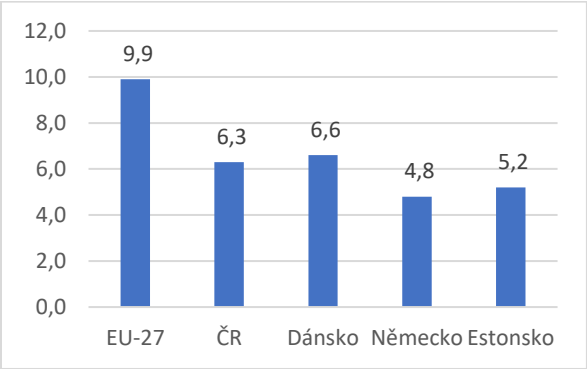
The following series of charts (

Chart 23: Percentage of businesses where employee representatives participate in decision-making concerning professional education (in %)Chart 23) shows some of the above-mentioned and other powers allowing employees in businesses to participate in decisions on professional training, compared to the EU-27 average and three selected European countries. The most general category of questions concerned the participation of employee representatives in professional training management. The highest percentage of positive answers was given in the EU-27 average—9.9 % of businesses in 2015. In Czechia, the percentage was only 6.3, a figure comparable with the selected countries of Denmark, Germany, and Estonia.

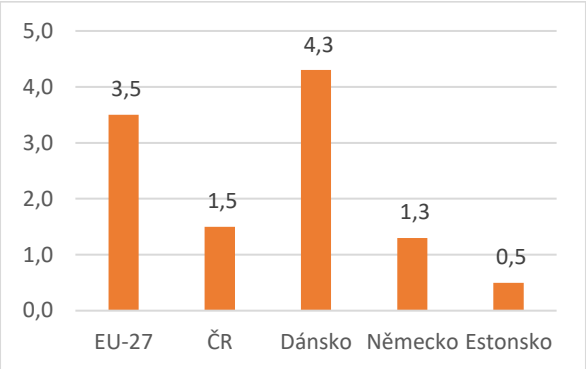
In the EU-27, employee representatives help determine educational goals in 6.3 % of businesses. In Czechia, the figure is just 3.2 %. The form or type of education can be chosen by employees in 5.1 % of European and 3.2 % of Czech businesses. Employees help make decisions on education in 5 % of European and 3.2 % of Czech companies. Employees in 3.5 % of European and 1.5 % of Czech companies help evaluate education. Education budgets can be influenced by employees just in 2.3 % of European and 0.7 % of Czech businesses. Similarly, the process of selecting external supplies is rarely subject to joint employee decision-making—it is present only in 1.9 % of European and 1.8 % of Czech businesses. The monitored countries rank below the EU-27 average in most categories, with the exception of Denmark which scores above-average in terms of employee participation in evaluating education and selecting education's form/type, content, and provider. Czechia lags behind Denmark and the EU-27 in all categories, though it ranks slightly above Germany and Estonia.

Chart 23: Percentage of businesses where employee representatives participate in decision-making concerning professional education (in %)

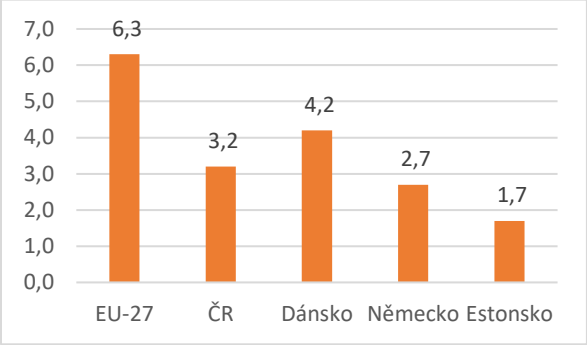
Further professional education management



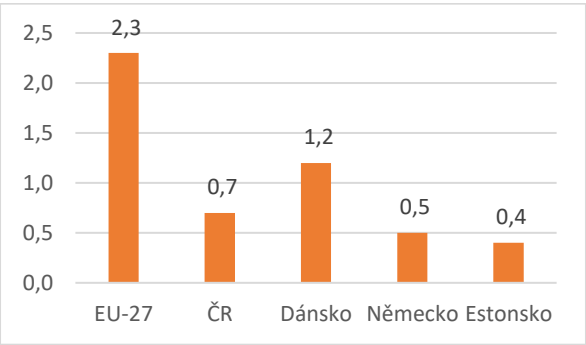
Evaluation of educational outcomes



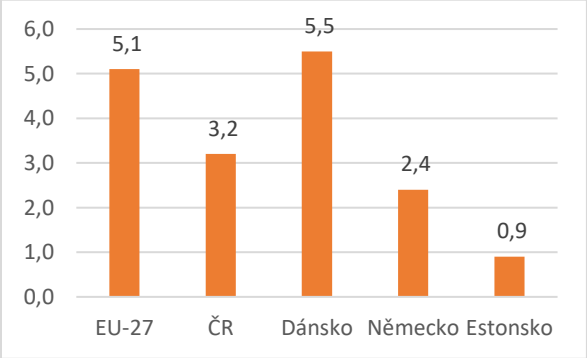
Setting educational goals



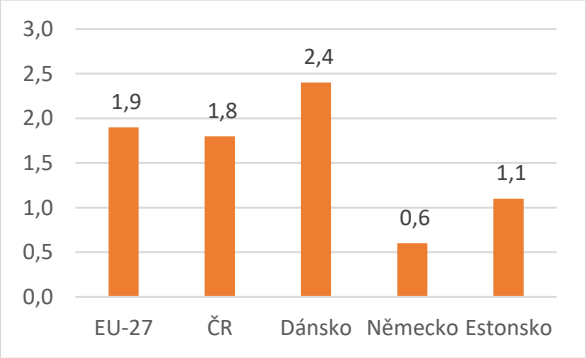
Setting budget for education



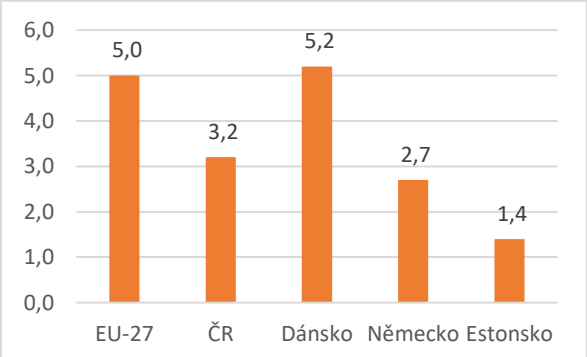
Choosing form/type of education



Choosing external providers



Choosing educational content

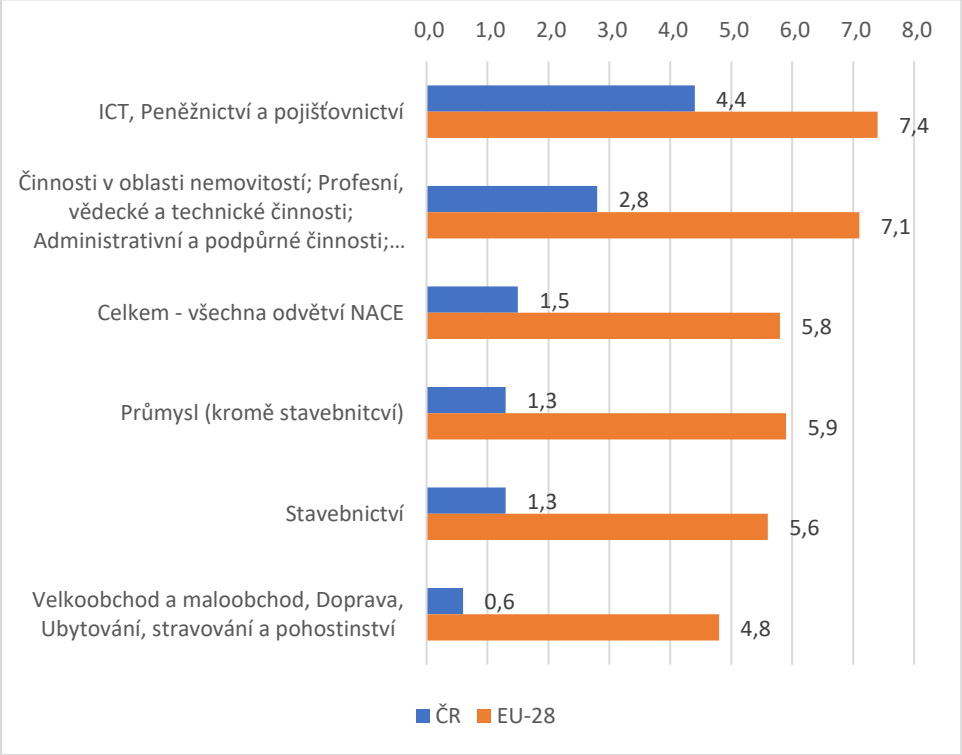


Czechia, Denmark, Germany, Estonia

Source: Eurostat, table codes: [trng_cvt_09n2], [trng_cvt_08n2], NVF adjustments.

A more detailed look at employee participation in the selection of target groups for education is offered by Chart 24. The chart shows that in Czechia, just as in the EU-28, employees in such sectors as ICT, financial and insurance activities (4.4 %) are the most likely to participate in this type of decision-making. This is also the sector where Czechia lags behind the EU-28 the least (7.4 %). Real estate activities, professional, scientific, and technical activities, administrative and support service activities, arts, entertainment and recreation, and other service activities rank second (2.8 %). This is followed by industry and construction (each 1.3 %) and concluded by employees in wholesale and retail trade, transportation, accommodation and food service activities who have by far the least say in this type of decision-making (0.6 %), significantly lagging behind the EU-28 average (4.8 %).

Chart 24: Percentage of businesses where employee representatives help set criteria for selecting corporate education participants (CVTS, 2015)



Source: Eurostat, table code [trng_cvt_09n2], NVF adjustments.

CZ, EU-28
ICT, financial and insurance activities
Real estate activities; Professional, scientific, and technical activities; Administrative and support service activities…
Total—all NACE sections
Industry (apart from construction)
Construction
Wholesale and retail trade, Transportation, Accommodation and food service activities

In Czechia, further employee education has long been marginalised both by employees who tend to prioritise short-term profit maximisation, and by employees who often assume education ended with their compulsory education and thus is not relevant to adults. Over the past few years, we have seen a new development, with the combined forces of automation and robotic automation bringing about a gradual change in many a job description, as well as of economic growth and worsening shortages of adequately skilled workers, resulting in growing wages. In these circumstances, employers especially

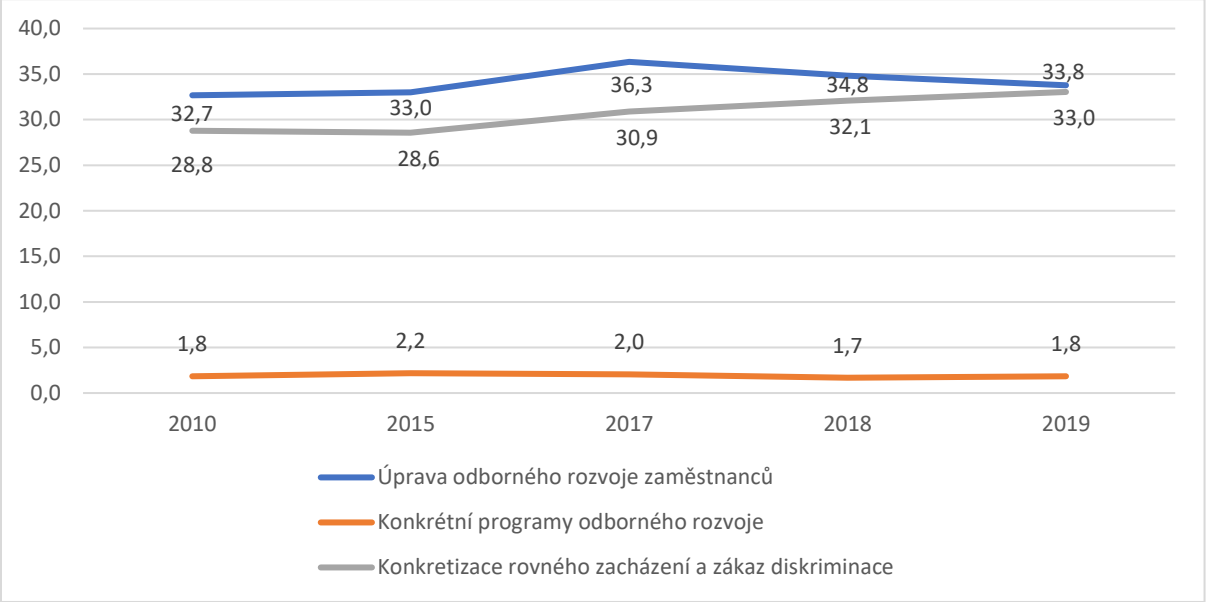
are beginning to strongly emphasise the issue of education as they are becoming increasingly aware of its irreplaceable role in preserving competitiveness. In terms of corporate education, Czechia is no longer the "ugly duckling" when compared with other European countries. Research shows that the overwhelming majority of businesses educate their workers and the situation keeps improving even in regard to individual education (see Chapter IV). According to a 2020 survey by the Czech-Moravian Confederation of Trade Unions[94], 95 % of employers and 94 % of employees recognise that "employees definitely need to further develop their knowledge and skills in their employment." There is also an agreement that lifelong education is not just an individual responsibility of employees and that businesses should participate in some manner (68 % of employers and 72 % of employees agree).

In practice, though, education remains a marginal topic in collective bargaining. In contrast to certain Western countries, not even collective agreements pay enough attention to the issue of education in Czechia.[95] This is a paradox as parties declare a high degree of awareness of the necessity of lifelong education, but this awareness is not adequately transformed into specific union activities in businesses and the stated need is not reflected in collective bargaining processes or in collective agreements.

In Czechia, whether provisions on education are included in collective agreements or not is ascertained by the IPP survey (Ministry of Labour and Social Affairs), taking into account the perspective of individual union associations. The survey determines the percentage of collective agreements in union associations which contain stipulations on employees' professional development. This percentage may have seen a long-term growth (from 32.7 % in 2010 to 33.8 % in 2019) but the growth was very small and in recent years was even replaced with decline (from 36.3 % in 2017 to 33.8 % in 2019)[96]. The percentage of collective agreements specifying particular educational programmes and the number of employees participating is essentially negligible and has not changed much over time (1.8 % of collective agreements, both in 2010 and 2019)—see Chart 25 and tables in the Annexe (Table 6, Table 7). In terms of provisions banning discrimination and granting the right to equal treatment, the situation is more favourable as these stipulations are present in approximately one third of collective agreements, becoming increasingly common (see Table 8 in the Annexe).

[94] Median: Lifelong learning, education, and personal growth of employees in Czechia. Czech-Moravian Confederation of Trade Unions, 2020.
[95] See e.g. ČMKOS: Vzdělávání 4.0 a sociální partneři v České republice. Praha srpen–září 2019
[96] Ministry of Labour and Social Affairs: Výsledky šetření Informace o pracovních podmínkách. Publication archive: https://www.mpsv.cz/web/cz/archiv-publikaci-ipp

Chart 25: Percentage of collective agreements in Czechia containing the following (in %)



Source: MPSV: Výsledky šetření Informace o pracovních podmínkách. Publication archive: https://www.mpsv.cz/web/cz/archiv-publikaci-ipp.

Provisions on employees' professional development, Specific professional development programmes, Provisions specifying equal treatment and banning discrimination

This is caused primarily by the fact that collective bargaining keeps fixating on traditional subjects, especially on wages and working conditions (see above), regardless of whether the parties want to do "business as usual", do not have enough personnel or time to change, or remain convinced that wages still ultimately are the most important topic of employer negotiations. Question remains how "authorised" union leaders are by their membership to address education. The fact likely is that although practically everyone is aware of the need for education, in Czechia the subject still does not have the power to "trump" the issue of finances when it comes to setting priorities for negotiating.

In the context of education as a measure to prevent discrimination in the labour market, the above-mentioned Czech-Moravian Confederation of Trade Unions survey revealed two weak points in the Czech labour market. For one, it showed that when compared with employees, both employers and unionists tend to report more that their businesses implement education. This suggests a lower awareness of corporate educational activities on the part of regular employees who may consider education to be important but do not know it takes place in their company. The second weak point, 64 % of unionists and 59 % of employees believe lifelong education should be available to all employees equally. This view, however, is shared only by 49 % of employers who make decisions regarding the practical availability of lifelong education in businesses. 21 % of employers believe lifelong education should be available exclusively to the management and skilled workers (compare with 8 % of unionists and 7 % of employees who share this view).

Unfortunately, it is the most threatened groups of employees who participate in education the least—the low-skilled, older employees, employees receiving low wages,[97] and employees whose work is the

[97] ČMKOS: Vzdělávání 4.0 a sociální partneři v České republice. Praha srpen–září 2019

most at risk from ongoing automation[98]. Higher social partner participation in the area of further education is recommended by e.g. OECD,[99] emphasising the partners' potential high merit. A frequently mentioned argument, research has repeatedly demonstrated a relationship between low educational attainment and low willingness/motivation to engage in further education. Although there certainly is a certain relation, the issue is much more complex in practice. Low-skilled workers often find themselves in a disadvantageous position in their businesses, which does not afford them much opportunity to take interest in further education. Their experience leads them to believe they are locked in their position and have no hope of improvement. Simultaneously, their low wage amount and the related difficult living situation does not leave them with much space or personal energy to attempt further professional development. Thus, they might not necessarily be uninterested, instead rationally evaluating their situation or not having sufficient basic awareness of their options. In this regard, consulting and assistance would be beneficial, comprehensively addressing the situation of such employees, with the promotion of education being only one of its dimensions.

Sadly, the notion that low-skilled workers "do not need" to be educated is frequently shared by businesses. If a low-skilled worker shows interest in education, it might not be provided as their business does not view such an investment as meaningful. The role of unionists should be to connect and harmonise ideas of the parties involved, as well as formulate realistic goals which would benefit them both. What is required is the promotion of qualified skills assessment and consulting, used for establishing these realistic, mutually beneficial goals of education.

Summary and recommendations

Over the past few years, certain aspects of Europe's employment structure development have signalled a shift to technologically-heavy economy in the vein of Industry 4.0. To an extent, we can say there already are the first obvious changes in the employment structure, brought about by a combination of demographic, technological, and economic shifts: rising importance of care occupations (social and health care services) and skilled technological work (especially in ICT). Some, though not significant, decline is evident in the case of activities routine in nature (retail and wholesale trade, administration). Nevertheless, what has occurred so far can be described as hints of change. Circumstances greatly depend on the conscious course of individual countries, as evident primarily in the growth of ICT employment in Estonia.

Regarding job losses as a result of workers being replaced with technology, statistics show that over the past decade new technologies did not have a significant effect on the reduction of working opportunities, neither in Czechia, nor in Europe. Thus, catastrophic predictions regarding development in Europe have not come true, to the contrary—the employment rate has increased over the past decade. As demonstrated by some other surveys, the greatest changes are occurring within individual occupations as technologies are beginning to permeate all activities, changing the description of

[98] OECD (2019), Getting Skills Right: Making adult learning work in social partnership (www.oecd.org/employment/emp/adult-learning-work-in-social-partnership-2019.pdf)
[99] OECD (2019), Getting Skills Right: Making adult learning work in social partnership (www.oecd.org/employment/emp/adult-learning-work-in-social-partnership-2019.pdf)

almost all jobs and causing workers to quickly adapt to and master it. These changes are not statistically noticeable which makes them all the more significant.

Out of the EU-27 and the countries being compared, Czechia is characterised by a relatively low presence of the two occupation categories requiring the highest qualifications: managers (ISCO 1) and professionals (ISCO 2), as well as the lowest commonality of those working in elementary occupations (ISCO 9). Conversely, Czechia has a high number of craft and related trades workers (ISCO 7) or plant and machine operators and assemblers (ISCO 8)—occupational groups which are not very qualifications-intense. The manufacturing industry, the largest employer in Czechia, has a significant effect on this stratification of the Czech economy.

As opposed to the countries being compared, the Czech economy and industry specifically are characterised by a significantly smaller commonality of occupations falling under the umbrella of professionals. Figuratively, this translates to a low percentage of qualifications-intense work. Conversely, the extensive presence of the ISCO 7 and ISCO 8 groups in the Czech economy points to a large percentage of low-skilled work which generates smaller added value. On the other hand, elementary occupations have the smallest presence in the Czech economy when contrasted with the other countries being compared. Over the past few years, the number of professionals in Czechia grew slightly, though not more than in the other countries being compared; thus, the relatively small presence of professionals in Czechia remains unchanged. During the monitored period, the number of plant and machine operators in the Czech manufacturing industry dropped significantly, nevertheless the percentage of workers in elementary occupations grew. It is therefore likely that the low-skilled ISCO 8 workers were replaced by unskilled ISCO 9 workers.

The small commonality of high-skilled work, combined with the high presence of low-skilled work in the Czech economy, is to an extent related to the structure of the national, manufacturing-oriented economy characterised by a great rate of foreign ownership of manufacturing businesses, with significant outflows of profits to the owners' home countries and no re-investments into, for example, research and development in Czechia. Moreover, low wages in Czechia still make the incorporation of human labour in manufacturing more advantageous when compared with expensive investments in digitisation, automation, and robotic automation. On the other hand, it needs to be taken into account that a large segment of the low-skilled work in Czechia can be extensively automated, bringing about rapid changes in the employment structure of the manufacturing industry. Such a scenario might occur, for instance, if new technologies become much cheaper.

Czechia's population has long been increasing but its structure is changing, with the number of groups of unproductive age growing. In terms of employment, this could mean that even groups which tend to be less sought-after can find employment or that there is a rising need for foreign workforce. From 2010 to 2019, unemployment in Czechia dropped steadily due to a positive economic development. In 2020, it grew slightly because of the COVID-19 pandemic.

Unskilled applicants and those applying for jobs in services and sales constitute the biggest group of the unemployed. Additionally, the percentage of these two groups saw the biggest growth. On the other hand, the number of unemployed craft and related trades workers or technicians and associate professionals decreased, likely on account of a strong demand in the Czech manufacturing. In terms of the four skill levels, the percentage of less-skilled and unskilled workers grew over the monitored period.

High-schoolers without matura are the most common educational group in the unemployed population; the college-educated the least common. Over the past ten years, the percentage of high-schoolers without matura dropped significantly; on the other hand, the number of the college-educated grew. To a degree, this correlates with the growing numbers of the college-educated and declining percentage of high-schoolers without matura in the general population. The percentage of the unemployed with an elementary education also increased, though the number of people with an elementary education in the general population is decreasing.

New technological possibilities open up opportunities for new forms of work and employment, posing serious consequences to the position of workers and their working conditions. They give workers a flexible environment and new opportunities but also bring about frequent risks. Important aspects, besides issues of remuneration and social protection, include limited access to opportunities to improve one's occupational skills and professional career. Research shows that employees working fixed-term or part-time or non-standard forms of jobs do not receive courses and training from their employers to the same extent as other workers. This may trap them in low-skilled, low-paid work.

Czechia has one of the highest participation rates of the employed population in informal job-related education out of the EU-28, in all of the years for which data is available, i.e. in 2005, 2010, and 2015 (see the European Working Conditions Surveys—EWCS). The Labour Force Sample Survey (LFS) has shown that while Germany's education participation rate remained essentially unchanged in 2019 when compared with 2019, Czechia's dropped by 3 %; on the EU-27 average, the rate declined by almost 2 %. The pandemic has also affected the forms of education being provided and helped spread the creation and use of online courses whose significance will keep increasing, among other factors due to a shift in the didactics of teaching.

Regarding equal access to education, it is important to prevent gender or age discrimination. Participation of men and women of old age is influenced primarily by the nature of their occupations, i.e. whether they are associated with changing demands for skills and knowledge and when these changes occur. For this reason, it is difficult to assess, using statistical data, whether discrimination occurs or not as participation in education is not ascertained by individual occupations. Unions play an irreplaceable part as they can map the actual conditions in individual businesses.

Education for people of older age is gaining importance as population ages and the age when one becomes entitled to pension keeps being raised. These facts were one of the factors leading to the increase in the rate at which employed persons aged 55+ participated in informal education. However, when we contrast the participation of this age group with the total participation of employees aged 15–64, it is clear that the former suffer from discrimination to a degree, in all countries being compared, the EU-28, and in all monitored years. The basic reason for this clearly has yet to be dealt with, i.e. the shorter time during which businesses and individuals are able to enjoy the benefits of education.

Length of education reflects primarily the scope and depth of the knowledge or skills being supplemented which is why it is not possible to determine a general, optimum education length. According to the EWCS, employers in the EU-28 and in the monitored countries, including Czechia, most frequently educate their employees for two or three days. Circa one third of the total number of employees being educated participates in education of this length. Czechia is also characterised by short-term courses of one day at the most; conversely, long-term education of more than 10 days is

the least common type. It is clear that if a need for more long-term courses arises, the role of the state will gain in importance.

Changes in economies' qualifications intensity are to a degree indicated by changes in the percentage of people performing jobs associated with the need to supplement one's knowledge and skills if said jobs are to be done flawlessly. In Czechia, the negative development of this indicator leads us to conclude that the Czech economy was less qualifications-intense in 2015 than in 2005. In 2005, jobs associated with the necessity to improve one's knowledge and skills were performed by ca 71 % of employed persons; in 2015, the percentage dropped by 4 points. Conversely, both the EU-28 average, and all the countries being compared saw the opposite development.

Comparisons of data on the percentages of people participating in education and of those whose jobs require them to enhance their knowledge and skills show that the necessity of enhancing one's knowledge and skills exceeds the education participation rate, both in all the countries being compared and on the EU-28 average. Czechia's position is affected by the fact that when compared with other countries, Czechia has a lower percentage of people performing occupations requiring them to enhance their knowledge and skills and a higher percentage of those participating in education.

The education participation rate of the employed population in Czechia has been declining since 2018, a negative trend worsened by the pandemic. In 2020, employee education was affected primarily by the rate at which businesses were suspending their operations, introducing remote work, and whether or not there were advanced online education systems in place. International research has shown that individual type of organisations introduced these measures at different rates. Non-government organisations did not suspend their operations at all (20 % of the respondents), were the most common organisation type to entirely move their operations home (47 %), and did not suspend the education of their employees to a significant extent (12 %). It is clear that the ways in which the pandemic was handled were influenced by the nature of entities' activities, i.e. whether they could be performed remotely, and also by employees' skill level in terms of ability to work with ICT tools.

EWCS outcomes allow us to identify areas of focus for union organisations. Since participating in further education is more difficult for the self-employed, it is recommended that union organisations in related occupations think about defending the interests of this group of workers regarding the necessity of familiarising themselves with the new technologies permeating their professions.

Evaluations of gender and age equality in accessing corporate education should focus on equal access within individual jobs. Statistical surveys, however, do not deal with such minute details. Therefore, unions in individual businesses should be mapping any differences in individual or at least comparable jobs, identify causes, and in cooperation with the management determine the procedure for ensuring equal employee access to education. Union activity, though, should not target just employers but also employees themselves in order to harmonise the gender and age aspect of workers' willingness to participate in further education.

Unions should pay attention to whether or not employees in their businesses are provided with education of a length adequate for the scope of new knowledge and skills being received in relation to the existing ones. In this respect, there is room for cooperation between unions and employers when it comes to designing the education's very focus, ensuring the greatest benefit in terms of flawless job performance.

Last but not least, unions should make sure individual statutory provisions on initial training, professional practice of graduates, or qualifications improvement are fully respected.

Union organisations should embrace education as their topic and purposefully strive for its incorporation in regular collective bargaining subjects. Employees' right to education should become a part of collective agreements, with the relevant stipulations particularising the nature of education (forms, types, content) and primarily the priority groups of employees who should be receiving the education, ideally also defining their number or the education's scope. It is true that memberships have so far not been emphasising the need for the promotion of educational activities in collective agreements. Thus, there is an opportunity for central union bodies and management to actively raise awareness of the benefits of education, its necessity in the context of upcoming changes in the labour market (see Chapter I), and especially its key role in preventing discrimination and social exclusion. For instance, including the subject of further education in model collective agreements is worth considering. It has been shown that general promotion of education in businesses results in a higher rate of threatened groups receiving education.

Centrally, union organisations should draw up a set of methodical instructions to address the issue of education in collective bargaining, for example formulating arguments explaining the importance of education, as well as strategies for reaching a consensus with employers by identifying the benefits of education for both parties. What is also important is creating an elaborate system of in-house education for unionists, especially those taking part in collective bargaining. They need to be given information, arguments, and ability to take into account new trends and needs of both employees and businesses. Currently, such an education is received mostly by union leaders and needs to be extended to broader memberships. A source of inspiration, the educational catalogue of the German organisation DGB contains courses addressing general topics ("how capitalism works"), critical thinking, or labour issues and professional skills.

Agency workers are a category on their own. There is a general agreement that they enjoy a very weak position in Czechia and are the most at risk of discrimination. Crucially, it is necessary to detect the main problems associated with agency employment and seek legislative solutions to grant fundamental rights to these workers. Corporate education for agency workers is an issue not only in terms of return on investment, but if a business is willing to provide them with education, they are not liable for the government subsidies otherwise provided to fund the education of regular staff. Promotion of regular measures should be considered to grant these workers the right to skills assessment and education via the Employment Office.

Generally speaking, union organisations perceive new forms of work as a threat, fighting for traditional employment and striving to restrict them (legislatively). Recommendations include a gradual change of attitude to view the inevitable expansion of new forms of work as an opportunity. Unions may begin representing these new groups of workers and improve their own engagement and prestige in regards to new employment trends among younger groups. These workers and their conditions should too be included in collective agreements (unlike agency workers, businesses usually conclude agreements of some kind with these employees and thus their inclusion in collective bargaining is legally legitimate). Certain groups of workers doing business under the umbrella of new forms of work do not have information on the union movement and do not show much spontaneous interest in participating. It is vital to provide them with information on the potential of unions and on the possible benefits, as

well as to overcome their distrust of union organisations, relying on a good awareness of these workers' "life stories", working situation, and the related problems. In 2020, the European Commission launched a vast relevant initiative, strongly grounded in social partner consulting. The first stage included consultations on the initiative's priority directions, followed by the development of individual spheres of issues in 2021. This gives Czech union associations an opportunity to influence the creation of proposals and recommendations for relevant European policy.

While union organisations in Czechia are interested in working with and supporting marginalised groups, they frequently do not possess sufficient personnel and professional capacities for this purpose and do not have information on the best way of addressing these groups. For this reason, it is necessary that union headquarters endow their members with methodical support and capacities, targeting the issue of threatened groups. Barriers chiefly take the form of poor communication and little knowledge of the environment and practical living situations of the threatened groups' individual members. Language barriers are also frequently encountered. It is crucial to formulate methodical instructions to systemically overcome these barriers, something to which union members are well predisposed as they often share the workplace with said threatened groups and can employ a relatively low-threshold access. It is also important to pressure businesses into giving unionists enough time to engage in these activities, ideally grounded in the understanding they not only benefit employees but also contribute to the business' successful future.

Systemic professional counselling is a key activity and union organisations should increasingly focus on it. In the current environment, the counselling being provided is primarily legal in nature and rather fragmented, relying on the initiative of individual lawyers and targeting mainly union members. Employees threatened with social exclusion often find themselves in complex living situations characterised by financial difficulties, either not being union members or having their membership suspended as they are not able to pay membership fees. In such cases, union organisations should not limit their attention just to their members but instead view all employees as a potential for their own future development. Union headquarters should draw up more systemic counselling concepts and provide their fundamental organisations with methodical management in defined areas to support threatened groups of employees—e.g. methods for working with workers facing a distraint or with other threatened groups; counselling and information materials addressing general serious situations in life, etc. Based on this management, local organisations should create materials and programmes for threatened employees, tailoring them to the specific situation in their business or location with which they are the best acquainted, taking into account local specifics (e.g. particular measures to promote debt forgiveness, assist with housing issues, provide foreigners with basic information in their maternal language, including local contacts, etc.)

Regarding collective bargaining, the recommendation is to focus not just on occupational education but on the so-called life skills in general. In the case of people threatened with social exclusion, the path to improvement frequently does not lead through professional skills but through regular life skills, considered to be a matter of course by the general society. In this respect, the role of union headquarters may be to systemically support the development of the life skills of marginalised employee groups. What is of vital importance is basic consulting on how to eliminate their debts, find their footing in the society and labour market, learn to create a basic network of contacts, and improve their chances of securing a better job, be it with their current or new employer. In the case of foreigners, counselling may involve courses in the Czech language and elementary cultural facts. Visits

at a career counsellor's office, skills assessment, setting achievable goals, or selecting a retraining course can in and of themselves improve workers' motivation and make them feel like they are in charge of their life and that it is possible to change their poor circumstances.

Last but not least, we need to mention the importance of quality information. Central union organisations in Czechia have a rather poor view of employees' actual situation and characteristics. At the same time, however, union organisations in businesses foster a very close relationship with employees and may serve as a good source of information. Therefore, we recommend to combine and systematise information flows, as well as strengthen analytical and research activities which might help produce a realistic view of the situation on the "lowest" level. Compared with employers, unions can capitalise on their closer, more direct relationship with employees and the greater probability these workers will tell them e.g. about their fears or insufficient skills of which they would be hesitant to inform their employers. It might be beneficial to use anonymous methods of information gathering, adapted to the skills of low-skilled workers (e.g. no online forms these workers would need to fill out on their own; instead they should be provided with some assistance or allowed to choose a different method). Thus collected information on skills shortages should serve as a material for drawing up educational strategies and plans in cooperation with employers, and generally as an argument during collective bargaining. In this manner, unions can take on the role of a middle link bringing valuable (and otherwise barely detectable) information "bottom up" to the higher levels of collective bargaining and generally to the public debate on the promotion of education and support for people threatened with marginalisation.

Cooperating with foreign parties, studying foreign examples, holding study visits or workshops open to the broader unionist base, etc., would also contribute to the improvement of unions' professionalism in this area.

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ANNEXE

Table 2: Incidence of reasons for part-time work

Base year	Reasons for part-time employment						TOTAL
	Occupational/scholastic education	Health reasons	Caring for a child/another person requiring care	Other personal/ family reasons (since 2016)	Could not find full-time work	Other reasons	
2012	36323	53989	45179	0	53526	123107	312124
2013	39776	42281	51436	0	43570	128025	305088
2014	34517	45228	46292	0	56191	138445	320673
2015	36503	48145	43888	0	42001	151954	322491
2016	37653	51128	55240	71214	40906	88814	344955
2017	58308	65350	55812	79632	29912	121299	410313
2018	36901	67201	72159	86503	21857	118593	403214
2019	35553	65177	62395	84745	21058	111929	380857

Source: ČSÚ: Výběrové šetření pracovních sil, 2019

Table 3: Employed persons participating in job-related non-formal education and training in the past 12 months

	2005	2010	2015
EU-27	24,4	32,3	37,0
EU-28	26,4	34,0	39,0
Belgium	41,0	36,7	47,7
Bulgaria	7,7	9,5	15,9
Czechia	26,8	46,5	52,9
Denmark	36,5	44,4	38,0
Germany	25,3	37,1	41,7
Estonia	29,8	37,2	49,2
Ireland	37,9	42,3	50,9
Greece	13,4	14,0	8,8
Spain	19,2	31,1	32,0
France	24,5	25,2	40,8
Croatia	22,6	21,3	26,1
Italy	17,8	26,5	30,4
Cyprus	19,9	27,9	22,9
Latvia	21,9	29,8	34,1
Lithuania	23,0	24,2	33,8
Luxembourg	36,7	35,1	49,2
Hungary	15,8	26,9	25,5
Malta	35,3	31,8	38,4
Netherlands	31,7	49,1	50,5
Austria	37,5	41,5	43,8

Poland	26,5	33,4	35,5
Portugal	15,3	29,8	26,0
Romania	11,4	19,2	19,2
Slovenia	38,4	48,2	43,2
Slovakia	34,1	36,4	47,2
Finland	52,7	51,6	55,2
Sweden	51,6	49,1	45,4
United Kingdom	39,1	45,7	50,6

Source: Eurostat, Eurofound, table code [qoe_ewcs_6_1]

Table 4: Differences in the participation of employed persons aged 15–64 let and 55–64 in informal education, in %

	2005	2010	2015
EU-27	5,1	3,3	5,2
EU-28	5,6	4,2	5,7
Belgium	4,1	4,2	4,2
Bulgaria	1,7	1,2	3,3
Czechia	2,9	1,9	4,5
Denmark	8,7	4,2	0,2
Germany	6,2	0,5	7,4
Estonia	2,9	-2,5	3,1
Ireland	6,6	18,9	7,4
Greece	8,0	3,6	4,0
Spain	6,0	3,0	10,2
France	-1,2	6,4	4,0
Croatia	-7,3	3,0	0,9
Italy	10,6	1,2	2,6
Cyprus	8,9	7,7	11,0
Latvia	-5,5	6,8	8,2
Lithuania	1,8	5,0	-3,8
Luxembourg	11,2	-1,9	6,0
Hungary	-4,2	3,8	-0,5
Malta	-3,0	13,9	8,5
Netherlands	6,4	9,7	2,1
Austria	4,7	9,9	8,8
Poland	7,4	5,1	11,4
Portugal	5,7	16,0	11,6
Romania	4,9	5,5	3,8
Slovenia	14,2	5,2	5,8
Slovakia	-2,8	0,8	4,9
Finland	5,8	7,8	6,4
Sweden	14,3	2,6	3,5
United Kingdom	10,0	11,4	7,8

Source: Eurostat, Eurofound, table code [qoe_ewcs_6_1], author's calculations

Note: Positive values show by how many percentage points the participation of employed men in informal education and professional training exceeded that of employed women; negative values shows predominance of women.

Table 5: Volume of job-related non-formal education and training per participant in the last 12 months by duration

	Total	1 day or less	2–3 days	4–5 days	6–9 days	10–19 days	20 days and more
EU-27	100,0	13,9	30,4	23,4	14,0	9,9	8,4
EU-28	100,0	13,8	30,3	23,6	13,6	10,6	8,0
Belgium	100,0	14,6	30,3	23,7	12,1	12,1	7,3
Bulgaria	100,0	11,7	26,9	21,8	14,5	11,6	13,5
Czechia	100,0	25,0	32,3	23,1	9,5	8,3	1,8
Denmark	100,0	8,3	19,3	18,7	16,5	19,6	17,7
Germany	100,0	11,2	31,9	27,5	14,1	8,3	7,1
Estonia	100,0	20,8	35,3	22,5	11,6	5,7	4,0
Ireland	100,0	16,3	30,4	21,8	11,7	10,6	9,1
Greece	100,0	10,1	32,6	17,8	8,9	23,0	7,6
Spain	100,0	11,1	23,4	21,3	16,8	12,9	14,5
France	100,0	10,8	29,2	24,4	15,2	8,4	12,1
Croatia	100,0	12,1	29,5	22,9	14,0	12,7	8,7
Italy	100,0	15,1	39,0	19,7	11,4	10,6	4,2
Cyprus	100,0	13,0	37,2	18,0	20,6	6,1	5,1
Latvia	100,0	14,0	36,8	23,2	7,8	9,7	8,5
Lithuania	100,0	11,4	31,3	23,5	13,5	15,3	5,0
Luxembourg	100,0	13,3	29,4	19,0	17,0	10,8	10,5
Hungary	100,0	22,2	35,2	15,8	7,1	9,0	10,8
Malta	100,0	17,0	24,7	15,8	14,8	11,9	15,8
Netherlands	100,0	17,5	24,9	22,1	17,4	10,6	7,5
Austria	100,0	12,5	30,2	22,5	15,2	11,7	7,8
Poland	100,0	23,6	33,0	18,9	10,6	7,6	6,4
Portugal	100,0	13,1	34,0	20,6	11,2	13,4	7,6
Romania	100,0	9,6	24,1	19,0	19,5	13,4	14,5
Slovenia	100,0	21,0	29,3	21,8	11,9	8,9	7,0
Slovakia	100,0	18,9	32,8	26,8	11,7	8,5	1,2
Finland	100,0	10,9	32,0	23,8	14,0	13,1	6,2
Sweden	100,0	11,8	27,1	26,1	17,4	12,2	5,5
United Kingdom	100,0	13,7	30,0	24,6	11,9	13,3	6,5

Source: Eurostat, Eurofound, table code [qoe_ewcs_6_2]

Table 6: Percentage of collective agreements regulating employees' professional training

	2010	2015	2017	2018	2019
Total	**32,7**	**33,0**	**36,3**	**34,8**	**33,8**
Czech-Moravian Union Trade of civilian army employees	33,3	75,0	75,0	75,0	80,0
Transportation	14,3	5,7	3,6	3,6	3,8
Transportation, road management, car repair	23,1	41,7	41,7	36,4	36,4
Wood processing, forest and water management	59,6	48,1	52,0	60,3	59,4
ECHO	57,6	77,6	62,7	58,2	59,7
Mining, geology, oil industry	77,8	33,3	48,1	40,7	33,3
KOVO	25,4	25,9	24,4	23,5	24,4
Independent union association of food and associated industries	57,0	42,9	53,9	50,8	45,9
Union railway association	64,0	56,0	67,9	67,9	66,7
Orchestral musicians				33,3	33,3
Hospitality, hotels, tourism	50,0	58,3	64,3	71,4	66,7
Post, telecommunications, newspaper services	30,0	30,0	50,0	50,0	42,9
Finance and insurance workers	62,5	76,5	93,3	92,9	85,7
Workers/employees in trade, logistics, and services	31,8	33,3	26,7	28,6	26,7
Science and research workers	68,2	62,5	64,7	62,5	60,7
Agriculture and nutrition	10,5	37,5	36,0	30,0	13,5
Glass industry, ceramics, fashion jewellery, and porcelain					
CONSTRUCTION	14,3	20,7	22,8	24,8	24,8
Textile, clothing, and leather-manufacturing industry		2,8	2,9		
UNIOS	36,5	39,3	43,3	38,2	37,3
College unions	70,6	63,2	72,2	81,0	75,0
Aviation workers	100,0		80,0	100,0	75,0
Health- and social care in Czechia	66,7	60,9	68,4	64,0	63,6

Source: MPSV: Výsledky šetření Informace o pracovních podmínkách. Publication archive: https://www.mpsv.cz/web/cz/archiv-publikaci-ipp

Table 7: Percentage of collective agreements containing specific programmes of professional development, with numbers of employees concerned

	2010	2015	2017	2018	2019
Total	**1,8**	**2,2**	**2,0**	**1,7**	**1,8**
Czech-Moravian Union Trade of civilian army employees					
Transportation					
Transportation, road management, car repair					
Wood processing, forest and water management					
ECHO		2,0	1,2	1,3	1,5
Mining, geology, oil industry					
KOVO	1,4	0,9	0,9	0,7	1,0
Independent union association of food and associated industries		1,6			
Union railway association	8,0	8,0	7,1	7,1	10,0
Orchestral musicians					
Hospitality, hotels, tourism					
Post, telecommunications, newspaper services					
Finance and insurance workers		5,9	6,7		
Workers/employees in trade, logistics, and services					
Science and research workers		6,3	5,9	6,3	7,1
Agriculture and nutrition		3,1			
Glass industry, ceramics, fashion jewellery, and porcelain					
CONSTRUCTION					
Textile, clothing, and leather-manufacturing industry					
UNIOS	4,8	12,0	13,5	9,8	9,3
College unions				4,8	
Aviation workers					
Health- and social care in Czechia	42,9	4,3	5,3		4,5

Source: MPSV: Výsledky šetření Informace o pracovních podmínkách. Publication archive: https://www.mpsv.cz/web/cz/archiv-publikaci-ipp

Table 8: Percentage of collective agreements particularising equal treatment and banning discrimination

	2010	2015	2017	2018	2019
Total	**28,8**	**28,6**	**30,9**	**32,1**	**33,0**
Czech-Moravian Union Trade of civilian army employees	33,3	25,0	50,0	50,0	40,0
Transportation	9,5				
Transportation, road management, car repair					
Wood processing, forest and water management	45,6	38,9	48,0	54,4	50,7
ECHO	39,4	20,4	34,9	39,2	41,8
Mining, geology, oil industry	44,4	16,7	14,8	22,2	12,5
KOVO	31,1	29,0	28,2	27,2	29,5
Independent union association of food and associated industries	5,8	4,8	5,3	4,6	4,9
Union railway association	28,0	40,0	46,4	50,0	50,0
Orchestral musicians					
Hospitality, hotels, tourism	61,1	58,3	64,3	64,3	60,0
Post, telecommunications, newspaper services	70,0	20,0	25,0	25,0	28,6
Finance and insurance workers	62,5	100,0	93,3	92,9	92,9
Workers/employees in trade, logistics, and services	59,1	41,7	53,3	71,4	60,0
Science and research workers	18,2	15,6	14,7	12,5	10,7
Agriculture and nutrition	68,4	37,5	44,0	60,0	43,2
Glass industry, ceramics, fashion jewellery, and porcelain		6,3	6,5	6,5	6,5
CONSTRUCTION	41,1	58,7	59,6	64,2	67,6
Textile, clothing, and leather-manufacturing industry	2,4		2,9	2,9	11,4
UNIOS	7,7	17,1	19,2	22,0	24,6
College unions	58,8	47,4	55,6	47,6	45,0
Aviation workers	50,0		80,0	100,0	75,0
Health- and social care in Czechia	9,5	30,4	42,1	44,0	40,9

Source: MPSV: Výsledky šetření Informace o pracovních podmínkách. Publication archive: https://www.mpsv.cz/web/cz/archiv-publikaci-ipp