



CALL 2022 ROUND 1 KA2
KA220-ADU - COOPERATION PARTNERSHIPS IN ADULT EDUCATION
2022-1-IT02-KA220-ADU-000085744



**JOINT PARTNER REPORT ON SELECTED ASPECTS OF ADULT EDUCATION IN ITALY,
ROMANIA AND POLAND AS PART OF THE INNOVATIVE TECHNOLOGIES OF
RESPONSIBLE AUTOMATION PROJECT**



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Introduction

The presented report collects the results of the work of 3 partner organisations, i.e. Problem Solver from Italy, SC Recdate from Romania and the CRAS Association - Centre for the Development of Social Activity from Poland. These partners analysed selected aspects of adult education in their countries, i.e.: the area of legal conditions, ordinances and guidelines on adult education; provisions and guidelines on certification of competences; ordinances and directives on the digitisation of skills and opportunities for synergies between ICT and adult education. The information collected and the conclusions are presented in four chapters, taking into account the specificities of each partner country.

1. Legal conditions, ordinances and guidelines for adult education in Italy, Romania and Poland.

This chapter will examine information on the state of adult education and the legal basis for adult education in the three partner countries, i.e. Italy, Romania and Poland.

a) Adult education – a European approach

Adult education, in line with the EU approach, includes a set of formal and informal learning activities, both general and professional, undertaken by adults after completion of initial education and training.

Educational interventions targeted at the adult population of citizens have a variety of objectives, including:

- continuing education (*lifelong learning*);
- the possibility of restoring rights for people who did not have the possibility to complete a study program at a given time;
- teaching basic knowledge that is useful for entering the world of work;
- updating for professional retraining;
- other forms of non-formal education.

Adult education consists of a set of formal educational opportunities (promoted by school and vocational training) as well as non-formal (cultural, social, health or social initiatives related to various aspects of social life), intended for adult citizens. It is intended to involve adults regardless of age and employment status. These actions aim to guarantee the right to lifelong learning, while promoting the full enjoyment of citizens' rights.

Adult education is a concept of continuous learning, the aim of which goes beyond the mere acquisition of knowledge and includes a broader perspective, the task of which is to create a participatory, active and constructive civil society. The premise of this concept is that even those who have already gained qualifications in school and/or university need continuous updating to keep up with the ever-changing needs and challenges of the modern world. Learning, acquiring new skills, broadening horizons and the social and relational development of a person are becoming increasingly important in the context of dynamic economic, technological, organisational, IT and ecological changes. The modern economy is based on knowledge, and since the dynamics of change is very high, it is necessary for the human mind to constantly develop and explore new areas.

b) Historical traditions of adult education in Italy, Romania and Poland

• Italy



An analysis of the Italian tradition of adult education has shown that this idea is relatively young in Italy. Its origins date back to the post-war period, i.e. the 1940s. The development of adult education is divided into three phases:

- The first of these, which began just after World War II, was a response to social problems, which included above all the very high percentage of population being illiterate or uneducated due to poverty, as well as the widespread devaluation of education and early employment. The answer to these challenges was, above all, mass teaching of reading and writing and accelerated courses aimed at obtaining basic qualifications. Then came the so-called Folk Schools, founded in the late 1940s and operating until the early 1980s, whose lessons were carried out in rural environments. According to some researchers, the creation of folk schools is considered to be the birth of the idea of adult education. The main feature of this phase was the so-called catching-up in the field of education, in particular the fight against illiteracy.
- The second phase focused on perceiving the right to education as an opportunity for emancipation and socio-cultural development. During this period, evening and afternoon schools were established to restore compulsory school education. In the early 1970s the Ministry of National Education established experimental state lower secondary school courses for workers, known as 150 hours. In parallel with the lower secondary school courses, reading and writing courses were launched, also lasting one year and ending with an elementary license exam. In this phase, the principle of the permanent right to education was confirmed.
- The third phase, which has been developing since the 1990s, is the birth of initiatives for the training of the adult population and the acceptance of an innovative range of continuing education. Evening courses for adults as well as Permanent Territorial Centres (CTP) were established. The latter are the headquarters of adult education services, whose task is to organise literacy courses for obtaining a lower secondary school certificate for Italians or foreigners, art and language workshops and general culture courses, where the teaching is aimed at promoting integration and/or professional and socio-cultural reintegration, enabling relationships and functioning in the community.

• Romania

The beginnings of the Romanian traditions of adult education date back to the 1920s and 30s. Since then, the concept of *social pedagogy* has been developed and implemented in rural areas of Romania. At that time, social pedagogy was addressed to various categories of people, including rural residents, disadvantaged people, women and young people. In Romania there was a need for educational activities outside the formal education system. Romania's transition from a planned economy to a market economy, along with the country's integration with the European Union, has imposed new demands on society, such as mastering new skills, which will prepare it to effectively cope with the rapidly changing environment and the pressure of globalisation. Ensuring that the population acquire knowledge, skills and competences is considered to be a duty of the Romanian education system, which has been subject to continuous structural reforms since the fall of communism in 1989. The reforms of the education system in Romania were aimed at incorporating the concept of lifelong learning into education policy, especially after the country joined the European Union. Prior to 2005, legislative measures were taken to create a lifelong learning system in Romania aimed at developing and regulating, in particular, *continuing vocational training for adults*. After



2005, comprehensive steps were taken to develop and disseminate adult education, in line with the orientations and objectives set by the EU

- **Poland**

Polish traditions of adult education date back to the 16th century, when a thesis on education for the first time contained the sentence that “human learning lasts a lifetime”. This idea guided successive generations of Polish educational organisers and reformers, who created the education system (the institutional and legal framework of which was fully established in the 18th century). Educational solutions addressed to adults in the 19th and early 20th centuries, i.e. during a time when the independent Polish state did not exist, played a particularly important role. Various bottom-up educational initiatives, such as flying universities, public readings, courses, folk universities, interest circles, as well as printed tutorials or thematic magazines, gave opportunities for development and acquiring knowledge (also including emerging from illiteracy) especially to women, rural residents, workers and craftsmen, and people with so-called low educational and cultural status (i.e. social groups nowadays referred to as *disadvantaged*). From the 2nd half of the twentieth century, Polish society was characterised by a high degree of homogeneity, and universal and free access to education for children and young people, implemented in the form of compulsory schooling, meant that there was practically no such thing as illiteracy or lack of professional qualifications. For this reason, the contemporary version of Polish adult education, which has been developing dynamically since Poland’s accession to the EU, is focused, among others, on personal development, acquisition/improvement/development of professional qualifications, digital or language competences, passions and hobbies, as well as on obtaining the skills necessary to face the challenges of contemporary times in the dynamically changing world.

c) Legislative solutions for adult education in Italy, Romania and Poland

Adult education regulations in all 3 countries are based on European Union recommendations documented in resolutions and directives, which include:

- *Resolution of 20 November 2011 on the renewed Agenda for Adult Learning (EALL)*, which has taken steps to recognise this area as a key part of lifelong learning along with numerous initiatives to this end,
- Recommendations of the Council “*Upskilling Pathways*” of 2016 on upskilling pathways, which are considered the most important piece of legislation recently issued by the European Union in the field of adult learning policy,
- The *Resolution of 17 December 2021* defining a new approach to adult education and training through a new European Agenda for Adult Learning 2021-2030 (NEAALL).

In each of the three countries covered by the report, there are also national legislative solutions concerning the sphere of adult education.

- **Italy**

- The agreement signed on March 2, 2000 at the Conference of United States-Regions, the Italian system was adapted to the directives of the European Union,
- Act No. 92 of 28 June 2012 “Provisions on labour market reform with a view to growth”, also known as *the Fornero Act*, in Article 4(51), which defines and regulates the basic principles of lifelong learning: ‘According to the European Union, *lifelong learning means all actions taken by people in a formal and*



informal way, at different stages of life, to improve knowledge, skills and competences, from personal, civic, social and professional perspectives...’,

- Decree of the President of the Republic No. 263 of 29 October 2012 concerning the reform of the adult education and training system in Italy,
- The MIUR Ordinance of 2015 providing guidance on the application of the reform and the transition to the new regime (Inter-ministerial Ordinance No 26 of 12 March 2015),
- The implementation of the *European Agenda for Adult Learning 2012-2014* project, approved by the European Commission, aims to raise awareness of lifelong learning among policy makers at levels of territory, public and private operators in the field of education and training, social partners, companies, third sector operators.

• Romania

Documents prior to EU accession:

- *Government Ordinance No 102/1998 on the organisation and functioning of continuing education in educational establishments,*
- *Law No. 132/1999 on the establishment, organisation and operation of the National Council for Adult Education,*
- *Government Ordinance No 129/2000 on vocational training for adults, as amended by Ordinance No 76/2004*
- *The Act on equal opportunities for Women and Men (Act 202/2002) stresses the equal right of both sexes to participate in training programs and to receive professional advice and guidance.*
- *The Labour Code (Act 53/2003) guarantees access to training for adults, whether employees or job seekers (as defined in Act 76/2002),*
- *Law No. 279/2005 on professional training in the workplace,*
- *Methodology for the authorisation of adult vocational training centres,*
- *Methodology of certification of adult vocational training,*
- *Qualifications frameworks for which targeted programs with certificates of informal and non-formal education can be organised.*

Documents from the period after accession to the EU:

- *The National Education Act 1/2011* defines the general regulatory and integration framework for lifelong learning. This Act uses the term “lifelong learning” for the first time. Article 328 states that “Lifelong learning is all educational activities undertaken by each person throughout life in formal, non-formal and informal contexts, aimed at acquiring and developing skills from a range of perspectives: personal, civic, social and professional”,
- “Strategy for continuing vocational training in the short and medium term 2005-2010”, one of the programming documents that laid the foundation for the system of lifelong learning in the country.
- “Integrated human resource development strategy in the perspective of lifelong learning 2009-2020”.

• Poland

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In Poland there is no one universally accepted definition of adult *education/learning*. In the Polish conditions, institutional solutions concerning the sphere of adult education are at the stage of development. Documents currently in force:

- *The Education System Act (Journal of Laws of 2004, No. 256, item 2572 as amended)*, which includes a definition of so-called continuing education, concerning persons who "have fulfilled their schooling obligation and are studying in continuing education, practical training, vocational training and development centres or attending schools for adults",
- *"The perspective of lifelong learning" – Annex to Resolution No. 160/2013 of the Council of Ministers of 10 September 2013)*,
- *Strategy paper – "Integrated Skills Strategy 2030"*, indicating the areas of priority interventions, i.e.:
 - ✓ raising the level of key skills in children, young people and adults;
 - ✓ developing and disseminating a culture of learning geared to active and continuous skills development;
 - ✓ increasing the participation of employers in development and improving the use of skills;
 - ✓ building an effective system for diagnosing and communicating the current state and needs of skills;
 - ✓ developing effective and sustainable mechanisms for inter-ministerial and cross-sectoral cooperation and coordination in the field of skills development;
 - ✓ equal opportunities in access to development and the ability to use skills and identifying the main areas of skills necessary for a modern society in line with the directions set by the EU, i.e.:
 - ✓ basic skills:
 - understanding and creating information,
 - multilingualism,
 - mathematical,
 - in the field of natural sciences, technology and engineering,
 - ✓ transversal skills:
 - digital,
 - personal, social and learning,
 - civil,
 - in the field of entrepreneurship,
 - in the field of cultural awareness and expression,
 - in the field of critical thinking and comprehensive problem-solving,
 - in the field of teamwork,
 - ability to adapt to new conditions,
 - leadership,
 - related to multiculturalism,
 - related to creativity and innovation.

d) The contemporary offer of adult education in Italy, Romania and Poland

Lifelong learning aims to ensure the social and professional inclusion of individuals, regardless of gender or social background. Continuing education allows for the development of professional skills understood as knowledge that can be immediately used in work or organisational contexts and in general life situations.

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- **Italy**

The main actors involved in the adult education system in Italy: the school system; regional vocational training system; employment services system; civic networks linked to educational initiatives; businesses; cultural and voluntary associations; universities and the entire infrastructure used for cultural activities (museums, libraries, etc.).

The educational offer for adults in Italy is based on two pillars: CPIA (Territorial centres for adult education) and secondary schools offering courses for adults (formerly called evening schools) belonging to MIUR (Ministry of Education). Secondary schools offering courses for adults are part of the CPIA and allow adults to obtain a diploma or professional qualification.

The educational paths organised by the CPIA are aimed at adults and young people (including immigrants) who are at least sixteen years of age, even if they do not have Italian citizenship. These actions are aimed at people who intend to change their disadvantaged situation, improve their conditions for linguistic, cultural, professional and social integration in the environment, who have not completed compulsory education or who do not have a matriculation qualification of the first level of education, or who intend to obtain a final qualification of the second level of education (former evening courses). The educational offer addressed to the adult population takes into account both the types of training requirements reported (needs) and responses from public and/or private training agencies. The educational offer divides training activities into three types: formal, non-formal, informal.

- 1) Formal activities cover all activities aimed at obtaining a diploma in the education channels of the training system. They range from compensatory measures for those who have not benefited from initial basic training (basic literacy, lower secondary school certificate, diploma) to training courses aimed at gaining qualifications that can be used in the world of work (specialisation courses and /or retraining),
- 2) Non-formal activities are all those activities which, although not giving qualifications, are aimed at broadening knowledge in a specific field of knowledge or work, and thus responding to specific training needs (language courses, computer courses, vocational courses, etc.).
- 3) Informal activities cover all those activities which, although involving change, are not deliberately targeted at achieving specific training objectives and therefore fall outside these categories.

The reform of the Italian adult education system was based on an innovative approach, which represents even a revolution in teaching. Public institutions have moved from qualification-based teaching to teaching geared toward individual skills development. The new teaching begins with the question: *"who is a lifelong learner?"*. The desire to return to education, within the framework of the public education system and in the possibilities of informal education offered in one's own territory, must necessarily be based on the person's needs. They can vary widely: the need for proof of skills for residence and citizenship purposes, lack of work, difficulty completing studies, return after deprivation of liberty, exit from the labour market, etc. Adult learners differ in their background, level of output, knowledge and know-how. Therefore, new teaching is based on the principle of placing the needs and aspirations of the learner at the heart of the learning process: on the one hand, their cultural and personal heritage (transversal competences, language competences, skills and competences acquired through non-formal education and informal training), and on



the other hand, their qualifications. Taking into account the main needs of adults, they are divided into 3 groups, to which the various types of educational offers are addressed:

- “disadvantaged” adults toward whom compensatory measures are directed. This is an offer aimed at adults who have not benefited from basic education or who lack sufficient cultural and material resources to face the complexity of relationships and social life as well as current economic needs,
- employees of companies and/or new recruits to whom the training activities of companies are addressed. This model is developing in response to the rapid ageing of know-how and new challenges in the world of work.

• Romania

Under Romanian conditions, vocational training for adults, supplemented by educational or university degrees having national recognition and/or certificates of professional competence, is an activity of general interest within the national system of vocational education and training. Prior to Romania's accession to the EU, several Romanian legislative centres aimed to create a lifelong learning system that develops and regulates the field of *continuing vocational training for adults*. The reforms of the education system in Romania were aimed at incorporating the concept of lifelong learning into education policy, especially after the country joined the European Union.

Currently, in Romania, the Ministry of Education, Research, Youth and Sport supports the organisation of “Second chance” educational programs. This program is designed to correct the phenomenon of early school leaving of children, youth and adults who left school before completing compulsory schooling. Participation in this program is the only way for young people or adults who have left school early to obtain a nationally accepted certificate.

The Romanian National Employment Agency (ANOFM) offers free vocational training for adults. Most of these courses require basic reading skills and basic mathematical skills, as well as a certificate confirming that participants have attended school and already possess these skills.

Several non-governmental organisations also offer paths for adults, during which they teach reading, writing and mathematics skills. Unfortunately, in most cases, certificates that students obtain from these courses are not accepted by other national institutions.

Free vocational training is also available from various NGOs. However, these educational projects are only available in some areas.

In Romania, according to the Education Act No. 1/2011, formal education is provided by the following institutions or organisations:

- educational and training activities of ministries or local government public authorities,
- public and private, certified or accredited, educational and training institutions,
- government or non-governmental organisations offering programs permitted by law,
- employers who offer their own training programs to employees (e.g. work placements).

Non-formal adult education can be carried out by various organisations such as workplaces, cultural institutions such as museums, theatres, cultural centres, libraries, documentation centres, cinemas, professional and cultural associations, trade unions, NGOs.

An example of active local government activity is the Municipal Lifelong Learning Centres. Both children and adults can participate in the activities they offer, but their main objective is to encourage adults aged 25 to 64 to participate in lifelong learning activities.



Adult learning programs are publicly funded and focus on the following target groups:

- students and adults who have not completed compulsory education,
- students who ended their studies before obtaining a professional qualification and do not participate in any vocational education or training,
- non-vocational education or having higher education or qualifications in sectors not relevant to the labour market,
- people with special educational needs,
- minors and adults returning after working abroad;
- workers and adults living in economically and socially disadvantaged communities,
- workers over 40 years of age with low level of education, urban and rural residents, low-skilled or unskilled.

- **Poland**

In comparison with the other countries discussed, Poland represents a slightly different picture regarding adult education. In Poland, there is practically no problem of illiteracy (according to data from 2003, the percentage of people unable to read and write was 0.2%). Early school leaving and start of work is also a marginal phenomenon. Compulsory education, to which children and young people are subject up to the age of 18, and whose roots date back to 1919, is enforced, so that at least basic education (lower secondary school education during the period of existence of this level of education) is held by almost the whole society. The acquisition of professional qualifications takes place in an extensive system of vocational, secondary and higher education. In Polish conditions, having a diploma from a vocational or secondary school is taken for granted. People who for some reason did not have secondary education, if they want to take up employment, are encouraged or even obliged by employers to undertake education, e.g. in evening schools or schools for adults. Ethnically, Poland is a country with a high level of uniformity. The number of immigrants living in Poland in 2020 was estimated at about 0.5 million, which constituted just over 1% of the population. Therefore, the programs addressed to these people also constituted a small percentage of the educational and integration activities carried out.

These factors meant that the area of adult education, as an integration and inclusive or compensatory activity, was practically non-functional in Poland. In the absence of clear needs for centralisation, adult education has remained in the background when it comes to legislative solutions.

The area of adult education is not strictly covered by the ordinances and regulations of government agencies, e.g. the Ministry of Education. Therefore, its organisation is not the responsibility of government or local authorities. The adult education sector operates entirely on free-market principles. This means that the educational and training offer is a direct response to the needs raised by the market – both by employers, business surrounding institutions, organisations operating locally and regionally, as well as by the interested parties themselves. Entities providing education and training services come from both the public and private spheres and they are:

- public and private schools for adults, industry second-level schools, post-secondary schools providing vocational training,
- public and private continuing education establishments,
- vocational training centres,
- universities,



- other entities conducting educational activities,
- employers, employees
- civil organisations,
- other entities cooperating with each other and remaining entities.

On the basis of data collected by *the network of information exchange and analysis on education systems in Europe – Eurydice*, it was found that the area of adult education and training is the most diverse area of education in Poland. And this is true in many respects. That is, both because of the recipients, their age and socio-professional status, as well as the forms of education, the way in which learning outcomes are validated, especially non-formal and informal, as well as the institutions that carry out educational activities.

Adult education is based on a non-linear model, that is, it is a process that is *continuous and unlimited in time*. At every stage of life, a person can participate many times in various forms - institutional, non-institutional and informal.

Changing the approach to adult education and its perception from the central level is a very new process, which has been taking place for about a decade. This is mainly influenced by the EU recommendation and the dynamic changes taking place in the modern world, which even force the need for continuous and constant learning. This is reflected in the following entries in the document "The lifelong learning perspective". Annex to resolution No 160/2013 of the Council of Ministers of 10 September 2013: "rapid economic development, technical and technological progress on the one hand, and the extension of life expectancy on the other, and the need to increase mobility, make it necessary to refocus the passive career model and fundamentally change the approach to the need for learning from the first to the last years of life".

Forms of education for adults available in Poland and interest in them:

– Formal education

This includes education in schools (public and private, continuing education, industry, etc. and universities). The highest activity in formal education (according to data from 2016) was recorded among the younger age groups – 67.8% of people aged 18-24 and 16.3% of people aged 25-29. The participation of people over 50 years of age in formal education was insignificant – 0.5%. The fields in which most adults studied were: technology, industry, construction (18.3%) and business, administration and law (17.5%). Among those studying at the higher level, 12.9% were being educated in postgraduate studies, where the students most often chose teacher education and pedagogy. 2.9% of people who have a higher level of education had decided to study for a PhD.

– Non-formal education

According to data from 2017, in the group of people aged 18-69, 21.4% declared participation in some form of non-formal education. Respondents aged 25 to 44 showed the greatest educational activity, where more than a quarter of them reported participation in education. Various forms of knowledge or skills were particularly popular in people aged 35 to 39 years (29.6% of them had participated in non-formal education). Among the youngest respondents (at the age of 18-24 years), the level of participation in this form of education was 22.3%. There is a trend toward a systematic decrease in educational activity with the age of respondents – from 22.6% of participants at the age of 45-49 to about 5% at the age of 65-69 years. The results of the study on adult education also allowed us to analyse the level of participation in the education of working people, taking into account their profession. The most numerous general professional group taking part in non-formal



education were various kinds of specialists and they also most often declared participation in this form of education (54.8%). However, farmers, gardeners, foresters and fishermen (10.4%) and workers in simple jobs (12.2%) were being educated to a lesser extent.

– Informal education

According to the Adult education study, in 2016, 8.5 million inhabitants of Poland aged 18-69 were participating in informal education, which constituted 31.4% of the total population. Among people participating in various forms of informal education, the activity of women was slightly higher than men. Over the period considered, 4.4 million women (51.5% of the total self-education population aged 18-69) and 4.1 million men (48.5%) were being educated in this form. A feature that significantly differentiates the group of self-educated people was the place of residence. The proportion of people aged 18-69 residing in towns and cities and participating in informal education was 66.4%, and the population of people being self-educated in the countryside accounted for 33.6% of the total number of people participating in informal education.

The highest educational activity in the informal system was shown by young people. Among those aged 18-24 who participated in the *Adult education* study, 42.5% had participated in various types of informal education in 2016. The older the age group, the smaller the percentage of participants in informal education. It is worth noting that in the age range of 25-54 years self-education was used by every third person, in the group of people aged 60-64 years the participants of education in the informal system was almost every fourth respondent, and among the respondents aged 65-69 years it was every fifth person. This trend was recorded among both women and men. A greater proportion of inhabitants of cities than villages participating in this form of education was observed in each age group.

People declaring their participation in informal education were acquiring knowledge in a variety of ways.

The study highlighted the following groups of methods of learning:

- with the help of family members, friends, co-workers,
- using books, industry magazines and other printed materials,
- using computer programs, Internet,
- using TV or radio,
- tours to museums, historical, industrial or natural sites,
- visits to educational centres (including libraries).

For the vast majority of respondents, regardless of gender and place of residence, the most frequently chosen method of self-education was the use of computer programs or the Internet (84.5%). The second most popular source of knowledge was books, industry magazines and other printed materials, which were being used by 80.1% of learners. Women (82.4%) preferred this method to men (77.6%) and city dwellers (81.4%) rather than countryside (77.5%).

e) The main problems and challenges facing adult education in Italy, Romania and Poland

• Italy

According to Eurostat data from 2020, the Education and Training Monitor for 2020 showed a low level of participation of adults in education in Italy (1 out of 10), with an EU average of only 10.8% of adults aged 25-64 who had participated in education four weeks prior to the survey. This percentage was further reduced (9.2%) due to the Covid-19 pandemic.



The main factors affecting the low percentage of adults participating in education are:

- 1) insufficient financial support for those involved in training. For example, the cost of courses or the loss of income due to a period of absence from work for training, or even the scarce resources to overcome obstacles that make it impossible to find time for training,
- 2) insufficient motivation to participate in training. For example, lack of awareness of training opportunities or uncertainty as to whether employers recognise acquired competences.

So far, according to Eurostat data, the proportion of adults without upper secondary education is high and participation in adult learning is low. For example, in 2018, 38.3% of Italian adults aged 25-64 had lower secondary education, compared to the EU average of 21.9%, and only 8.1% of adults aged 25-64 had a recent learning experience compared to the EU average of 11.1% (BAEL, 2018). The low participation rate of low-skilled adults in training (2%) is concerning given the gap between the number of low-skilled jobs (2.5 million in 2017) and the number of low-skilled adults (more than 12 million).

According to the latest Istat report, territorial disparities in regional education levels remain large. In fact, it turns out that the population living in the south is less educated than the central-northern population. In the southern regions, 38.5% of adults have a high school diploma, and only 16.2% have higher education. In the north and in the centre about 45% have higher education. Territorial differences in education levels are gender-independent, although they are more pronounced for women.

- **Romania**

The ageing of the population and emigration have led to a decline in the working-age population of Romania, which is an enormous challenge for maintaining long-term economic growth. In 1990-2011 the total population of Romania fell significantly, from 23.2 million to around 21.3 million. Over the same period, the number of employees decreased from 10.8 million to around 9.1 million. It is estimated that by 2050, the population over the age of 65 will make up almost 30% of the total population against the current 15%, and the working age population will have decreased by more than 30% compared to 2010, three times faster than the Western European average. In addition, it is estimated that more than two million working people (25% of the workforce) will have emigrated in search of better employment opportunities in Europe or elsewhere in the world. Recent forecasts show that the working population in Romania will continue to decline sharply in the coming decades.

Demographic and migration factors lead to strong motivation to develop lifelong learning in Romania. The participation rate in vocational education and training in Romania is unevenly distributed across different areas. The participation rate in formal education decreases with age, from 8.5% for people aged 25-34 to 0.1% for people aged 55-64. The participation rate in non-formal education follows the same trend as in formal education, i.e. it is higher for adults aged 25-34 (6.7%) than for people aged 55-64 (2.4%). Discrepancies were found on the basis of residence and gender, with lower rates of participation in vocational training in rural areas than in cities and among men compared to women. As regards disadvantaged groups, the regional Roma survey (UNDP, World Bank, EC, 2011) shows that the participation of women from non-Roma communities in adult education and apprenticeships is five times higher than that of women in Roma communities.

The information gap regarding educational opportunities and needs is also an important problem. Insufficient investment by companies and employees in training may result from a lack of information reflecting gaps in market information. For example, people may not have information about the availability



and quality of training centres. Moreover, without recognition or certification of skills acquired through non-formal learning, employees cannot demonstrate productivity gains and therefore prefer not to invest in training. Data from a 2014 World Bank study on Romanian workers in continuing vocational training show that more than 40% of workers with low levels of education and skills do not seek information on training activities. This applies to employees aged 18-24, 43% of whom do not seek this type of information and over 40 years of age (45% of whom do not seek information about training), compared with only 20% who have obtained a matriculation certificate or school certificate. Similarly, the lack of managerial and entrepreneurial skills of managers in small and medium-sized enterprises can contribute to ineffective decisions regarding employee training. In the “Analysis of Vocational Education and Training needs” in Romania (Ministry of National Education, 2013), it was underlined that the low weight that adults place on vocational training and thus on training bodies is one of the most important barriers to participation and support for lifelong learning.

• Poland

The lack of systematisation and precise regulation of the area of adult education in Poland, and the inconsistency in its definition, poses difficulties in collecting figures on the number of adult learners, and thus in a reliable statistical description of the phenomenon. According to data presented by EUROSTAT for the last 10 years, the percentage of adult Poles aged 25-64 participating in education and training did not exceed 6%. The highest value, 5.7% was achieved in 2018. These results are rather unsatisfactory against the background of the EU average, which is around 10%. However, a slightly different picture of adult education than from EUROSTAT data emerges from the conclusions of the cyclical survey of the Polish Central Statistical Office, conducted according to a different methodology, and the results of which are presented in the report prepared in 2016 titled “Adult learning”, which shows that:

- among Poles aged 18-69, 54.1% were not participating in any form of self-education (among rural inhabitants this percentage was 60%). It was mostly professionally active people who were not receiving education - the lack of need for (further) education/training was indicated as a reason,
- the percentage of adults participating in any form of education was 45.9%. Of this about 43% of Poles aged over 25 were taking part in any form of education in 2016, with towns and cities accounting for almost 50%, and villages accounting for about 36%. The proportion of adults who are participating in any form of education was still falling sharply with age – around half of the 30-34-year-olds, around 41% of the 45-49-year-olds and only 34% of the 55-59-year-olds. It was mainly working people who were raising their qualifications (52%). The unemployed (30%) were the least likely to be receiving education,
- self-education or informal learning was undertaken by 31.4% of Poles, i.e. about 8.5 million inhabitants of Poland. Self-education was being undertaken mainly by young and better educated people. This was more often the case for women and city dwellers. Among the most popular methods of self-education were the use of Internet/computer programs (84.5% of respondents; among people aged 18-24 this percentage was almost 95%, it was also significantly higher among people with higher education), the use of books, industry magazines (80% - women and city dwellers used this method more often; respondents with higher education reached for books – 87% far more often than those with vocational education – 66%) and with the help of family members, friends and co-workers (47.2%),
- the percentage of adult Poles participating in formal education decreased slightly – from 13.6% in 2011 to 11.3% in 2016. Formal education was mainly for the youngest adults – in schools or universities,



almost 68% of people aged 18-24 and 16.3% of people aged 25-29 were studying. Formal education was most often associated with the continuation of higher education or the undertaking of postgraduate studies (1/4 of people with higher education),

– in the case of *non-formal education*, there was a slight increase in the level of participation – from 20.9% in 2011 to 21.4% in 2016. The highest activity in the field of non-formal education was shown by people aged 25-44 – over 25% of respondents indicated such forms of improvement of qualifications. The largest group participating in non-formal education were people aged 35-39 (almost 30%). Non-formal education was undertaken a little more often by men, residents of cities, people with higher education and, above all, people working in specialist positions. At the same time, according to the survey, non-formal education was most often associated with the work performed (77.4%) and was aimed at improving the quality of work performed (the goal indicated by 56.6% of respondents). The respondents most often indicated better performance of their duties as the main benefit of the efforts undertaken (51.3%). Therefore, a particularly high level of participation has been achieved by the respondents representing professions that, due to formal requirements or rapid technological progress, especially require continuous improvement of qualifications: teachers (almost 44% of people with pedagogical education were receiving education in this form), representatives of medical and IT professions (for both groups – about 40%). Almost half (49%) of the participants in formal education benefited from its financing by their employer, and only slightly over 1/5 had to finance their training independently. Out of the participants in non-formal education, 45% received a document required by their employer, professional organisation or legal provisions as confirmation of their qualifications, but almost 1/3 did not receive any confirmation of their skills.

In the summary of the results of the 2016 edition survey, it was noted that employed people were receiving education in various forms definitely more frequently than the unemployed and professionally inactive. Working people most frequently participated in informal and non-formal education, while the professionally inactive took part in formal education. Among the professionally inactive people in the age group 18-69 years, as many as 20.8% were participating in formal education. This was due to the fact that young people are very often considered professionally inactive due to their continuation of education at school or at university. In 2016 the unemployed were less likely to participate in education than professionally inactive people and this phenomenon was characteristic of all forms of education.

The main problems of adult education in Poland are related to the lack of effective and coordinated systemic solutions in the area of adult education. Lifelong Learning activities are much more likely to be implemented by individual companies for their employees (including large transnational companies) or the NGO sector through various social and local initiatives, for the benefit of selected target groups. Such dispersion results in ineffective preparation for the challenges posed by the present day to the Polish society, including dynamic economic and climate changes, digitisation and technology of all spheres of life, and the ageing of the society.

The report titled “OECD Skills Strategy: Poland”, developed in cooperation with the Polish government, indicated the main areas of improvement in adult education in Poland, which include:

- 1) Improvement of the responsiveness of the education system to the needs of the labour market.
- 2) Promotion of greater participation in all forms of adult learning.
- 3) Strengthening of the use of skills in Polish enterprises.



4) Strengthening of the management of the skills system in Poland.

f) Summary

Adult education in the three selected countries, i.e. Italy, Romania and Poland, has varied history. In both Italy and Romania, the emergence and development of this area of socio-economic life dates back to the 20th century. Another similarity of these countries is the significant emphasis placed on combating illiteracy and compensating for skills gaps over the years. In both countries, adult learning has gone through different phases and is now firmly rooted in legislation and the structure of education. In Poland, the situation is slightly different. It is the country with the longest tradition in adult education, of several hundred years, and at the same time this field is not codified or clearly separated in the educational system. Educational activities are undertaken on the basis of a free-market mechanism and respond to the needs of both the labour market and the changing socio-economic situation.

In all 3 countries, the level of participation of adults in education is below the target level. All of the countries are taking action to implement EU policies and recommendations in this area. Citizens of these countries have the opportunity to undertake education in the formal, non-formal and informal systems. All of the countries face challenges in the dissemination of the idea of Lifelong Learning in society and the development of an educational system that will allow the development of social capital, thus increasing economic attractiveness and building a knowledge-based society.

The right to education, even in adulthood, emphasises the awareness that humanity can survive and face emerging challenges. Those who can exercise this right can be guaranteed full participation in society as citizens. Lifelong learning offers more economic opportunities, it is essential for overall well-being, and also for personal development.



2. Provisions and guidelines on certification of competences in Italy, Romania and Poland

The chapter will present the main regulations concerning the certification of adult competences in the three partner countries, i.e. Italy, Romania and Poland.

a) Key competences – a European approach

For a modern person it is no longer enough to study once for qualifications or competences in a specific area. Sustainable development and multi-area synergy are currently the main features desired not only by employees, but by all European citizens. Together with these processes, it is necessary to create and develop a legislative framework that organises the areas of acquisition and certification of qualifications and competences, so that they are universally recognised. The growth of individual endowment of skills throughout life should not be understood only in relation to specialist or advanced skills, but also as an urgent need to develop so-called basic or soft skills in the widest possible range of people. Unfortunately, European statistics show that young people of working age currently have a low level of language and numeracy skills, whereas older adults lack digital and computer skills.

The subject of key competences has been noticed and regulated by the bodies of the European Union. According to the Recommendation of the European Council of 22 May 2018, key competences are “those that *everyone needs for self-fulfilment and personal development, employability, social inclusion, a sustainable lifestyle, a fruitful life in peaceful societies, healthy life management and active citizenship. They develop from a lifelong learning perspective, from early childhood to adult life, through formal, non-formal and informal learning in all environments, including family, school, workplace, neighbourhood and other communities.*” 8 main areas of the key competences were identified, i.e.:

- 1) competence in understanding and creating information, i.e. the ability to identify, understand, express, create and interpret concepts, feelings, facts and opinions, both orally and in writing; using visual, audio and digital materials based on different disciplines and contexts. It includes the ability to communicate effectively and establish relationships with others in an appropriate and creative way. Its development is the basis for further learning and further linguistic interaction. These competences include critical thinking and the ability to assess and use information,
- 2) competence in multilingualism - this defines the ability to use different languages appropriately and effectively for communication, is based on the ability to understand, express and interpret concepts, thoughts, feelings, facts and opinions both in speech and in writing – listening, oral expression, understanding written text and writing expression – within the relevant range of social and cultural contexts, also including the historical dimension and intercultural competence. These competences are particularly important in the context of European integration because, in line with the EU approach: “*Being a European citizen means preserving one’s own cultural identity, but also being able to relate and integrate with other cultures. Language learning is a priority here, as the process of European integration cannot be separated from the acquisition of good language skills.*” An objective to improve language learning was set: by 2025, all young Europeans who graduate from secondary school must have a good command of two other languages in addition to their mother tongue (or mother tongues),
- 3) mathematical competence and competence in life sciences, technology and engineering. Mathematical competence is understood as the ability to develop and apply thinking and understanding of mathematics to solve a range of problems in everyday situations. They rely on the



skills and willingness to use mathematical models of thinking and presentation: formulas, models, constructions, charts, diagrams. Competence in natural sciences, technology and engineering is the application of such knowledge and methodology in response to the desires or needs of human beings. They relate to the ability to explain the world around us using a wealth of knowledge and methodology, including observations and experiments, to identify problems and draw conclusions based on empirical facts and the willingness to do so. Competences in science, technology and engineering allow us to understand the changes brought about by human activity and make people aware of the individual responsibility that each citizen bears toward society and the environment,

- 4) digital competences are defined as the ability to critically and responsibly use digital technologies and to be interested in them for the purposes of learning, work and participation in society. These include the ability to use information and data, communicate and collaborate, media literacy, digital content creation, security, intellectual property issues, problem solving and critical thinking,
- 5) personal, social and learning skills competences are the ability to self-reflect, effectively manage time and information, work constructively with others, maintain resilience, and manage one's own learning and career. They set a new approach to learning, i.e. thinking in terms of lifelong learning,
- 6) civic competences, which relate to the ability to act as responsible citizens and to fully participate in civic and social life, based on an understanding of social, economic, legal and political structures and concepts, as well as global evolution and sustainable development,
- 7) entrepreneurship competences refers to the ability to act on ideas and opportunities and turn them into value for others. They are based on creativity, critical thinking and problem-solving, initiative and perseverance, and are understood as the ability to collaborate to plan and manage projects that have cultural, social or financial value,
- 8) competences in cultural awareness and expression includes understanding and respecting the way in which ideas and meanings are creatively expressed and communicated in different cultures and within a range of arts and other cultural forms. It assumes a commitment to understand, develop, and express someone's ideas and sense of their own function or role in society in many ways and contexts. This competence extends the ability to communicate with people around, requires knowledge of local, national, regional, European and global cultures and forms of expression – including their languages, expressive heritage and traditions – and cultural products. In addition, competence in cultural awareness and expression is based on an understanding of how such expressions can influence each other and affect the ideas of individuals.

The acquisition and development of key competences is currently one of the most important areas of Community intervention. Our competences determine the social and economic development of individual societies and countries and shape the future.

b) Certification of competences for adults – national solutions

Certification is the process of confirming that a person has the declared competence. Competences can be acquired both during formal education, as well as non-formal and informal.



- **Italy – legal basis, certification bodies, certification stages, technological infrastructure for certification**

Legal basis

In Italy, the definition of competences contained in the *Ministerial Guidelines of 2015*, taken from the *European Qualifications Framework of 2006*, is in force, which introduces a tripartite division into: *knowledge, skills and competences* and defines competences as a critical integration of the first two, i.e.:

- knowledge: the result of assimilation and information through learning. Knowledge is a set of facts, principles, theories and practices related to a field of study or work. Knowledge is described as theoretical and/or practical,
- skills: indicate the ability to apply knowledge and know-how to perform tasks and solve problems; skills are defined as cognitive (using logical, intuitive and creative thinking) and practical (including manual skills and using methods, materials, tools),
- competence: means the proven ability to use knowledge, skills and personal, social and/or methodological abilities in work or study situations and in professional and/or personal development; Competence is described in terms of responsibility and autonomy.

To put it simply, competence is an ability that we can attribute to a person by observing how they apply it in practice.

The process of acquiring and confirming competences is associated with certification. Certification of competences is a system aimed at improving and recognising skills and knowledge acquired by a person during their work, training and life experience through a path of reconstruction and assessment of those experiences. It is a process addressed to any citizen who intends to demonstrate that they have acquired in their life a coherent learning experience with respect to a specific professional qualification among those provided at provincial level. The professional qualifications in each province are included in the "Provincial List of Qualifications for Education and Training and Professional Qualifications". A citizen can obtain information free of charge on the functioning of the services provided by each accredited entity.

The Italian skills certification system has been in place since 2012. The legal act that initiated its creation was Act 92/2012 on Labour Market Reform (the so-called Fornero Act) and its implementing ordinances of 2013. In January 2018, the National Qualifications Framework of 2015 entered into force, defining a common set of descriptors and identifying what kind of knowledge, skills and elements of autonomy/responsibility can be attributed to each level. To this was added the inter-departmental ordinance of 5 January 2021, which defines the *Guidelines* for the effective functioning of the system. Assessment of skills is an integral part of every educational path, including those offered by CPIA. The direct and fundamental relationship that links the CPIA to the general system of skills certification stems from the central role that the CPIA has been entrusted with in the 2015 guidelines in the field of lifelong learning, in accordance with article 4 of Act No. 92 of 2012: *"The CPIA, as the Territorial Service Network for the education system, responsible for the implementation of both educational activities for the adult population and R&D activities in the field of Adult Education, is the public reference entity for the creation of territorial lifelong learning networks, in accordance with article 4 of Act No. 92 of 28 June 2012. In fact, the strategies and priority actions of the territorial lifelong learning networks, in accordance with the deadline set out in article 4, para. 55 of Act 92/2012, find in the CPIA a public reference body capable of efficiently and effectively contributing to their implementation"*. (Decree of 12 March 2015).



The same reference is expressly included in the inter-departmental guidelines of 5 January 2021: *‘The national system for the certification of skills referred to in article 4(58) of Act No. 92 of 28 June 2012 and subsequent legislative decree No. 13 of 16 January 2013 is part of a wider national process for the right of the individual to lifelong learning, entered in para. 51 of the same article. In this context, the recognition and certification of the skills acquired by a person in formal, non-formal and informal contexts, together with the creation of the territorial networks referred to in paragraph 55 of the Act and the creation of a single information framework through the interoperability of existing central and territorial databases, are a decisive factor in encouraging and supporting a concrete increase in the participation of persons in a group’* (Decree of 5 January 2021).

The CPIA, as a central hub of the lifelong learning system, has a direct link with other education systems and the world of work. This relationship takes place precisely through the function of skills certification, as recalled, for example, in the MIUR circular No. 22381 of 31 October 2019: *“The CPIA, understood as an administrative unit and a didactic unit – taking into account the provisions of Legislative Ordinance No. 13 of 16 January 2013 – certifies the acquisition of skills acquired, including to promote guidance for continuing education and to prevent early school leaving, as well as to facilitate integration into the world of work. The certificate also aims to make the skills acquired by adults transparent in the perspective of lifelong learning, including in order to promote links between the pathways of Level 1 and Level 2 Adult Education and the linking of pathways of Adult Education with pathways of Vocational Education and Training* (MIUR Circular No 22381 of 31 October 2019).

Certification bodies

In Italy there are so-called "Territorial networks for lifelong learning" forming the basis of the lifelong learning system. They cover all services related to education, training and employment, related to growth strategies, access of young people to employment, social welfare reform, active ageing, active citizenship, including among immigrants. Networks thus represent institutional places dedicated to "adult care" where citizens can access integrated services. The actors contributing to the development of territorial lifelong learning networks are: universities, enterprises, chambers of commerce, industry, crafts and agriculture, as well as labour offices, social partners and local authorities.

Territorial networks for lifelong learning ensure:

- formal, non-formal and informal learning pathways;
- recognition of training points;
- certification of the knowledge acquired in each case;
- use of counselling services throughout life.

The public entity for the creation of territorial lifelong learning networks is CPIA, the Territorial Centre for Adult Education, as the Territorial Service Network of the Education System.

The CPIA, as the territorial service network divided into three levels, carries out the following activities:

- 1) educational courses for adults aimed at obtaining qualifications and certificates:

Courses for adults are organised in three types:

- a) the paths of first level education - divided into two didactic periods:

- the first allows for obtaining a final first level qualification;
- the second enables the obtaining of a certificate confirming the acquisition of basic skills related to compulsory education in the field of classes and general education, common to all professional institutes and technical institutes,



- b) second-level education pathways – enable the obtaining of a diploma of technical, professional or artistic education. They are divided into three didactic periods relating respectively to the first two years, the second two years and the fifth year of the relevant regulations of the technical, professional and artistic institutes,
- c) literacy and Italian Language Courses – they allow the obtaining of a qualification confirming the achievement of a level of knowledge of Italian not lower than the A2 level of the European Common Reference Framework for Languages, drawn up by the Council of Europe.
- 2) initiatives to broaden the training offer to integrate and enrich adult learning pathways and/or encourage linking with other types of education and training pathways. They are based on activities consistent with the objectives of the CPIA and taking into account the needs of the cultural, social and economic context of local realities. To this end, the CPIA promotes integrated education and training projects that require cooperation with other public and private training agencies, including through participation in regional, national or Community programs. The CPIA may:
- conclude agreements with universities, regions and public authorities;
 - conclude agreements with associations and natural persons;
 - participate in temporary associations with public and private agencies that work in synergy to implement specific training projects.
- 3) conduct research, experimentation and development activities in the field of adult education aimed at:
- developing the areas referred to in Art. 6 of Presidential Decree No. 275 of 1999: planning of training and evaluation studies; training and cultural and professional updating of school personnel; methodological and disciplinary innovations; didactic research on various values of information and communication technologies and their integration in training processes; didactic documentation and its dissemination in school; exchange of information, experiences and didactic materials; integration between different branches of the school system and, in consultation with the relevant institutional actors, between different education systems, including vocational education;
 - strengthening the role of the CPIA as a "service structure" by preparing - in accordance with the European objectives in this field - the following "systemic measures": identification of the training needs of a given territory; construction of profiles of adults defined on the basis of the needs of social and professional contexts; interpretation of the skills and knowledge needs of the adult population; reception and guidance; improvement of the quality and effectiveness of adult education;
 - preparing systemic activities aimed at promoting appropriate links between educational paths implemented by CPIA and paths run by educational institutions conducting second-level courses (defining the criteria and methods of joint management of functions assigned to educational institutions, Art. 14, para. 2 of the Decree of the President of the Republic of Poland 275/99); development of the POF CPIA, a joint project of the first and second level pathways;
 - implementing a lifelong learning system through actions aimed, within the scope of its competence, at implementing a national plan to guarantee the skills of the adult population, including with a view to developing lifelong learning networks.

Stages of certification



- 1) Admission and orientation – this is the initial phase of skill certification. It starts when a person enrolls for one of the training courses offered. Analysis, verification and, where possible, certification of prior skills is in fact part of the initial admission phase. The typical path of an adult joining the CPIA is divided into various phases and subphases, the main ones being *admission and orientation*, *the learning path proper* and *the closure phase*. An evaluation dimension is a constitutive part of each of these stages, even if they have different objectives and methods. At the end of the admission phase, the adult begins the path most appropriate for them. This path, like all training, contains many evaluation moments. The process of certification of competence during the initial admission and orientation phase is called “recognition of achievements”. This process is initiated at the request of the person concerned and conducted by the Commission to determine the Individual Formation Agreement. During this process, the needs of the adult are analysed, their personal history is reproduced, skills are verified, possible certification of these skills is carried out and an Individual Training Contract is established. From both a conceptual and practical point of view, the process of recognition of competences is divided into 3 phases: identification, assessment and attestation.
- 2) Identification – in accordance with the Ordinance of 12 March 2015, Identification aims to identify and highlight adult skills acquired through formal, non-formal and informal learning that can be attributed to one or more expected skills at the end of the learning path that is required by the adult at the time of registration. At this stage, the Commission, after obtaining an application for an entry, supports the adult "in the analysis and documentation of educational experiences" including by using tools to document personal and professional history. Each Commission defines organisational and operational methods which also take into account territorial considerations. The main objective of this first phase of the recognition process is to make skills transparent by describing them through a specific document, which usually takes the form of a personal booklet and includes in a standardised way experiences related to education, training, work and other experiences that can contribute to determining the skills that the given person may have. Alongside this document, a Europass CV and/or another type of European transparency tool can be filled in. The documents produced at this stage contribute to the creation of a personal Dossier, a file that documents the phases and results of the path taken within the CPIA.
- 3) Evaluation – in accordance with the Ordinance of 12 March 2015, Evaluation is a step to confirm that adults have acquired formal, non-formal and informal learning skills related to one or more of the competences expected at the end of the learning process in the period of the path requested by the adult at the time of registration. At this stage, the Commission, together with the adult, establishes the possession of skills already acquired by the adult for the purposes of subsequent certification. Therefore, the evaluation phase aims to determine the possession of skills that can be attributed to the expected results of the proposed learning period. Unlike the collecting and recording of relevant information carried out in Identification, the assessment must give the data collected a value and decide whether to consider it important or not, and then be able to officially certify it in the next step. In order to carry out the evaluation task in the best possible way, the Commission may decide to proceed differently depending on the type of evidence collected and its "weight". If the supporting evidence is considered sufficient, the Commission may decide to fully validate the relevant competences without subjecting the candidate to any tests. This solution is more common



for documents confirming formal competence – for example, where diplomas clearly linked to specific competences are available.

The analysis of evidence and the management of evidence is documented by the Commission in order to ensure fairness, transparency, collegiality and objectivity, as required by the guidelines. If successful, it goes to the next stage of attestation, otherwise the process stops there.

- 4) Certificate - in accordance with the Ordinance of 12 March 2015, the attestation phase is a stage aimed at issuing a certificate of recognition of points for personalisation of the path, unified according to the given criteria; at this stage, the Commission certifies the competence identified and assessed in the previous stages and recognises it, in accordance with the methods and within the limits it has previously established, as points assigned to one or more of the competences expected from education in the path applied for by the adult at the time of enrolment; in accordance with the provisions of Legislative Decree 13/13. The certificate of recognition of points for personalisation of the path – which is of a public nature – contains at least the following elements: a) data of the public entity (MIUR) and of the authorised entity (CPIA); b) personal data of the adult; c) skills expected at the end of the teaching period of the path chosen by the adult at the time of registration, considered as points; d) the procedure for determining each of the competences recognised for certification; e) the signature of the Commission, the director of the CPIA school and, in the case of an adult enrolled in one of the periods of teaching for second-level courses, the director of the school in which the second-level path is being pursued; f) the date and registration number.

The attestation phase is intended to issue a certificate for the recognition of points. The Commission certifies the possession of the identified skills and recognises them as points assigned to one or more expected competences, formalising this recognition in an Individual training contract.

Technology infrastructure for certification

In adult education, thanks to the recent reorganisation of the CPIA sector and the Institutes of Secondary Education with connected evening courses, a significant innovation has been introduced for some time, namely the possibility of using 20% of teaching hours for students remotely (Presidential Decree 263 / 2012 - Regulation on the general principles of redefining educational organisational structure of adult education centres, including evening courses).

In accordance with the current “Guidelines for transition to a new system of supporting organisational and didactic autonomy of territorial centres for adult education” (Order of 12 March 2015): *“Distance learning is one of the main innovations of the new organisational and educational structures set out in the ordinance, the new adult education system actually provides that an adult can use remotely part of the learning period of the path requested at the time of registration, to the extent usually not exceeding 20% of the total number of hours of the didactic period itself. Distance learning promotes the personalisation of the educational path. Remote learning responds to the specific needs of users who are not able to reach the place of teaching for geographical or time reasons. Distance learning contributes to the development of “digital competences”, recognised among the eight key competences in the lifelong learning process, specified in the Recommendation of the European Parliament and of the Council of 18 December 2006.”* To facilitate the implementation of this recommendation, it is also planned to create Agora, video-conference rooms launched by convention, where properly identified and registered students will be able to participate in lessons remotely from traditional places of conducting classes (e.g. affiliated CPIA offices).



The INDIRE platform “Adults in Education”, dedicated to providing models and content for distance learning; the basic idea is to provide a common and free workspace, based on the *Moodle* environment, which can be powered by content created and shared by teachers, in order to create a single virtual library for the Italian training system.

INDIRE and the Regional Research and Development Centres of the CPIA are also working on preparing a content validation sheet to be included on the platform “Adults in Education”. The latter is an important aspect, because in experiments with the activation of remote execution tools, content control or validation was performed in rare cases. This problem is also closely linked to the certification of skills completing adult education courses, as it is necessary to determine when designing and introducing a learning unit to the FAD which skills will be produced compared to those required and present in the Guidelines and certification models.

Problems

At the end of the discussion on the Italian system of certification of competences, it is necessary to mention the problems of linking competences to the needs of the labour market. One of the main complaints about the Italian adult education system concerns precisely the difficulty in establishing the appropriate links between training and the labour market, when in fact it is precisely for the needs of, among others, the production system that the need arises to provide good training to actually increase the capacity to meet labour demand and supply.

According to the assumptions of the certification of skills, the certification document should benefit both parties: both employers, which guarantee the use of highly qualified labour, and employees, as an objective and formal confirmation of the possible benefit offered under the contract. However, the real challenge is therefore communication between collective agreements and the register of professions. From this point of view, many critical comments are directed to the path that led to the current structure of legislation in this area, regarding the absence of social partners at strategic moments of the process that defined the structural features of the institute. Social partners could not influence the definition of general principles to define common standards for the validation and certification of competences. In other words, there was no real dialogue between the institutions and the parties to the industrial relations system, which would certainly help to better align the competences to the contractual personnel classification systems. This would be a crucial opportunity for the systemic implementation of such an important reform.

At the moment, however, the biggest difficulty is the understandable concern of the social partners about possible claims, including economic claims, of employees involved in skills validation and certification processes. This is an intra-corporate dimension of skills certification, which is currently one of the most controversial aspects of the institute. It has been observed that training, which is the basis for the certification of skills, has a dual professional function: one oriented toward “creating new jobs” and the other aimed at guaranteeing the protection of existing jobs. From the latter point of view, one of the most interesting aspects concerns the continuing distinction between subjective professionalism and objective professionalism. The first indicates the employee's professional predispositions, the second refers to benefits deducted from the contract and has practical value, referring to the tasks for which the employee is appointed.

This is the main limitation of the in-house certification of skills, because in the current legal situation, any enrichment of the employee's knowledge and skills in the workplace would only fuel a sense of personal



affirmation, which can only be confirmed outside the contract, not inside it. The topic intersects with one of the most frequently discussed aspects of so-called in-house training, whose discipline of employment contracts with training shows huge limitations. In this sense, it is emblematic that the system governing an apprenticeship contract in which training is delegated to a third party, bypassing any role of the company, probably also because of the shared concern that extending work may lead to maximisation of profits behind under the guise of the "teaching hour" payment.

• Romania – legal basis, certification bodies, certification stages, technological infrastructure for certification

Legal basis

In Romania, vocational training for adults, supplemented by educational qualifications or academic degrees with national recognition and/or certificates of professional qualifications, is a public service activity incorporated into the national vocational education and training system and is subject to the provisions of Article 192 of the Labour Code.

Vocational training provides the necessary preparation for the acquisition of the minimum professional skills needed to obtain a job and for the development and certification of those already acquired by means other than formal ones.

Professional skills are acquired in formal, non-formal or informal modes:

- the formal path means completion of a program organised by a vocational training institution;
- the non-formal mode means the performance of specific activities directly at the workplace or as part of self-study;
- the informal path means non-institutionalised, unstructured and unplanned methods of vocational training – non-systematic contact with various sources in the socio-educational, family, social or professional areas.

In Romania, there is a legal framework for the validation of non-formal and informal learning, as regards professional competences.

The first important steps were taken by Act 253/2003, which extended the tasks of the National Council for Adult Education (CNFPA) and concerned the certification of skills acquired through CVET, organised in non-formal and informal contexts.

As a result of the reform carried out in 2010, the National Office for the Protection of Human Rights was established with a link to the National Council for Adult Education (CNFPA) and the National Agency for Qualifications in Higher Education and Partnerships with the Economic and Social Environment (ACPART). Among other things, the Office coordinates the validation of professional competences acquired in non-formal and informal environments and is responsible for the accreditation of assessment centres. Each assessment centre specialises in specific professional competencies and may issue specific types of qualifications. The duration of accreditation for validation centres is 1-3 years, depending on their history. The validation of professional competence is based on the assessment of separate units, but sub-qualifications cannot be issued. The result for the candidate can be "competent" or "not yet competent". Participants in validation procedures must pay participation fees, which vary depending on the number of competencies to be validated and the pricing policy of validation centres.

The National Education Law 1/2011, along with subsequent amendments, opened up the education system and promoted the role of validation of non-formal and informal learning based on the learning



outcomes approach. However, there are no sector-specific measures, with the exception of validating the learning outcomes achieved by teaching staff in non-formal and informal settings and converting these learning outcomes into equivalent points in teacher training.

Certification bodies

Non-formal education in Romania is mainly conducted by educational institutions and the Education Centre, public and private institutions, governmental and non-governmental organisations, employee training programs organised by employers and cultural institutions. The certificates that can be obtained are certificates of professional qualifications and certificates of completion. Assessment methods include self-assessment, direct observation, oral examination, written test, design-based assessment, simulation or structured observation, reporting or assessment by others.

The general framework for the achievement of continuing vocational training and the development of qualifications necessary to support a competitive national human resource capable of functioning effectively in modern society and in the knowledge community is provided by the National Securities Administration (NCA). This is a specialised public body with legal personality under the Ministry of Education and Research (Resolution No 556/2011 on the organisation, structure and operation of the Romanian National Qualifications Authority).

The National Qualification Commission, pursuant to Art. 22(1) of the Ordinance, coordinates the authorisation activities of vocational training institutions and centres of professional competence assessment to ensure that they take place uniformly throughout the territory. In order to be authorised, providers of education and vocational training through non-formal channels (Professional Competence Assessment Centres) need to fulfil a number of eligibility conditions, which appear to be designed to make as few centres as possible eligible. A very important aspect is the fact that Competence Assessment Centres, bodies authorised by the NCA to certify skills acquired through means other than formal, are subject to additional conditions imposed by the Authority.

In the process of coordinating the authorisation of assessment centres for competences acquired through means other than formal, the National Qualification Commission, hereinafter referred to as the WOK, will use Competence Assessment, internal evaluators and external evaluators, i.e. certifying experts in the adult vocational training system. The qualification of an appraiser is obtained through participation in the selection to obtain the title of appraiser of professional skills and subsequent registration in the National Register of Appraisers of Professional Skills. Assessment centres for certification of skills acquired in a non-formal way have the right to use only evaluators entered in the National Register of Evaluators. Procedures for assessment and certification of experts for assessment and certification are also organised and carried out by the national competent authority and involve several stages. Professional skills appraisers perform their activities in accordance with the provisions of the “Procedure for assessment and certification of professional skills achieved by non-formal methods”, approved by the Regulation of the Minister of Education and Research and the Minister of Labour, Social Solidarity and Family No. 4,543/468/2004, as amended and supplemented, and the provisions of the instructions on the authorisation of centres for the assessment and certification of professional competences acquired through means other than formal, approved by the Chairman of the ANC. Assessors of professional competence may be regularly assessed/monitored by internal evaluators on the basis of a decision of the Chairman of the ANC.

The National Securities Supervisory Authority (ANC) prints and manages certificates of professional competence through authorised centres. Certificates of professional competence are recognised at national



level and are subject to the conditions of study documents. The qualifications of the national pre-university education system are official state documents, of particular importance, which certify possession of a qualification, with or without a diploma/final examination. The Certificate of Professional Competence is equivalent to the Certificate of Professional Qualifications, the only difference between them is the way they are obtained. The Certificate of Professional Skills is obtained through Assessment and is aimed as a service for working people. The Certificate of Professional Qualifications is obtained as a result of many years of participation in a course and is addressed to people who want to learn a profession from scratch. Recognition of qualifications is not practised in the commercial sector.

Stages of certification

Professional skills assessment and certification services are the process by which interested persons can obtain a certificate of professional competence, recognised in Romania and in the Member States of the European Union for qualifications where they demonstrate the necessary knowledge and skills, in accordance with a professional standard. Certificates of professional competence have the same value as certificates of completion of studies or certificates of qualification obtained after vocational training.

Professional skills assessment services are aimed at people who have experience in a given field but do not hold a certificate of skills acquired in the exercise of their qualification/profession.

Persons wishing to undergo assessment for the recognition of professional skills acquired through means other than formal, on the basis of a professional standard of professional preparation, report to an Authorised Centre for the exercise of the profession/qualifications. A professional standard is a document describing the specificity of professional activities and tasks of professions in the professional area and quality parameters related to their successful implementation in accordance with the requirements of the labour market.

The process of assessment and certification of professional skills is divided into several stages:

1) Registration of the candidate for competence assessment

Each candidate submits a written application to the authorised employment/qualification centre to which they apply for assessment and certification. In order to assess the professional competence corresponding to the profession/qualifications, each candidate is assigned a professional skills assessor who is responsible for the implementation of the entire assessment process.

2) Assistance for the candidate in completing self-assessment

Before undertaking the appropriate assessment process, the candidate, with the assistance of a professional skills assessor, analyses their professional performance against the content of the professional standard/vocational training standard. The professional competence assessor, on request, explains and specifies the content and provisions of the professional standard/vocational training standard.

3) Planning the units of competencies that the candidate requests for assessment

Depending on the outcome of the self-assessment, the assessor of professional competence recommends that the applicant participate in the assessment process of all or part of the standard or not participate in the assessment process. The decision to proceed with the assessment process rests with the candidate, who attaches to the application the competence units for which he wants to be assessed, from the list of standard competence units made available to him by the professional competence assessor.



4) Planning and organisation of the assessment process

The professional skills assessor provides the candidate with the assessment methods to be used and establishes, in agreement with the candidate, a timetable for the assessment process. The assessment program is approved by the management of the centre. Each centre establishes a specific assessment method so that the methods used consistently lead to the demonstration of the competence as a whole. It is mandatory that a written test and the method of practical demonstration of competence are part of any combination of methods chosen by the competence centre/assessor. The duration of the assessment process is determined by each centre depending on the specificity and complexity of the profession/qualifications, not exceeding 30 days.

5) Analysis of tests and competence results

The competence tests developed by the candidate during the assessment are analysed and assessed by the professional competence assessor in relation to the requirements of the professional standard/vocational training standard. A decision on the candidate's competence is made for each competence unit for which the candidate has been assessed. If, as a result of the assessment, the candidate is not satisfied with the decision "not yet competent", forwarded to certain competent bodies, they have the right of appeal, which should be submitted to the Assessment Centre within 5 days from the date of notification of the decision. The Centre appoints a further expert on professional competence to organise a new assessment process for the competence units subject to appeal.

6) Issue of a certificate of competence

Persons recognised as competent as a result of the assessment process receives a certificate of professional competence for the units of competence in which they have been recognised as competent. Persons recognised as competent in all units of competence relevant to a given profession or qualification receives a certificate of professional competence covering all relevant professional skills relevant to that profession or qualification, in accordance with the professional standard or standard of vocational training. Certificates have the same value as the certificates of completion of studies and the respective certificates of qualification with national recognition issued in the formal vocational training system.

• **Poland – legal basis, certification bodies, stages of certification**

Legal basis

In Poland, a comprehensive system of confirming adults' qualifications has been in force for about 10 years. Work on its introduction began in 2013 with the development of the legal basis. In the 2013 document titled "The perspective of lifelong learning" (annex to resolution No 160/2013 of the Council of Ministers of 10 September 2013), which was designed to ensure the coherence of the lifelong learning activities set out in development strategies, including actions for the coherence of the national qualifications system, taking into account the context of European and national specificities, one of the seven horizontal principles was identified as an "open approach to qualifications – assessment and certification of learning outcomes regardless of where and when it took place". On the other hand, among the operational objectives and directions of intervention indicated for implementation of "Objective 2: Transparent and coherent national qualification system" was assumed. In the justification for the choice of such an objective, the diagnosis of the situation at the time was indicated, i.e. it was noted that "the acquisition and awarding of qualifications is carried out in three different areas, i.e.:



- 1) in the education system, including the adult education system in institutions operating under this system, i.e. schools for adults and continuing education institutions, practical education institutions, vocational education and training centres,
- 2) in the higher education system,
- 3) in the labour market – in various institutions with the power to award qualifications (where there are competences that do not have formal status in the labour market, but are recognised by employers – on the basis of their own understanding of their usefulness), while “until now there has been no uniform description of qualifications and common, cross-sectoral measurement of the value (level) of qualifications”.

On the basis of the diagnosis of the current situation, seven strategic directions of intervention have been identified, which are:

2.1 Development and implementation of a new instrument to systematise qualifications from different sectors in Poland and compare them with qualifications in EU countries (National Qualifications Frameworks) in line with the principles of the European Qualifications Framework.

2.2. Creation of education and training programs at all levels in terms of the requirements expected in the economy and civil society:

- development of systemic cooperation with social partners and organisations in defining the requirements to which the content of education and training will be subject,
- development of professional information resources for the design of the content of vocational education and training,
- promotion of combining study with professional, social and civic activities.

2.3. Implementation of procedures for assessing and certifying the achievements of learners, i.e. regardless of place, mode and time of learning, education and training (application of an open approach to awarding qualifications):

- creation of a system for certifying competences acquired outside formal learning,
- involvement of representatives of the social partners and social organisations in monitoring the compliance of systems for examination and awarding of qualifications with a learning-based approach.

2.4. Standardisation of the description of qualifications in the national qualifications system as learning outcomes, including, above all, the creation of a national register of qualifications.

2.5. Implementation of the principles for quality of qualifications, taking into account the principles of the European Qualifications Framework and the findings of the Copenhagen Process and Bologna Process.

2.6. Implementation of changes enabling students to collect and transfer achievements in vocational education and training consistent with the objectives of the European System for the Collection and transfer of achievements in Vocational Education and Training (ECVET).

2.7. Increasing knowledge of National Qualifications and training Frameworks based on learning outcomes among:

- educational and training institutions,
- labour market institutions and professional advisers,
- labour market participants (employees, employers).

Of the above-mentioned, special attention should be paid to the directions of interventions 2.1, 2.3 and 2.4, as they extend the existing scope of understanding of certification of qualifications in Poland. In



particular, the direction of intervention 2.3 is an expression of a somewhat revolutionary change in thinking about the process of acquiring qualifications and competences. It introduces a category of *learning outcomes*, understood broadly, also as a resource of knowledge and skills obtained outside formal education. This provision legitimises an open approach to education, i.e. that it can take place *regardless of the place, mode and time of learning, education and training*.

It is also assumed that Objective 2, i.e. "Transparent and coherent national qualification system" must be strongly correlated with Objective 1, i.e. "Creativity and innovation." This objective refers to people, creating human capital, including in terms of the Polish economy. It was emphasised that "creativity and innovation are crucial for the development of enterprises and for the competitiveness of Poland in Europe and the world". Therefore, it is necessary to stimulate creativity and innovation in society. The justification for the choice of Objective 1 indicates that "in a context of rapid economic development, in particular, the value of non-formal learning, i.e. learning in the working environment, accompanying the production of increasingly complex products and services and their environmental impact, is increasing". Thus, the need to broaden the view on the value of non-formal education was emphasized. At the same time, attention was also drawn to the need to certify the acquired competences, which was articulated in the strategic directions of intervention concerning Objective 1. Among the six mentioned, two relate to the area of verification of acquired competences, which are:

1.3. Adapting systems for assessing people's competence to promote creativity and innovation:

- broadening the use of formative assessment (by tracking people's learning process, adapting to their course of study and giving them feedback to help them learn), combined with limiting the dominance of summative assessment,
- reorientation of the assessment of learners' achievements from the focus on superficial checking of the degree of assimilation of given educational content in favour of a deeper assessment of problem-solving abilities, including in a team, and the degree of preparation for lifelong learning.

1.6. Creating a new evidence-based policy:

- creating a tradition of continuous assessment of the development of education and training using representative competence studies in the most important areas (the national equivalent of the PISA study), based on a partnership cooperation between representatives of scientific circles, employers, employees, learners and civil society,
- strengthening the system of analysis and forecasting of the need for qualifications in the economy, including forecasting the demand for qualifications taking into account forecasts in the EU area,
- developing research facilities for LLL policy, especially in the context of the needs of the economy and the labour market,
- developing a system of communication and dissemination of information in the field of education and training and their links with the economy and the labour market.

The cited objective and course of intervention has set a new path for lifelong learning perspectives.

Certification bodies

In order to counteract the existing problems and to implement the postulates and obligations arising from EU membership, including those set out in Polish programming documents, the creation of an *Integrated Qualifications System* (IQS) was launched. This system operates on the basis of the provisions of the "Act on Integrated Qualifications System of 22 December 2015 (Journal of Laws 2016 item 64 as



amended)", which entered into force on 15 January 2016. In accordance with the provisions of the Act, the IQS ensures:

- 1) the quality of the qualifications awarded;
- 2) the possibility of recognition of learning outcomes obtained in non-formal education and through informal learning;
- 3) the possibility of the gradual accumulation of achievements and recognition of achievements;
- 4) access to information about qualifications that can be obtained in the territory of the Republic of Poland;
- 5) the possibility of comparing qualifications obtained in the territory of the Republic of Poland with qualifications awarded in other Member States of the European Union.

In accordance with the intention of the creators, the purpose of the IQS "is to increase the availability and higher quality of qualifications obtainable in Poland and, by assigning the qualifications covered by the IQS to the level of the Polish Qualifications Framework, mutual cross-reference of these qualifications and their reference to the European Qualifications Framework".

An important issue to be addressed is the organisation and unification by *Legal Act* of terminology relating to the area of acquiring and certifying qualifications and competences. The definitions contained in the *Act* significantly facilitate communication in this area. These include, but are not limited to, a more precise definition of certification which has been defined as: 'the process by which an applicant for a specific qualification, after having obtained a positive validation result, receives a document from an authorised certifying body certifying the qualification concerned'.

Very ambitious objectives have been set for the IQS, divided into different stakeholders, i.e.

- a) for citizens:
 - enabling comparison and assessment from a personal perspective of possible certificates and diplomas, thereby better planning of upgrading their qualifications and career development;
 - facilitating a rational choice of school and university, search for appropriate training and information on the possibility of obtaining diplomas certifying knowledge and skills;
 - simplifying the recognition of competences acquired in non-formal education and through informal learning (e.g. in the course of work);
 - increasing the opportunities for learning in different ways and for obtaining qualifications;
 - facilitating the acquisition of new professions and the transition between different industries;
 - enabling the presentation of their qualifications in a more communicative way for employers in the Polish and European labour markets (the implementation of the Act on the IQS will enable mutual referencing of qualifications awarded in Poland and referencing them to qualifications awarded in other countries),
- b) for employers:
 - enabling better identification of qualifications that are important from the point of view of the business;
 - facilitating the proper selection of qualified staff and helping to assess the actual competence of candidates for work, thereby reducing recruitment errors;



- facilitating the promotion of the professional development of workers, reducing the number of incorrect decisions in this field (by providing detailed information on the competences involved in the employee obtaining a new qualification);
- increasing the chances of winning contracts in the European market by demonstrating the real value of the qualifications held by the company's staff;
- c) for public authorities:
 - making it possible to increase the effectiveness of expenditures of public funds on the development of competences and retraining (by defining quality requirements for qualifications and implementing control mechanisms in this respect);
 - facilitating the implementation of tasks and projects defined in the Regional Operational Programs in the field of adult learning (in accordance with the requirements of the European Commission, one of the obligatory monitoring indicators is the participation of funds intended for obtaining qualifications in accordance with the assumptions of the Polish Qualifications Framework);
 - providing new instruments for the activities of professional and educational advisors and teachers (by providing easy access to full information on the qualifications available to them, including the required learning outcomes for each qualification and the possible paths to access them).

The entry into force of the Act on the IQS initiated the process of its creation, expansion and dissemination.

The institution that is responsible for coordinating work and substantive support in the field of the IQS is the *Institute of Educational Research* based in Warsaw – this is a research institute, conducting interdisciplinary research on the functioning and effectiveness of the education system in Poland.

Currently, in Poland, the IQS is the most comprehensive system in the field of certification of qualifications and competences acquired in the process of lifelong learning. This project is still under development.

Stages of certification

Currently, the IQS consists of four main elements, which are:

- a) Integrated Register of Qualifications – a public register gathering all of the qualifications functioning in the IQS. The register is intended to provide information on, among others, a full list of qualifications included in the system, their detailed descriptions, as well as requirements for candidates who want to certify possession of a given qualification.
- b) Validation – this is a process of formal certification of what a person knows or is able to do, regardless of the place/circumstances in which they have learned it – e.g. at school, in a course, at work or at home. A successful validation is completed by confirming possession of a professional certificate. Certifying authorities are responsible for the organisation of validation. What is important and worth emphasising is that a very large amount of work is aimed at disseminating a proper understanding of validation. A large part of society associates this primarily with examinations and testing. This approach is rooted in the so-called traditional model of education. However, validation within the meaning of an open approach to learning is, in addition to checking knowledge and skills, also the recognition of



potential – what a person already knows and is able to do, but also an indication of what else they can strengthen in themselves. Validation consists of three steps:

- identification – the stage in which one determines what a person already knows and is able to do, and what else they have to learn to get a qualification or plan their development in a different way. The stage may be conducted with the assistance of a validation advisor,
- documentation – the stage of collecting evidence (documents) that a person knows and is able to do what is necessary to obtain a certificate – and thus certification of the required learning outcomes,
- verification – the stage in which assessors (specialists in a given area) check whether the person has all the required learning outcomes. If the assessors confirm that they do, the certifying authority will award the qualification and issue the certificate.

In the validation process, an important role is played by feedback that describes the person's potential and areas of strengthening and development. Validation is a fee-based service and the amount of fees depends on the certifying authorities conducting the process.

- c) Certification bodies – institutions with the power to award specific market qualifications included in the IQS, that is, to issue professional certificates confirming the possession of qualifications. The database of institutions is open, and entities interested in acquiring the power to award qualifications can apply (submit applications).
- d) The Polish Qualifications Framework – all qualifications included in the IQS have a given level in the Polish Qualifications Framework, which describes the complexity of skills acquired within a given qualification. The PQF label is on each certificate issued within the framework of the IQS – both a professional certificate and, for example, a matriculation certificate. Polish Qualifications Framework – this is an eight-level framework structure that indicates how qualifications should be described. Each level is defined by general statements characterising the requirements of knowledge, skills and social competence that must be met by persons possessing a qualification of a given level. A unique solution used in Poland is the introduction, in addition to first level characteristics (universal), of second level characteristics (detailed). Universal and detailed characteristics constitute a coherent whole.

Problems

One of the most important problems related to the functioning of the IQS is its insufficient recognition in the employers' environment and the lack of universal recognition of certificates issued under the IQS. Therefore, a very large amount of work is put into disseminating knowledge about the IQS in Poland. Due to the novelty and innovativeness of this initiative in the Polish education system, it requires introduction and strengthening of its recognition among Polish society and awareness of the usefulness of issued certificates of skills – certificates among employers. In order to find out about the offer of the IQS, regional Partner Networks have been created, gathering representatives of various entities – starting with authorities and institutions that take care of the development of the region. In addition to the promotion and information activities, these networks carry out activities for the implementation of the IQS in the regions. In this way, this initiative is growing across Poland, engaging and reaching further stakeholders.

c) Summary



In all 3 countries, there are solutions for the certification of adult competences and qualifications. In Italy, these tasks are carried out by the "Territorial networks for lifelong learning", which provide paths for formal, non-formal and informal learning, recognition of training points, certification of acquired knowledge in each case and use of life-long guidance services. In Romania, there are, among others, Professional Competence Assessment Centres certifying formally acquired competences and authorised entities providing vocational education and training through channels other than formal. In Poland, there is an Integrated Qualifications System, through which certification of qualifications and competences acquired in the process of lifelong learning can be obtained. However, due to the novelty of the idea of adult education and confirming competences, these solutions are relatively young (several years a dozen or so, depending on the country) and still in the development phase. There are also problems related to the implementation of competence certification systems. In Italy, there are difficulties in linking the available training to labour market needs in real terms. Another very important problem is the participation of adults – employees involved in the processes of validation and certification of skills, which in Italian conditions leads to economic claims, both on the part of employees and the trade unions operating there. In Poland, barriers to the development of the certification system are the lack of universal recognition of issued certificates by employers and insufficient knowledge about this system.

3. Ordinances and directives on the digitalisation of skills in Italy, Romania and Poland

The chapter will present the main information on the area of adults' digital skills and digitalisation in the three partner countries, i.e. Italy, Romania and Poland.

a) Digital competences – an economic necessity and a social challenge

In 2017, the European Commission - DG CONNECT published the results of the study "ICT for Work: Digital skills in the workplace", which aims to examine the transformation of jobs in the EU's digital economy and the extent to which digital technologies have penetrated the workplace and the digital skills required by employers and the labour market today. The digitalisation of the economy contributes to the polarisation of the labour market, as it has led to increased demand for highly qualified people who are able to use new technologies to fulfil their professional tasks, and, on the other hand, to a decrease in demand for low-skilled workers. Here too, automation based on intelligent human-replacement technologies has led to job losses in some cases, while the digitalisation process is encouraging the emergence of new professions that require cognitive and interactive skills that complement computer work. Moreover, digitalisation also leads to the transformation of existing jobs, by changing work tasks and, consequently, the skills needed to pursue specific professions. This, in turn, creates a growing mismatch between the digital skills needed on the demand side of labour and the digital skills currently available on the supply side. According to 2017 statistics, 85% of jobs in the EU require basic digital skills, while 43% of the EU population do not have sufficient digital skills.

In the modern economy, digital competences are the engine of social progress, including for those at risk of marginalisation. This is one of the reasons why the European Union has taken several initiatives in the related area of "e-inclusion", a term that refers to actions aimed at creating an "information society for all". As part of this initiative, the area of interest of adult education trainers in digital competences focuses on adults at risk of social exclusion, in particular those at the margins of society and older people who need to



develop digital competences to maintain their social relationships and exercise their cognitive abilities in the digital world.

Digital competences first appeared in the new key competences framework for lifelong learning in the 2006 recommendation of the European Union Council and were subsequently taken up in 2018 as a transversal lifelong skill reflecting an understanding of digital knowledge, which goes beyond the strictly technical and procedural concepts characterising previous European approaches. In contrast to the mere conceptualisation of ICT (Information and Communication Technologies) skills, the updated concept now includes aspects such as critical assessment of on-line information or creative practices of digital content production. The DigComp framework is an essential tool that has been developed by the European Union to meet the challenge of digital transformation by investing in our lives and jobs. DigComp was first published in 2013 and then revised and updated. Its latest version, DigComp 2.1, dates back to 2017 and offers a description of the skills that are needed today to use digital technologies in a safe, critical, collaborative and creative way to perform activities and achieve goals related to work, study, leisure, inclusion and participation in our digital society. Today, this framework is Europe's main reference point for the development and strategic planning of digital competence initiatives.

The DigComp Framework includes five dimensions:

- 1) 5 areas of knowledge identified as part of digital competences: Information and data literacy; Communication and collaboration; Digital content creation; Safety; Problem solving
- 2) 21 descriptors of relevant skills and qualifications for each area.
- 3) 8 levels for each competence, namely Basic> Level 1 and Level 2; Intermediate> Level 3 and Level 4; Advanced> Level 5 and Level 6; Highly specialised> Level 7 and Level 8.
- 4) knowledge, skills and attitudes applicable to each competence.
- 5) examples of use, concerning the possibility of applying competencies for different purposes.

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b) Digital skills of adults in selected countries

• Italy

According to the Digital Economy and Society Index (DESI) 2020: "Italy is launching initiatives to strengthen digital skills and address digital inclusion. Intensifying and concentrating efforts would help to reduce the digital divide among the population and ensure that most citizens have at least basic digital skills. Another important step in this area would be a comprehensive approach to upskilling and retraining the workforce, including strengthening advanced digital skills." Actions are currently being taken in Italy to join the European Commission's Digital Skills and Jobs Platform to bridge the various social and cultural forms of the digital divide among the Italian population, promote digital inclusion and promote the development of new professional skills.

On July 21, 2020, the Minister of Technological Innovation and Digitalisation signed an ordinance adopting the National Digital Skills Strategy, which constitutes the necessary basis for the implementation of organic, multi-sectoral and effective interventions in an area fundamental to the economic and social development of the country. So far, the lack of a strategy has limited the implementation of digital transformation processes, therefore digital skills are a strategic priority and are developed within the framework of the 'Digital Republic' initiative, and the National Strategy is the result of a cooperation-based approach that has involved ministries, regions, provinces, municipalities, universities, research institutes,



companies, professionals, associations and various public sector entities, apart from organisations belonging to the National Coalition.

There are four axes of strategic intervention:

- 1) in education and training, for the development of digital skills in the framework of educational cycles for young people, within the coordination of the Ministry of Education and the Ministry of Universities and Scientific Research;
- 2) in the field of active work, it is about ensuring appropriate digital skills in both the private and public sectors, including e-leadership skills, in coordination with the Ministry of Economic Development and the Minister of Public Administration;
- 3) in the field of specialised ICT skills to increase the country's ability to develop skills for new markets and new employment opportunities, largely related to emerging technologies and the possession of skills necessary for future jobs, with the coordination of the Ministry of Universities and Research and the Ministry of Economic Development;
- 4) in the field of civil society, in order to develop the digital skills necessary for the exercise of civil rights and informed participation in democratic life, with the coordination of the Minister of Technological Innovation and Digitalisation (MID). The aim is to bridge the gap with other European countries, both in terms of digitalisation in general and in relation to individual axes of intervention, as well as to close the digital divide between different areas of our national territory.

These measures are important because the situation in the area of digital skills in Italy is not favourable. According to Eurostat data from 2019, only 42% of Italians aged 16 to 74 have at least basic digital skills (it is 58% in the EU), which has a significant impact on the use of digital services. Italy ranks last among European countries in terms of internet use – 17% of people aged 16 to 74 have never surfed the web (almost double the EU average of 9%). Data also indicate that only 1% of Italian graduates have ICT qualifications (the worst in the EU) and the percentage of ICT professionals, although it has increased over time and reached 3.6% of total employment, is still far from the EU average (4.2%). The lack of digital skills is one of the main obstacles to Italy's development and it is an increasingly pressing problem, as:

- it has a negative impact on both the provision of digital services by the public and private sectors and on the access and use of them by citizens,
- it exposes a significant part of society to the risk of social and labour market exclusion
- it hinders access to forms of participation and public consultation;
- it increases the risk of exposing citizens to large-scale disinformation;
- it reduces employability and access to the digital environment for continuous updating of knowledge and skills.

To counter digital exclusion in Italian society, action is being taken at the central level to develop strategic solutions. These include, among others, the "Strategy of technological innovation and digitalisation of the country of Italy 2025". This aims to take action to strengthen the digital capacity of citizens. To this end, the state has committed itself to ensuring ethical, responsible and non-discriminatory technological development, and citizens will be provided with training to access the jobs of the future through a process of continuous education.

The main assumptions and directions of actions to improve the level of digitalisation of Italian society are contained in the strategic initiative for digital skills called "Digital Republic". According to its assumptions,



digital skills are a fundamental strategic axis for social and economic growth, only achievable if three conditions for sustainable evolution are achieved through detailed systemic interventions:

- 1) the society is becoming increasingly digital aware and is thus able to make full use of the benefits of digitalisation.
- 2) public administration and businesses are urged to improve the services provided, where the user is perceived in the centre, as a conscious person, pursuing a profound transformation, including manufacturing processes, which requires both common digital skills (starting with e-leadership managers, while interconnecting business skills and digital transformation skills) and specialist skills;
- 3) the education system is structured to cover the needs of developing digital skills in an organic way and in the logic of continuity and correlation in the learning path between the different phases of personal and professional life.

The solutions developed concern both the public and private sectors. In the private sector, the role of digitalisation is particularly important because of progressive technology in all processes – from management to production, as well as the impact of companies on the environment.

Scenarios for the development of the Italian economy assume:

- in the coming years 30% of the new workforce needed in Italy will be employed in the digital or circular economy professions.
- traditional professions are therefore subjected to continuous upskilling and reskilling action, and will be increasingly so in the future,
- the increasing contribution of women to the technological development of the state system and the importance given by Italy to the Declaration "Women in Digital" signed at EU level on 9 April 2019 during Digital Day 2019;
- ICT workers now account for 4% of all employees. A major challenge for the country will be to support new players, specialists and their strategic skills, in their emergence in the market, while at the same time strengthening digital skills in the remaining 96% non-ICT workers.

For these reasons, the private sector is increasingly focusing on training and process or product innovation. The promotion of entrepreneurship in digital development is carried out by providing tools for:

- improving digital skills;
- orientating business toward technological transformation;
- disseminating innovation at all levels;
- linking the world of scientific research with the world of business;
- supporting the demand for innovative technological solutions.

In addition, in the scope of accompanying companies in the digital transformation of their business processes, the Ministry of Economic Development (MiSE) plays an active role through close public-private synergy. In parallel with the Competence Centres that provide support for technology transfer, experimentation with new assistive technologies and advanced technology training, along with industry associations and a system of chambers, a development path has been created that sees the coherent operation of DEPs, Digital Entrepreneurship Points, DIHs, Digital Innovation Hubs, up to EDIH, i.e. the European Digital Innovation Hub.

The issue of digital skills for the future of Italian companies therefore requires joint action involving different actors. It is essentially a systemic action, involving the full involvement of various stakeholders or ministries, territorial public authorities, large private bodies, trade associations, chambers of commerce. This



systemic action will involve public and private actors involved around measurable objectives in a strategy led by the task force set up at MiSE and in direct connection with the European indications and the #NextGenerationEU strategy. New actions and programs will be launched to:

- aim for more innovation and business in schools;
- launch the Startup competition both in schools and universities;
- create training modules dedicated to small businesses to facilitate their access to digital technologies;
- strengthen training 4.0;
- bringing digital businesses closer to traditional ones through joint projects;
- establish an Italian artificial intelligence centre.

The impact to be achieved, in line with the expected results of the National Digital Skills Strategy, can be summarised as follows:

- increasing the number of private sector employees with basic digital skills;
- increasing the number of private sector employees with specialised digital skills;
- modernisation of production processes;
- greater technology transfer to businesses;
- greater presence of the business world in the world of teaching and vice versa;
- increasing the interaction between digital and traditional businesses;
- multiplying national initiatives regarding emerging technologies such as Blockchain, IoT and artificial intelligence;
- facilitating access to and use of ultra-broadband telecommunications networks and digital technologies.

While the Italian private sector is taking up the challenges of the digital revolution quite vigorously, it is much more difficult in the public sector. Most public administrations have not yet appointed a Digital Transition Manager, as provided for in Art. 17 of the CAD Digital Administration Code (legislative decree 82/2005). In addition, many of the resources assigned to this function do not possess the technological, legal, and management skills required by the standard. This delay was highlighted in the final report of the Parliamentary Committee. Problems arise already at the recruitment stage for official positions. Excessive focus on legal and administrative skills has over time contributed to the affirmation of the management class, often lacking the skills necessary to recognise innovative opportunities and coordinate the processes of change enabled by digital technologies that directly relate to the functions and operating procedures covered. The human capital of the Italian public administration as a whole is poorly equipped, older (45% of Italian state officials are over 54 years old compared to 22% in the OECD average), and above all low-skilled (only 38% of public employees have obtained a university diploma and 3% a postgraduate diploma). This lack of skills has not been addressed in recent years by adequate investment in training, especially in the digital field (in 2017, only slightly more than 126 000 participants were registered in digital training, which corresponds to around 5% of the total). The AgID, Agency for Digital Italy, has played an active role in defining reference models for the systematisation of digital skills in public administration, by updating the "Guidelines for the quality of digital skills for ICT professionalism" and by publishing the "Guidelines for the harmonisation of professional qualifications". The theme of mapping skills and training needs of the Digital Transformation Manager (RTD) is therefore one of the key points of the memorandum of understanding that



AgID signed in 2019 with the Conference of Rectors of Italian Universities (CRUI), as a starting point to identify targeted and qualitative pathways for skills development.

There are significant changes in social consciousness related to the need to take up challenges in response to the needs of the changing world. Among others, a wide range of training was created, focused mainly on specialist skills responsible for digital transformation, in accordance with the provisions of the Three-year Plan for the Computerisation of public administration 2019-2020. Systemic initiatives, promoted mainly by the Department of Digital Transformation, AgID and SNA, the National School of Administration, also in cooperation with other central administrations, are then accompanied by a multitude of initiatives at the regional, local and sectoral levels, aimed at specific needs related to defined professional categories or with the mission of the proposing entity. Finally, universities offer a diverse range of master's degrees, modules or specialist pathways, particularly in key sectors such as cultural heritage and health, as well as focused research and development.

However, all these initiatives, which have a significant qualitative impact, are insufficient to meet the overall demand for digital skills to support professionals and public managers in decision-making processes or specific sector needs.

The changes to be achieved in public administration, consistent with the expected results of the Strategy, are as follows:

- increasing the number of civil servants with at least basic digital skills;
- increasing the number of civil servants with specialised ICT skills;
- increasing the number of digital public services for citizens, especially businesses.

Examples of Italian solutions for improving the digital competences of the society:

- Since 2019, the ANG network has been operating the National Youth Agency Radio. This is a digital radio station, which aims to listen to young people, promote social inclusion and strengthen digital skills through activation in social and cultural issues.
- Since 2017, the FIRIDA national fair has been held, a major event dedicated to adult education, promoted by MIUR and the Italian Adult Education Network (RIDAP). Since 2019, the fair has been linked to Leonardo visionario, a training project on innovative teaching and digital technologies in education that has provided more than 60 000 hours of training in one year.
- In 2014, MIUR launched the National Action Plan for Innovation in Adult Education (PAIDEIA), which supports the activities of territorial lifelong learning networks and promotes experimentation with the on-line PIAAC (leader of ANPAL), providing territorial centres for adult education (CPIA) with a self-assessment tool prepared by the OECD to measure adult skills.

The main areas of intervention have been identified to strengthen the digital Italian society:

- 1) Internet access for the working-age population with low digital skills and low educational attainment;
- 2) developing the digital skills of the working-age population already using the Internet;
- 3) inclusion/digital access of older people, women not in employment or in special conditions, immigrants, people with disabilities, disadvantaged groups in general and those with a low level of education.

A variety of actions are being undertaken in response to this, including: adult training in Educational Institutions, in cooperation with schools; informal learning based on strengthening lifelong learning, using on-line learning platforms; digital and information skills training in local communities; processes of literacy



and awareness raising; path of digital integration, with a number of activities dedicated to disadvantaged social groups.

The assessment of the initiatives carried out and the experiment conducted show the need to *build on* the experience (both public and private sectors and civil society) which has reached such a level of maturity that can serve as a reference point and solve the problem of lack of integration in a systemic way (at the territorial level, as well as between various actors and between administrations) and the episodic nature of interventions and initiatives.

- **Romania**

In Romania, the digitalisation of the education and training system has been a priority topic since 2016, with the launch by the presidential administration of the national project “*Educated Romania*”. In the years 2016-2018 the presidential administration conducted a wide public debate on education in Romania, starting from projections of the future and forecasting the challenges for modern society. Despite this fact, Romania does not have a national strategy to digitalise the education and training system. The European Commission’s DESI report for Romania 2020 states that “the extent to which Romania has achieved the commitments set out in the Strategy (National Digital Agenda Strategy for Romania 2020) is unknown. It is also unclear whether Romania intends to assess the implementation of the strategy and whether it intends to present a report on the current situation.” Despite being a top-performing country in terms of connectivity, thanks to the high use of very fast broadband and the wide availability of very high-capacity fixed networks, especially in urban areas, Romania ranks 26th out of the 28 EU Member States in the Digital Economy and Society Index (DESI) for 2020. The educational area is not the only one in which problems with digitalisation are visible. Romania has achieved poor results in the digitalisation of businesses, digital public services and digital skills. *“This situation is due to generally slow progress, but also political changes, as there have been four different governments in Romania over the past three years.”*

As with other Member States, since March 2020, the COVID-19 pandemic crisis has resulted in a shift in educational practices, i.e. a shift from face-to-face interaction to contact via the on-line environment. This challenge has particularly highlighted the role of digital education as a key element for high-quality, accessible learning and the acquisition of sustainable digital skills. The protracted COVID-19 pandemic and frequent changes of government (five governments in the last four years) pose a particular challenge for the country. The pandemic triggered increased use and demand for digital public services and accelerated the digital transformation of the Ministry of the Interior, which was working on the rapid and secure development and implementation of various ICT systems. In December 2020, the new government established the Ministry of Research, Innovation and Digitalisation, which is subject to the Romanian Office for Digitalisation (ADR).

The negative picture of the level of digitalisation in Romania is the driving force for action at the central level. On October 26, 2020, the Ministry of Education and Research began the process of developing the “Strategy for the digitalisation of education in Romania 2021-2027”, called *SMART.Edu*, focusing on the key concept for a modern and accessible school, based on digital resources and technologies. The main directions of action under this strategy are:

- accessibility – provision of digital infrastructure and new technologies to ensure access to inclusive and high quality education;



- connectivity – developing digital skills for the digital transformation toward a competitive society focused on sustainability, social justice and resilience; digital skills and the fight against disinformation; using open educational resources;
- community – consultation and involvement of stakeholders;
- digital educational ecosystem – creating a high-performance digital learning environment in accordance with the principles of digital ethics, personal data protection, cyber-security, data analysis, etc.;
- innovation – harnessing all digital/emerging resources and technologies, stimulating entrepreneurial creativity;
- sustainable development – ensuring medium- and long-term predictability, through cross-sectoral cooperation, for high-quality education and a green and digital economy.

The implementation of these actions aim at achieving the following results:

- equipping 90% of the Romanian population with digital skills;
- the establishment of infrastructure and technological resources suitable for all educational institutions in Romania;
- integration into the labour market of 82% of the population aged 20-34 for professions entering the market.

Unfortunately, we will have to wait for the effects of the actions taken. Currently, the statistics on Romania's digitalisation are still unfavourable. According to Eurobarometer statistics from the first half of 2020, Romania ranks at the bottom of the European ranking in terms of the percentage of SMEs (small and medium-sized enterprises) that have a plan or strategy to digitalise their activities. This applies both to the use of basic technologies (such as e-mail, websites) and advanced solutions. This means that the lack of a digitalisation strategy in SMEs is a symptom of more serious structural, ecosystem and entrepreneurial culture problems that prevent Romanian SMEs from succeeding compared to those in other European Member States. Despite this, Romanian SMEs are generally more open and willing to digitalise than companies from more advanced countries, but are unfortunately taking few concrete steps in this direction. The main causes are: barriers to digitalisation or uncertainty about future digital standards; lack of funding; regulatory barriers; lack of skills, including managerial skills; cyber-security issues; lack of IT infrastructure and internal resistance to change. In particular, the latter reason points to the digital immaturity of a significant part of Romanian SMEs, which, while not rejecting digitalisation, do not actually have a strategy or identify obstacles to its introduction. The digital and management skills aspect of the digitalisation process is very little identified as an obstacle to digitalisation by SMEs in Romania. A significant proportion of Romanian SMEs do not have a sound analysis of the need for digitalisation. This attitude also translates into awareness of the digital solutions used, in particular with regard to security. For SMEs in Romania, the topic of IT security is one of the least important from the point of view of adopting digitalisation in the company. This should be attributed to the lack of digitalisation and concrete experiences related to the security of data and business processes in a highly digitalised environment.

The problem of digitalisation in Romania is structural in nature and is linked to the preconditions for digitalisation itself. Many SMEs only become aware of the problems when the digitalisation process begins. According to statistics, Romanian micro-enterprises are among the ones that least identify digitalisation as a problem. According to DESI 2020, Romanian companies are among the European companies with the lowest integration rate of digital technologies into their operations. Therefore, and even more so in the case of



micro-enterprises, the fact that they do not identify digitalisation as a problem means that they do not consider it necessary to make an effort in this area and therefore do not address it directly. The conclusion from these data is that the aspect of digitalisation and its key role in transforming business and even managerial function is extremely poorly understood among micro-enterprises in Romania. According to the identification of the problem of digitalisation, few micro-enterprises (5%) in Romania have a strategy or an action plan for digitalisation. Less than 50% of SMEs think they need, or have already started, to adopt certain digital technologies. This result is alarming as it shows that there is not even awareness of the importance of digitalisation, and more than half of micro-enterprises in Romania do not even identify it as a desirable aspect. Going into details, 27% of Romanian micro-enterprises say they have adopted, or intend to adopt, basic digital technologies (such as e-mail or creation of a website), but have not adopted advanced technologies - 7% of Romanian micro-enterprises have already started using them. Therefore, solutions are being developed to improve this situation.

The government strategy "Developing the SME sector and improving the business environment in Romania toward the digital economy in 2021-2027" includes transversal actions such as:

- developing networks of digital innovation hubs;
- enabling SMEs to acquire the skills necessary to use new technologies;
- helping SMEs to easily switch digital service providers and benefit from data portability, as required by the ordinance on the free movement of non-personal data;
- raising awareness of security threats among SMEs and stimulate investment in cyber-security.

The situation of the Romanian public sector is very similar. Although the use of e-government tools has developed in recent years, the electronic public services sector in Romania remains underdeveloped. In 2020, the *National Digital Agenda Strategy for Romania 2020 (SNADR)* was developed, which focuses on the need to digitalise public services. However, there is still no government-wide inventory of all public services made available to citizens and legal entities to assess and monitor the implementation of public policy. The provision of public services in Romania is ensured by the control of data from various public authorities or institutions; currently the digitalisation of systems is not yet complete. Among other things, there are still outdated systems that are completely isolated because they were not designed with digitalisation in mind. This situation is compounded not only by technical difficulties in ensuring real digitalisation, but also by the poor quality and incompleteness of some data registers, as well as the lack of cooperation of public administration staff in relying on the latest IT systems to eliminate classic paper documents, signed and stamped manually. Currently, there is no electronic identification system available in Romania. The provision of electronic identity cards and digital signatures, for example, would be necessary to facilitate interaction between public and private actors. The most pressing problems in the field of public e-services are:

- lack of an efficient and effective IT system for the overall management of electronic public services - in order to facilitate interaction between public administrations and the exchange of information between different databases, it is necessary to develop a framework and protocol for the exchange of information in a secure and reliable way,
- lack of IT systems needed by central public authorities to operate electronic public services - some public institutions or bodies have developed various IT systems used for the provision of electronic public services, which are, however, insufficient, mainly due to the lack of specific requirements related to a good level of digitalisation and on-line interaction with beneficiaries,



- insufficient number of e-government and human resources specialists in IT departments of public institutions and authorities, together with the skills needed to develop and maintain electronic public services - at national level, a number of employment studies indicate a significant shortage of IT professionals for the private sector, in particular, this has been caused by the creation of centres of development and innovation on the ground, in different areas of the country. There are no such estimates in public administration and the public sector, but qualitative analyses carried out for the purpose of formulating public policies indicated that in general the number of IT staff in dedicated structures is not adequate for the organisational needs in the field of the development of efficient electronic public services. In addition, they do not benefit from specialised training programs that help them acquire the basic technical and management skills necessary to implement complex and strategic national information systems. There is a lack of HR strategies aimed at developing the technical IT skills needed for the e-government sector.
- lack of a uniform and effective legislative and procedural framework to support e-public services. National legislation, which is generally or particularly relevant in the field of e-government, shows significant shortcomings which have contributed, together with the above reasons, to the slow and fragmented evolution of e-public services in Romania.

The findings of the analysis of data on the digitalisation of public services show that digital public services continue to be a challenge for Romania. The country scores well below the European average for all indicators, including the availability of digital public services for citizens (44% compared to the European average of 75%) and for businesses (42% compared to the European average of 82%). Digital interaction with public administration is also low, as only 17% of Internet users use e-government services.

The situation in the private sector is no better. Digital barriers are mainly those related to human capital (low e-skills of employees, specific digital business management skills are poorly presented in the SME sector). To a lesser extent, but still significantly, the lack of financial resources for the adoption of advanced digital technologies and support (expertise/advice) is also considered an obstacle. The lack of clarity and the lack of coherent evolution of e-government tools are an obstacle to the digital transformation of enterprises.

The overall picture of digitalisation and digital skills in Romania is unfavourable. According to the *Digital Economy and Society Index* (DESI) 2022, Romania ranks 27th out of the 27 member states of the European Union. Initiatives are being taken to change and improve Romania's situation. Projects aimed at implementing various digital priorities were included in the "National Investment and Economic Recovery Plan" launched by the Romanian government in July 2020, with a budget of €100 million from European and national funds, for the period 2021-2030.

According to DESI 2022, in terms of human capital, Romania is well below the European Union average. The country faces a lack of basic digital skills among its population. Less than a third of people aged 16-74 have basic digital skills (28% vs. 54% in the EU) and digital skills above basic (9% vs. 26% in the EU); 41% of people in Romania have basic digital content creation skills (below the European average of 66%). Although there has been a slight increase in the percentage of ICT professionals, they represent a much smaller proportion of the workforce than in the European Union as a whole (2.6% compared to the EU average of 4.5%). The number of companies offering ICT training to their employees is very low at 6% (EU average - 20%). Romania, on the other hand, performs very well in terms of the number of women ICT specialists, who represent 26% of all ICT specialists, and in terms of the number of ICT graduates, ranking first among EU Member States with 6.7% of all ICT graduates.



On the one hand, the digital transformation is accelerating the acquisition of new skills, but on the other hand, it seems that the adult population still lacks the qualifications and professional skills to develop professionally. Digital and technological transformation is a priority and an inevitable process. But for many adults, there is a significant risk of not finding a job and being left behind due to a lack of appropriate qualifications and skills, especially digital ones. Investment is therefore needed to increase the skills and use of ICT among the population. They will lead to a reduction of the digital divide and thus to equality at national level, but also increase employment, productivity, efficiency and competitiveness of the economy by reducing the *digital divide* and economic disparities between Romania and other European Union countries.

- **Poland**

The Polish path in the field of digitalisation of society is based on strategic assumptions developed by the EU. The first of these was the "Digital Agenda for Europe 2010-2020", which put particular emphasis on increasing access to, and disseminating the use of, digital solutions to develop digital potential and its elaboration from 2015, the Digital Single Market Strategy. The second extremely important strategy was "Shaping the digital future of Europe", which set 3 key digital objectives, i.e.: technology that benefits people; a fair and competitive economy; an open, democratic and sustainable society. The current strategy is the Digital Agenda for Europe 2020-2030, which focuses on the challenges of new ways of communicating, shopping and accessing information.

Since the beginning of its presence in the EU, Poland has been taking steps to implement the EU's strategic objectives in the field of digitalisation. However, despite almost 20 years of work in this area, not all the planned changes have been achieved, in particular in the area of digital competences of the society. According to European Commission data presented in the *report on digital progress* (EU DESI 2021), in terms of digital society human capital, Poland ranks 24th of 27 EU countries. The data collected for this report shows that in 2019, only 44% of citizens in Poland had basic digital skills, while the EU average was 56%. The EU average from 2019 is also the percentage of people with basic or above-basic digital skills in Poland assumed in Polish government programs at the end of 2022. In addition, national analyses of the situation in the area of digital competences have also shown the existence of other problems, including, despite a significant decrease in the number of digitally excluded people in 2019-2020, still about 13% of the total population of Poland is beyond the reach of the digital economy, i.e., for example, they do not make electronic transactions or purchases via the Internet. The analysis also showed that Poland has one of the lowest levels of employment of women in the ICT sector among the EU countries. A report prepared by the National Centre for Research and Development (NCR&D) in 2020 showed, among others, that universities lack information technology equipment, software and tools for on-line work. These results show that there is still a lot to be done in Poland in terms of both infrastructure and digital education. A coordinated system approach is needed both in terms of regulation and implementation of comprehensive educational solutions. And this is what is missing in Poland for the moment.

In order to improve the level of digitalisation of the country and the level of digital skills at the government level, three programs have been developed to support the development of digital competences in society: "Integrated State Information Technology Program 2019-2022", "IT Talent Development Program 2019-2029" and "Digital Competence Development Program 2030".



Paradoxically the COVID-19 pandemic has contributed to the development of digital competences in the last 3 years. Limiting the possibility of direct interaction and transferring activities in many fields to the network, from shopping, to studying and remote work, forced many people to acquire (at least at a basic level) or develop digital competences. However, this forced, bottom-up change is not an appropriate solution to the problem of insufficient level of digital competences in Polish society. A particularly important problem has been diagnosed in relation to higher education. The results of an ad hoc survey, conducted in 2020, in connection with the announcement of the state of epidemic, for the needs of the then Ministry of Science and Higher Education by the Information Processing Centre – National Research Institute, were not optimistic. A survey conducted among universities on distance learning during the suspension of didactic classes showed, among others, that the vast majority of remote classes (88%) used e-mail contact with students, and only 15% of remote classes were conducted using external materials and courses. In addition, 72% of universities participating in the study did not have open educational resources (e-textbook type) or entire courses that could be made available to other entities. The interviews conducted in the academic environment showed another important problem: the Ministry of Education and Science did not analyse the needs of academic staff in terms of increasing the level of digital competences. Therefore, there is a lack of information on the actual needs for digital skills among academic staff.

Against this background, the situation in the education sector is better – basic and above-basic level. The Ministry of Education and Science each year took into account the development of digital competences in the educational policy of the state, as well as in the plans of the education ministry itself. The *Human Capital Development Strategy (HCDS) for 2017-2024* assumes that 30% of teachers employed in the education system will participate in activities to improve their competence in the implementation of the base curriculum using modern didactic aids and teaching methods. The activities of the Minister of Education and Science resulted in over 580,000 teachers participating in training to improve digital competences and other forms of professional development in the years 2018-2021. As part of the actions undertaken during this period, **62 e-textbooks and about 30 thousand other electronic educational materials for general and vocational education** in primary and secondary schools were published on the Integrated Educational Platform.

The state of affairs is confirmed by the results of the conducted checks on the degree of implementation of digitalisation processes in Poland. In March 2022 the Supreme Audit Office (which in the Polish system is the main and independent state audit authority guarding public finances), published "Information on the results of the audit of public administration bodies' activities to improve the digital competence of the society", conducted in the period from January 1, 2018 to October 6, 2021, in which it was unequivocally stated that "the actions of ministers and other entities to improve digital competences have turned out to be insufficient. There was a lack of a strategic document to comprehensively define the main assumptions and directions of action in this area. There is also no single entity to coordinate all activities related to the development of digital skills.

The lack of coordination was repeatedly indicated by SAO as the main weakness of Polish solutions for improving digital competences. All the more so because, as SAO emphasised, actions aimed at improving the digital competences of society were undertaken by, among others: the Office of the Prime Minister (OPM), the Ministry of Education and Science (ME&S), the Digital Poland Project Centre (DPPC), the Ministry of Development, Labour and Technology (MDL&T), as well as municipal governments. This means that expenditure in this area is financed from many sources. This is one of the main reasons why, according to



SAO, it is necessary to appoint one entity to coordinate the activities of all institutions involved in this process that will be responsible for coordinating, monitoring and supporting other entities in the field of improving the digital competences of the society.

In the field of digital education of society, various initiatives are undertaken within the available resources and programs. Among them are workshops, courses and training in the field of computer operation organised at the level of municipalities. A large number of training courses are aimed at seniors. Educational activities are undertaken by educational institutions, as well as libraries, cultural centres, social welfare centres and non-governmental organisations.

In the area of strengthening citizens' digital skills, action is taken based on the needs of the changing world. In 2015, the "Framework catalogue of digital competences" was developed, the authors of which sought to link digital competences with specific benefits that users can obtain in particular areas of life. This catalogue sets out 3 levels of competence, enabling the achievement of concrete actions and benefits through the use of digital technologies:

- a) digital competence – includes information competences consisting of the ability to search for information, understand it, as well as the assessment of its reliability and usefulness and IT competences, which consist of the ability to use computers and other electronic devices, use the Internet and use various types of applications and software, and also create digital content,
- b) information competence – understood as a set of skills allowing the user to determine when information is needed and to search for, assess and use information from various sources,
- c) functional competence – based on IT and information competences, combining them in order to implement actions aimed at achieving benefits in key areas, such as: work and professional development, relations with relatives, realisation of interests, health, finance, religion and spiritual needs, everyday affairs, civic engagement.

This approach is important because of the needs of the changing labour market. In the Polish reality, this relationship is well understood. Attention is drawn to the close correlation between technological development and the demand for employee competences and qualifications: “modern, but above all, future work is and will increasingly be dependent on the achievements of technology and technological solutions derived from it. The pace of change in this area creates the need for constant learning. The competences acquired at school, at university (formal education) are no longer sufficient, they should be skilfully supplemented and improved in various types of postgraduate studies, specialist courses, practical training and workshops on a non-formal basis” and “the latest technologies have an impact on rapid changes in the labour market. New functions and tasks of computers and telecommunications technologies affect changes in the structure of the market and social relations (...) new professions that were not known a few years ago arise. In every field of the economy and in almost the majority of professions, digital competences are of key importance. Many professional tasks force employees to be able to search for, select and process information. The level of these competences depends on the innovation of companies, their competitiveness, as well as their efficiency. That is why many employers are looking for employees who fully understand the need for functioning in the technical world and efficiently use the tools of new technologies. Thanks to the Internet, barriers to the creation of new companies are overcome, and many professions that can be performed remotely are created. Many industries are evolving, including marketing and medical services. In the face of the above considerations, digital competences are of key importance. The development of digital competences is important not only in the perspective of the continuous development



of new technologies, but also in the possibility of using them in various areas of life, in order to cope more effectively with various types of challenges. Digital technologies permeate - or rather it should be said: they can permeate - every aspect of our lives, often allowing for faster, more convenient and cheaper handling of everyday tasks: from shopping, through arranging a social meeting, professional work, to studying and paying bills. Technology literacy is also becoming increasingly important as this factor is now becoming a new dimension of digital exclusion".

Poland is a country in which advanced digitalisation and technology forces changes in the approach to education of children, young people and adults, in terms of professional preparation and social functioning. The dynamic development of modern technologies, which have an almost unlimited potential for change, e-services present in virtually every area of life, including in education, trade, public administration and communication, force their users, whether children, young people or adults, to continuously learn and constantly acquire and develop new competences. Under the influence of technological changes, the conditions in the labour market change. And not only in the scope of competences and qualifications required from employees (e.g. in terms of operating machinery, equipment, processes, media, etc.), but also in the area of professions themselves. At a very fast pace, some professions are disappearing, and in their place new ones are being created. This forces employees to be able to adapt quickly to change and reinvent themselves, which requires constant learning of new things. Such rapid dynamics is also problematic in terms of the professional preparation of children and young people, who will soon work in professions that are not currently in existence. Therefore, they need to be prepared to face the "unknown", not just to learn specific competences and qualifications.

c) Summary

In this chapter, the topic of digital competences in the context of technological changes in Italy, Romania and Poland was analysed. Of these 3 countries, Romania is in the most difficult situation in terms of digitalisation. The country is struggling with a very high digital lag in public administration (lack of ability to deal with matters electronically and the qualifications of officials), as well as a low degree of digitalisation in the SME sector. The situation is particularly unfavourable as the need for digitalisation and digital literacy is poorly understood in society. In order to change this situation, digitalisation strategies are being developed at the government level, based on which educational activities are undertaken along with actions to disseminate access and skills in the field of modern technologies.

In Italy, problems related to digitalisation are particularly visible among public administration staff. The digital competences of employees of this sector are low and do not match the challenges of modern reality. In the enterprise sector, the biggest risks are seen in the growing competence gap, i.e. the increasing demand for employees with high digital skills, as well as automation and technology processes that eliminate manual work. In response to the needs of the changing world, programs and actions are being implemented to disseminate digital skills in Italian society.

In Poland, the main problem in the area of digital change is the lack of coordination of actions and refined systemic solutions. Nevertheless, a number of initiatives are being taken at all decision-making and social levels to improve the digital competences of the society and to close the gaps that still exist in the availability of networks and digital solutions. This is particularly important due to dynamic changes, especially in the labour market, where the phenomenon of progressive automation is visible along with the



disappearance of certain professions and the emergence of previously non-existent ones, which is occurring very quickly. A large part of the workforce is not keeping up with these changes.

The actions taken in all of the countries to increase the level of digital literacy must be continued and developed, as they are essential in the modern world. According to the European Commission, nine out of ten occupations will soon require technological skills. Digital skills are currently being assessed in public competitions and in recruitment at private companies, which is a sign that it is time to update skills and learn how to work digitally. This is what will be demanded in the world of work, which is increasingly struggling to find ICT professionals and people with basic digital skills, from data analysis to cloud work, from digital content creation to IT security and problem solving. Digitalisation is entering all areas of life, not allowing us to continue with existing solutions. The dynamic development of modern technologies, which have unlimited potential for change, forces their users, whether children, young people or adults, to continually learn and constantly acquire and develop new competences.

According to the European Commission, advanced technologies that will be crucial in the coming years and which will bring great changes in various areas, from the world of work to the world of school, are:

- 1) Cloud and Edge Computing, two key technologies for Europe's digital future. There are two parallel but different ways of storing data and ensuring interoperability. The first implies the existence of data centres which centralise information, while the second provides for a series of devices connected to each other and linked to a central one;
- 2) Artificial intelligence is now present in many of the daily activities performed by a person, from browsing social media, to watching a film by streaming, to choosing a music play list. The AI algorithm reproduces human skills such as reasoning, learning (hence machine learning technology) and planning. For this reason, Europe believes in the deep regulation of this resource so that it is applied ethically and for the benefit of people;
- 3) Big Data is a particularly interesting area for the European Commission, as it aims to create a single data market in Europe that makes it accessible to the economy and society. The shared space for data and digital sovereignty not only contribute to global leadership, but also bring real benefits to every person's life. A data-driven approach would make significant progress in the areas of health, transport, public services and energy transition;
- 4) 5G is one of the most promising emerging technologies, as it practically provides ultra-broadband Internet access with very low latency, ideal for connecting people and things and for collecting and analysing data in real time. This technology is applicable in a variety of sectors ranging from professional, health, safety and Smart Cities;
- 5) Quantum and Photonics are two of the most discussed and innovative technologies in Europe. On the one hand, we have a quantum-accelerated computer capable of performing multiple calculations in parallel thanks to a quantum bit unit and computing power that can solve in a matter of minutes complex problems that would otherwise take years. On the other hand, a system capable of generalising and manipulating light particles, or photons. This enables the exponential acceleration of technological innovation on the continent, with practical applications in the worlds of surgery, lighting, personal computers and cars;
- 6) Robotics is a technology that Member States strongly believe in, especially because of its usefulness in such complex areas as manufacturing, search and rescue, surgery and healthcare. For these reasons, in support of the European Machinery Directive of 2006, Europe is working on the final



robotics strategy within the Digital Decade. This initiative will achieve real governance in the adoption of this technology and launch strategic partnerships between the public and private sectors;

- 7) The “Internet of Things” is an extension of the benefits of the Internet to things. This allows us to connect a person with the tools they use, with the ability to interact with technological devices in a fast and personalised way.
- 8) This means that the digital future of Europe is before us and it is now essential to acquire the digital skills necessary to actively participate in society.

4. Opportunities for synergies between ICT and adult education.

a) Information and Communication Technologies in adult education

Information and communication technologies (ICT) play a very important role in adult education today. The EU has set common objectives in this area, in particular through the *New European Agenda for Adult Learning 2030*, addressing issues such as active citizenship, integration and social inclusion and the development of transversal skills. The term information and communication technologies refers to a set of technological achievements (such as digitalisation, broadband, fibre, satellite communications, wireless communications, etc.), which have evolved in recent decades and are constantly evolving, enabling the emergence of “new technologies” in devices and networks, as well as related utility programs. Due to their mass dissemination and the ability to process and transfer data, these technologies are attributed with the ability to profoundly change the ways of life, work environment, ways of learning, and everyday living space of the majority of the inhabitants of our planet. Since the 1990s, education and training systems have been at the centre of international and European debate, aimed at defining a kind of strategic relocation of schools and training in the context of economic, technological and cultural changes. Among the priority objectives that have emerged and have been pursued in a variety of ways in the European agreements and national implementation plans are: to give priority to primary education; to open the perspective of lifelong learning; to develop the decentralisation and autonomy of educational institutions; to launch pro-development reforms of personal skills programs; to develop new technologies as teaching resources and as distance learning tools for adults. These objectives can be summarised *in preparation for the European Information Society* as a means of combating unemployment. This has resulted in a number of actions at the educational and training level to guarantee everyone the right to initial training and lifelong learning. The policies resulting from these guidelines were mainly aimed at bringing education closer to the labour market, integrating new technologies into everyday teaching at all school levels and launching continuing training for adults. Therefore, in the “knowledge society”, the following are defined as actions to be implemented:

- growth and spread of a general culture that allows us to understand the meaning of things, to make decisions, to assess and, above all, to learn how to learn;
- promoting the development and acquisition of new knowledge through policies aimed at raising the standards of research and training;
- developing individuals’ attitudes toward work and activity through greater flexibility and mobility;
- growth and recognition of skills acquired at school and in learning pathways;
- investment in research into multimedia educational programs, useful for better and more cost-effective integration of new technologies in schools.



In order to meet the need to unify the meaning of the concept of digital competences and their components, the *Mapping Digital Competence* project was developed in 2013 as part of the European DIGCOMP project: *Towards a Conceptual Understanding*, which presented the results of a survey of twelve areas that identify the characteristics of a person described as digitally competent. A digitally competent person:

- 1) knows the basic principles (terminology, navigation, functionality) of digital devices and knows how to use a variety of them (e.g. desktop computers, laptops, tablets, smartphones). Has general computer skills (digitalisation, computer operation, entry into a new program) and understands the difference between hardware and software. Knows the meaning of terms commonly used in manuals for hardware, software installation and configuration. Is aware of the existence of several operating systems;
- 2) is able to integrate information and communication technologies with the activities of everyday life. In particular, can download and access various types of information on the Internet; use applications to edit and create content (text, numbers, icons). Is able to search, collect, process, assess, share, store data and information using various devices, applications, cloud services. Can carry out various types of on-line transactions. Can use digital resources as routine resources (news, health, sports, travel, entertainment, etc.);
- 3) is able to use ICT to improve the quality of their professional activities or, at a higher level, to master the specialised digital skills needed in their field of work. Can create representations of knowledge (using maps and diagrams, for example) and use different ways of communicating to express themselves creatively (text, images, audio, and videos). Is able to modify existing content, transforming it into a new product;
- 4) is able to effectively connect, share, communicate and collaborate with others in digital environments. In particular, is able to use ICT for group work (cooperation, content co-creation) and for remote work. Can communicate via email, instant messaging, video conferencing, etc. Can use social media and participatory technology and knows how to use digital media to be part of a community. Is able to reap the benefits of digital technology in terms of both collaboration and networking, and learning for both personal and professional purposes;
- 5) uses technology to improve their ability to collect, organise, analyse and assess the usefulness and purpose of digital information. Can assess the relevance of content on the Internet, find relevant materials and assess what can be considered reliable. Can integrate information, combine different types of information, compare it with information from different sources (triangulation of information) before using it in a cognitive process. Is able to put in order, classify and organise information/digital content according to a scheme;
- 6) has the ability to protect personal data and take appropriate security measures. Understands the risks associated with using the Internet and meeting strangers. Is aware of privacy issues related to Internet/mobile Internet use and is able to act prudently. Can protect oneself against threats from the digital world (fraud, malware, viruses, etc.), understands the risk of identity and authentication theft, and is able to take action to reduce these threats. Knows that many interactive services use the information provided to filter commercial communications in a more or less unambiguous way;
- 7) acts appropriately and socially responsibly, demonstrating knowledge and awareness of the principles and ethical aspects related to the use of information and communication technologies and



digital content. In particular, is able to communicate and collaborate on-line with others by adopting a code of conduct appropriate to the context. Takes into account the provisions and ethical principles relating to the use and publication of information. Understands copyright and licensing rules and knows that there are different ways to distribute work and different licenses to protect intellectual property and copyright transfer; understands the differences between copyright use, public domain licenses, copyleft and/or Creative Commons licenses;

- 8) shows a balanced (positive but realistic) attitude toward the benefits and risks of information technology. Informs, explores and exploits the opportunities offered, treating digital media as facilitators rather than inhibitions, and sees them as tools that should serve to improve people's lives (not vice versa). Is able to assess and reduce/avoid technological risks affecting health;
- 9) covers the wider context of the use and development of information and communication technologies, their role in everyday life, society and work in an age characterised by globalisation and networks. Is aware of general trends in new media, even if they do not use them. Realises that there are production companies behind the technologies, there are developers, and there are also goals. Is aware of the environmental problems associated with their use;
- 10) actively and continuously explores emerging technologies, adapts to them, integrates them with their environment and uses them for lifelong learning (formal or informal). Can use ICT resources to safely expand their knowledge and connect with the world around them. Is able to learn to work with any new digital technology they come across, but also draw on their own internal resources;
- 11) is aware of which technologies are most appropriate and common and is able to choose the most appropriate according to a purpose or need. Is able to use digital services without being completely dependent on them;
- 12) uses digital technologies with knowledge and creativity to increase personal and professional effectiveness and efficiency. Can use a variety of information and communication technologies to achieve better results, faster or easier. Is able to use the most efficient and economical digital equipment. Is able to solve a theoretical or practical, individual or collective, problem using digital tools.

The development of digital competences and lifelong learning is part of the right to education, training and lifelong learning enshrined in the European Pillar of Social Rights (principle 1). In line with the overarching objective of the Action Plan on the European Pillar of Social Rights by 2030, 60% of adults are expected to attend training every year. Too few people in Europe regularly undergo training after completing their initial education. Actions and initiatives at the European level support the efforts of national institutions and individuals to increase the participation of adults in learning and training activities. Their aim is to better respond to the challenges of adult education and to support the exchange of knowledge and experience between countries. The resolution adopted by the Council of the European Union on 29 November 2021 titled "Council Resolution on a new European agenda for adult learning 2021-2030" underlines the need to significantly increase the participation of adults in formal, non-formal and informal education.

The new European Agenda on Adult Learning sets out how adult learning should develop in Europe by 2030 in the following five priority areas:

- a) managing adult education with a strong focus on national strategies covering all administration and cooperation between stakeholders;



- b) ensuring and participating in lifelong learning opportunities with sustainable funding;
- c) availability and flexibility to adapt to the needs of adults;
- d) quality, equity, inclusion and successful adult learning outcomes, with emphasis on the professional development of adult learning providers, mobility of learners and staff, quality assurance and active support of disadvantaged groups;
- e) environmental and digital transformations and the related competence needs.

- **Italy**

The latest educational and didactic research increasingly indicates that the use of ICT in education systems promotes the improvement of the learning process. The Internet can also facilitate the integration of ICT in the design and implementation of educational activities and pathways. In fact, for just over a decade, the rapid development of the network has forced the integration of ICT solutions into education systems. Practical experience shows that the applications of IT tools range from treating them as work tools (for example, using a personal computer to write, rewrite, and interact with the knowledge system) to exploiting the great opportunities for social interaction (chat, forum, blog, etc.) that they bring. Unfortunately, in educational practices, the use of information and communication technologies is still too often reduced to a carrier of information. However, in order to fully exploit the potential, it is necessary that new technologies are selected critically. This means that the teacher and trainer must be able not only to critically choose the appropriate tool (in this case in terms of hardware and software), but also to decide how and when to use new technologies without allowing them to dictate the educational practice. New technologies can be used as tools to activate experiences that connect the subject to the world and stimulate the ability to express oneself and discover in an original, creative and understanding-oriented way. All this imposes a high level of complexity in the relationship between ICT, the Internet and pedagogical practice.

Integrating the use of ICT and networks into education and training systems requires a rethink of the "education of tomorrow". First, this integration requires the adoption of the idea of open and flexible learning. ICT opens up many opportunities in this regard. The materials, experiences, information and communities on the Internet allow not only deepening of the disciplinary knowledge already acquired, but also experimentation with other forms, open and flexible, of learning related to the subjectivity and creativity of each participant of the educational process.

Moreover, it should not be forgotten that educational environments can also experiment with the paths and processes of production and transmission of culture through the use of information and communication technologies. Education and teaching must therefore activate strategies, methods and techniques that help students organise, develop and reflect on their own learning. It is therefore necessary to link information capacities (disciplinary and knowledge non-disciplinary and knowledge), knowledge capacities (knowledge exploration and contextualisation), communication and relational ICT capabilities and learning processes in new 'integrated' training environments.

In training projects where information and communication technologies play a central role, the ability to manage and control the processes of knowledge production, communication exchange and content acquisition is essential. New technologies also allow one to experience the social dimension of education, because they also present themselves as real communication environments, in which the media become perceptual and cognitive extensions of the human being. In terms of acquiring knowledge, new technologies



allow, in addition to the process of abstraction and interpretation of the content of operations on written texts, also a perceptual, multi-sensory and multilingual learning process through hypertexts and hypermedia on the web. These capabilities and features make information and communication technologies no longer just tools to communicate with or within the world, but real tools with which to activate a person's main cognitive, emotional and perceptual functions. Training and education must therefore play an important role both in promoting network access through all training organisations (institutional and non-institutional) and possible economic and structural support, and in creating and disseminating on-line knowledge through the creation of digital content.

The practice of educational work shows, however, that the situation in Italy falls far short of expectations. This is confirmed by the main national and international indicators related to the digital economy and society (such as DESI of the European Commission, OECD reports on eGovernment and Education).

The lack of digital skills also has a clear impact on people's employability. In the OECD *Skills Outlook Scoreboard*, which analyses digital skills for the economy of the future, Italy ranks at the bottom of the table. Of all these, the most concerning figure is for workers at high risk of automation, according to which only 20% take advantage of continuing training, while as many as 40% of workers in occupations with low risk of automation do not have access to further training courses.

In Italy, the "Digital Italy 2026" strategy, approved in March 2021, set ambitious targets, in line with the objectives of the European Digital Compass 2023, but with shorter deadlines. The plan, developed thanks to funding from PNRR, assumes the provision of ultra-broadband connectivity throughout the country by 2026, accelerating the digitalisation and uptake of digital services and public platforms, accelerating the digitalisation of public health and its unification in the territory, increasing the level of cyber-security in the country and influencing citizens' digital skills. At the same time, it is planned to relaunch Italy's presence in space and start strengthening the country with strategic technologies for the future.

Digital public services must be socially inclusive and accessible to all, without discrimination or any form of gap. Having the necessary digital skills is essential in order for citizens to be able to fully enjoy their rights. In the ongoing digital transformation, no one should be left behind.

- **Romania**

In 2019, Romania's population aged 16 to 74 with basic digital skills was 31% compared to the European average of 58%. Romania and Bulgaria (29% in 2019), rank last in terms of household access to ICT and the Internet. Data from 2020 show that more than 78.2% have access to the Internet from home, with a significant difference between urban and rural areas (84.8% in urban areas and 69.7% in rural areas). In 2020, during the COVID-19 pandemic, significant shortcomings were identified, such as insufficient internet access coverage; insufficient digital skills among learners and trainers; insufficient hardware devices; lack of on-line platforms and educational resources. Romania's situation is unfavourable compared to other European countries, which have invested heavily in digitalisation in recent years. Therefore, through various projects, Romania is trying to align itself with *the European Union Digital Education Action Plan for 2021-2027* and in particular in the field of digital education. The main challenge is the use of a wide and growing range of digital technologies, aimed at acquiring the digital skills necessary for citizens to live and work in a world where digitalisation is becoming more and more widespread.



In the European context, Romania needs a framework that will guide reforms toward a resilient and high-quality education system that is in line with today's needs and generational change and is able to respond to the challenges of the future. Digitalisation, the capitalisation of technological development, innovation, the flexibility of training pathways and the skills to respond to labour market changes are just some of the areas that need urgent action. Education in Romania must overcome numerous barriers and integrate with other education systems, becoming globally competitive. The response to these needs is the project "Educated Romania", which will enable the values in the field of education to be balanced. In fact, this project proposes a fair educational system characterised by honesty, ethics and professionalism, which therefore ensures and respects the rights of all students to a high quality education. This system guarantees a good state for all those involved, learners and educators, creating an environment of mutual respect, in which the protection and affirmation of human dignity is a priority. The formal education system needs to be flexible to respond to the different needs of the people involved while supporting excellence in learning and teaching. This requires the cooperation of all actors in the sector and transparency of the institutions. Structurally, the project was conceived as a whole, in which the adopted values are grouped and systematised in ten objectives, for which priority directions of education are elaborated and developed. These are:

- 1) Work and career.
- 2) Management and education system management.
- 3) Financing the education system.
- 4) Infrastructure of the education system.
- 5) Teaching based on competence.
- 6) High quality inclusive education for all students.
- 7) Functional literature.
- 8) Promoting STEAM Education.
- 9) Digitalisation.
- 10) Resilience.

The project aims to modernise the Romanian education system, bring it closer to European solutions and integrate ICT into education.

• Poland

According to data from the population survey of the Study of Human Capital from 2022/2021 (BKL 2021), the level of educational activity of adult Poles is high. According to the data obtained, 83% of people aged 25-64 are developing their competences, of which 71% in an informal way, and 50% of them use the Internet for this purpose, 36% in a non-formal way, and 29% in the workplace (coaching, mentoring, observation). The presented data show that the most popular form of learning is informal education, including the use of the Internet. The report further points out that independent use of the Internet for development purposes is by far the dominant way of learning, especially among young people, but it is also systematically spreading among older people. Non-formal education clearly shows an increase in participation in remote training, while the use of in-person training is declining. The data indicate that on-line training has replaced some of the training courses that have so far been carried out on an in-person basis. This applies both to work-related training, as well as hobby or general development training.



The results of the Human Capital Balance study in relation to adult education of Poles are optimistic, because they show a high level of understanding of the need for continuing education (according to the idea of Lifelong Learning) in order to respond to the needs of the changing world. In addition, thanks to education and constant development, learners also develop a range of so-called general competences, which have been included among the basic learning outcomes, but also as the so-called competences of the future (non-professional). These include:

- ability to analyse factors affecting the variability of our surroundings – in the sphere of culture, science and education (orientation in the world) – and ability to design and take appropriate actions,
- knowledge of philosophical trends and – their derivatives – value systems and conduct in accordance with one's own value system.

In turn, these skills are based on competences: language, socio-civic, natural, self-knowledge, self-education and interpersonal communication.

Changes in the Polish approach to adult education resulting from the development of information and communication technologies and the dissemination of digitalisation have been noticed and articulated already more than a decade ago. The brochure of the Centre for Education Development, published in 2011, noted that: in the age of ubiquitous modern information and communication technologies (ICT), they should not be lacking in the adult education process. The presence of digital technologies and the fact that they remove barriers to access to information, time and space has completely transformed the nature of a teacher's work. The digitalisation of education has made the educator move to the role of a learner's companion, guide and mentor, indicating possible and available directions of development, opportunities and sources of acquiring knowledge. The acquisition of knowledge is left to the discretion of the student who has the motivation for it. The flow of information is no longer one-way, only *from teacher to student*. There is now a process of bilateral exchange of knowledge and experience. Including from *student to teacher*. This is due to the huge, almost unlimited access to knowledge and information, the amount of which is beyond the reach of one person, even an outstanding specialist in a given field. Therefore, the process of teaching adults in the digital reality takes place bilaterally, and the role of the teacher is also to skilfully use the knowledge and experiences of the student in the process of his education and indicate the benefits and possibilities of using them. The development of ICT tools and the progressive digitalisation of all areas of life have created a new trend in adult education. Today, informal education is very popular. In this form of education, knowledge and competences are acquired without the use of programs offered by various educational and training entities, and thus without the participation of a teacher or trainer. The form of this education is also incidental education, implemented in an unplanned way, where the acquisition of competences takes place *incidentally*, for example, while doing other things for which these skills are needed.

In this way, adult learning is completely detached from the teacher and is based on ICT. It is the development of modern technologies that popularised this type of opportunities and forms of education. The methods of acquiring knowledge via the Internet and modern technologies based on it include popular social networking sites such as Facebook, YouTube and Twitter, as well as various educational platforms, vortals, specialised discussion forums or by running or regularly reading author's blogs. Recent years, especially marked by the COVID-19 pandemic, have significantly expanded the range of educational opportunities and tools being used. Webinars, live, podcasts, on-line courses, educational applications and tutorials, as well as instant messengers enabling direct meetings have gained popularity, for example, Zoom,



Google Meet, Teams, etc. and related collaborative tools (e.g. Jamboard in the Google space). Digital expansion in the field of adult education led to the emergence of modern forms of education, such as e-learning (based on the use of information technology), m-learning (based on the use of mobile technologies in the educational process) and blended learning (mixed education). This last form of education turns out to be one of the most effective solutions. Intelligent e-learning systems are increasingly being used, i.e. systems developed using tools that allow didactic content to be adapted in an automated way, taking into account both the learning path planned by the teacher and the actual learning progress of the learner. This is by no means the end of the development of this direction. The next step may be a complete transformation toward the use of augmented reality in education (i.e. a system connecting the real world with a computer generated one).

The educational opportunities of adults are extended by the offer of free educational services, in the form of e.g. on-line courses. Examples of Polish solutions include:

- on-line courses prepared by Polish scholars, made available by Copernicus College, for anyone interested,
- a library of about 94 free e-learning courses, including those developed for mobile devices, about business topics, made available by the Polish Agency for Enterprise Development, intended mainly for entrepreneurs from the SME sector,
- an e-learning educational project for adults, called the NFZ Academy, addressed to all people who are closely connected to the area of health care. In addition to e-learning training concerning, among others, preventative healthcare, the rights and obligations of patients, the portal also provides videos, mobile applications, games and quizzes,
- Electronic Platform for Adult Learning in Europe – EPALE. Its task is to integrate the environment related to adult education. The platform regularly publishes various studies on adult education, as well as a blog devoted to the latest trends in this sector. In Poland, the activities carried out within platform are coordinated by the Foundation for the Development of the Education System.

The catalyst that significantly accelerated the use of information and communication technologies in all areas of life, and especially in education, was the outbreak of the COVID-19 pandemic. Out of necessity, i.e. due to the introduction of practically worldwide restrictions on people-to-people contacts (e.g. restrictions on meetings, travel, work, classes in schools and universities etc.), it was necessary to transfer all possible spheres of life to the network. For this reason, the on-line education sector, both formal and informal, has developed dynamically. The dynamics of the situation meant that even people who had not used the network very actively for professional or educational purposes were forced to change their habits and behaviours. Direct contact tools, such as Zoom, Teams and Google Meet, gained popularity, which allowed classes to be conducted in real time. Educational materials were created in the form of podcasts, YouTube videos, webinars, interactive presentations, etc., which users could access at any time. The pandemic significantly accelerated the digital revolution in education. Solutions developed during its duration have permanently entered the training and educational offer. As a result, training and educational institutions, in order to meet the expectations of clients, now offer training, courses, studies or postgraduate studies in hybrid form or in alternative options, i.e. either in an in-person form or in on-line form (data on the basis of university offers and the Development Services Database). These processes have resulted in two very important changes, i.e.: a change in the perception of part-time education, which could previously be seen in Poland in the areas of didactic experiments or niche forms of supplementing traditional forms of education;



as well as a change in teacher-learner relations, with an activation and increase of the independence of adult learners and a shift of student-teacher relations toward tutoring.

b) Summary

The digital world has opened the door to many fields so widely that education, including for adults, is literally within reach. All it takes is motivation and the desire to look for the best solutions for oneself to be able to constantly develop and improve one's competences. At present, it is even a requirement of effective functioning in a dynamically changing world. Changes taking place in the sphere of information, technology and, above all, the labour market, force adults to constantly develop. For this purpose, a variety of forms and tools of education, including remote and hybrid learning, are used, among others, through on-line courses, educational platforms, podcasts, live, social media, etc. In this way, education is within reach and is not directly related to the person of the teacher in the traditional sense of their role.

The presented information shows that the situation regarding the use of information and communication technologies in education, especially adult education, is best presented in Poland, where various tools and teaching techniques based on digital tools are widely used. Italy is at the stage of intensive implementation of new ICT-based educational solutions. The strategies and projects developed in this area are being successively implemented and developed. Romania is at the start of the path to introducing ICT solutions in education and its modernisation.

The actions taken by these countries are part of the European approach, which was expressed in the strategy papers. These documents include the second Digital Agenda for Europe (2020-2030), which focuses on the profound changes brought about by digital technologies, the fundamental role of digital services and markets, and the new technological and geopolitical ambitions of the European Union. In addition, on March 9, 2021, the European Union proposed the so-called "Digital Dream", which includes four digital goals to be achieved by 2030:

- 1) Competences: at least 80% of adults should have basic digital skills and there should be 20 million ICT professionals in the EU, with an increase in the participation of women in the sector;
- 2) Companies: 75% of companies should use Cloud Computing, Big Data and artificial intelligence services; more than 90% of small and medium-sized enterprises in the EU should reach at least a basic level of digital intensity; the number of such enterprises in Europe is expected to double;
- 3) Infrastructure: all European households should be covered by the Gigabit network, and all inhabited areas by 5G; state-of-the-art and sustainable semiconductor production in Europe should account for 20% of the value of global production; climate-neutral and highly secure peripheral hubs should be installed in the European Union, and Europe should have its first quantum computer;
- 4) Public services: all key public services should be available on-line; all citizens will have access to their electronic medical records and 80% of citizens should be using electronic identity solutions.

The European Union is promoting the development of a high-performance European digital education ecosystem and seeks to improve citizens' competences and skills for the digital transformation. Digital skills and competences are essential to ensure that every person has equal opportunities to develop their lives, find employment and be an engaged citizen.

The European Commission addresses these issues through its flagship policy initiative in this area: The Digital Education Action Plan (2021-2027), which we will soon address, together with specific actions that play a key role, namely:



- The SELFIE tool as a reflection on effective learning by promoting the use of innovative educational technologies.
- The SELFIE for TEACHERS tool supporting teachers' digital competences and improving the learning process in the digital age.
- Cooperation with the European Investment Bank (EIB), for example through the InvestEU Program, to enable Member States to access digital and physical infrastructure funding and to support the development of innovative skills and pedagogy.
- The Erasmus+ and European Solidarity Corps programs for the period 2021-2027 have become greener and more digital.
- The Recovery and Resilience Facility supports Member States in meeting their digital education needs after the COVID-19 pandemic.
- The European Social Fund promotes the development of digital skills as a tool to ensure better and fairer employment opportunities for European citizens.
- The new "Digital Europe" (DIGITAL) program focuses in particular on the development of advanced digital skills.

Although the Treaties do not contain specific provisions on information and communication technologies (ICT), the European Union can take appropriate action in the framework of sectoral and horizontal policies such as: industrial policy (Art. 173 of the Treaty on European Union Integration (TEUI)); competition policy (Art. 101-109 TEUI); trade policy (Art. 206 and 207 TEUI); trans-European networks (TEN) (Art. 170-172 TEUI); research and technological development and space (Art. 179 and 190 TEUI); energy policy (Art. 194 TEUI); bringing together provisions to improve the creation and functioning of the internal market (Art. 114 TEUI); free movement of goods (Art. 26 and 28-37 TEUI); free movement of persons, services and capital (Art. 45 and 66 TEUI); education, vocational training, youth and sport (Art. 165 and 166 TEUI); and culture (Art. 167 TEUI).

A working group on the strategic framework of the European Education Area "Digital Education: Learning, Training and Assessment (DELTA)" was also set up to encourage mutual learning and the exchange of information and best practices between Member States.

The development and dissemination of information and communication technologies have led to a real technological revolution, which has also become established at the global level. This *revolution* enables access to infinite resources and information on the Internet, as well as reducing the cost of communication (via networks, mobile or satellite telephony, etc.). This leads to a completely new cultural transformation compared to those that took place in the past.

Main conclusions

The report gathers the most important conclusions from the analysis of adult education in Italy, Romania and Poland in the following areas, i.e.: the area of legal conditions, ordinances and guidelines on adult education; provisions and guidelines on certification of competences; ordinances and directives on the digitalisation of skills and opportunities for synergies between ICT and adult education.

1) Legal conditions, ordinances and guidelines for adult education in Italy, Romania and Poland.

Adult education, in line with the EU approach, includes a set of formal and informal learning activities, both general and professional, undertaken by adults after completion of initial education and training.



Adult education regulations in all 3 countries, i.e. Italy, Romania and Poland, are based on European Union recommendations documented in resolutions and directives, which. The most important of these are:

- *Resolution of 20 November 2011 on the renewed Agenda for Adult Learning (EALL)*, which has taken steps to recognise this area as a key part of lifelong learning along with numerous initiatives to this end,
- Recommendations of the Council "*Upskilling Pathways*" of 2016 on upskilling pathways, which are considered the most important piece of legislation recently issued by the European Union in the field of adult learning policy,
- The *Resolution of 17 December 2021* defining a new approach to adult education and training through a new European Agenda for Adult Learning 2021-2030 (NEAALL).

An analysis of the Italian tradition of adult education has shown that this idea is relatively young in Italy. Its origins date back to the post-war period, i.e. the 1940s.

So far, according to Eurostat data, the proportion of adults in Italy without second-level secondary education is high and participation in adult learning is low.

The educational offer for adults in Italy is based on two pillars: CPIA (Territorial centres for adult education) and secondary schools offering courses for adults (formerly called evening schools) belonging to MIUR (Ministry of Education). Secondary schools offering courses for adults are part of the CPIA and allow adults to obtain a diploma or professional qualification.

A large part of educational activities in Italy are aimed at counteracting illiteracy and supplementing secondary education.

The main actors involved in the adult education system in Italy: the school system; regional vocational training system; employment services system; civic networks linked to educational initiatives; businesses; cultural and voluntary associations; universities and the entire infrastructure used for cultural activities (museums, libraries, etc.).

The beginnings of the Romanian traditions of adult education date back to the 1920s and 30s. Since then, the concept of social pedagogy has been developed and implemented in rural areas of Romania. At that time, social pedagogy was addressed to various categories of people, including rural residents, disadvantaged people, women and young people.

Under Romanian conditions, vocational training for adults, supplemented by educational or university degrees having national recognition and/or certificates of professional competence, is an activity of general interest within the national system of vocational education and training.

Currently, in Romania, the Ministry of Education, Research, Youth and Sport supports the organisation of "Second chance" educational programs. This program is designed to correct the phenomenon of early school leaving among children, youth and adults who left school before completing compulsory schooling. Participation in this program is the only way for young people or adults who have left school early to obtain a nationally accepted certificate.

The Romanian National Employment Agency (ANOFM) offers free vocational training for adults. Most of these courses require basic reading skills and basic mathematics skills, as well as a certificate confirming that participants have attended school and already possess these skills. Several non-governmental organisations also offer paths for adults, during which they teach reading, writing and mathematics skills.



Polish traditions of adult education date back to the 16th century, when it was first written that “human learning lasts a lifetime”.

In Poland, there is practically no problem of illiteracy (according to data from 2003, the percentage of people unable to read and write was 0.2%). Early school leaving and start of work is also a marginal phenomenon. Compulsory education, to which children and young people are subject up to the age of 18, is enforced so that at least basic education (lower secondary school education during the period of existence of this level of education) is held by almost the whole society. The acquisition of professional qualifications takes place in an extensive system of vocational, secondary and higher education.

As a result, the area of adult education, as an integration and inclusive or compensatory activity, was practically non-functional in Poland. In the absence of clear needs for centralisation, adult education has remained in the background when it comes to legislative solutions.

The area of adult education is not strictly covered by the ordinances and regulations of government agencies, e.g. the Ministry of Education. Therefore, its organisation is not the responsibility of government or local authorities. The adult education sector operates entirely on free-market principles. This means that the educational and training offer is a direct response to the needs raised by the market – both by employers, business surrounding institutions, organisations operating locally and regionally, as well as by the interested parties themselves. Entities providing education and training services come from both the public and private spheres and they are: public and private schools for adults, industry second-level schools, post-secondary schools providing vocational training, public and private continuing education institutions, vocational training centres, universities, other educational entities, employers, employees, civic organisations, other entities cooperating with each other and remaining entities.

2) Provisions and guidelines on certification of competences in Italy, Romania and Poland

At the EU level, 8 key areas of competence have been identified, which are: competence in understanding and creating information; competence in multilingualism; mathematical competence and competences in life sciences, technology and engineering; digital competence; personal, social and learning skills; civic competence; entrepreneurial competence; competence in cultural awareness and expression.

The acquisition and development of key competences is currently one of the most important areas of Community intervention. Our competences determine the social and economic development of individual societies and countries and shape the future.

Certification of competences is a system aimed at improving and recognising skills and knowledge acquired by a person during their work, training and life experience through a path of reconstruction and assessment of those experiences.

The Italian skills certification system has been in place since 2012. The legal act that initiated its creation was Act 92/2012 on Labour Market Reform (the so-called Fornero Act) and its implementing ordinances of 2013. In January 2018, the National Qualifications Framework of 2015 entered into force, defining a common set of descriptors and identifying what kind of knowledge, skills and elements of autonomy/responsibility can be attributed to each level. To this was added the inter-departmental ordinance of 5 January 2021, which defines the *Guidelines* for the effective functioning of the system. Assessment of skills is an integral part of every educational path, including those offered by CPIA.

In Italy there are so-called "Territorial networks for lifelong learning" forming the basis of the lifelong learning system. They provide:



- formal, non-formal and informal learning pathways;
- recognition of training points;
- certification of the knowledge acquired in each case;
- use of counselling services throughout life.

The public entity for the creation of territorial lifelong learning networks is CPIA, the Territorial Centre for Adult Education, as the Territorial Service Network of the Education System.

In Romania, vocational training for adults, supplemented by educational qualifications or academic degrees with national recognition and/or certificates of professional qualifications, is a public service activity incorporated into the national vocational education and training system and is subject to the provisions of Article 192 of the Labour Code.

Vocational training provides the necessary preparation for the acquisition of the minimum professional skills needed to obtain a job and for the development and certification of those already acquired by means other than formal ones.

Professional skills are acquired in formal, non-formal or informal modes:

- the formal path means completion of a program organised by a vocational training institution;
- the non-formal mode means the performance of specific activities directly at the workplace or as part of self-study;
- the informal path means non-institutionalised, unstructured and unplanned methods of vocational training – non-systematic contact with various sources in the socio-educational, family, social or professional areas.

In Romania, there is a legal framework for the validation of non-formal and informal learning, as regards professional competences.

Non-formal education in Romania is mainly conducted by educational institutions and the Education Centre, public and private institutions, governmental and non-governmental organisations, employee training programs organised by employers and cultural institutions. The certificates that can be obtained are certificates of professional qualifications and certificates of completion. Assessment methods include self-assessment, direct observation, oral examination, written test, design-based assessment, simulation or structured observation, reporting or assessment by others.

The general framework for the achievement of continuing vocational training and the development of qualifications necessary to support a competitive national human resource capable of functioning effectively in modern society and in the knowledge community is provided by the National Securities Administration (NSA). This is a specialised public body with legal personality under the Ministry of Education and Research (Resolution No 556/2011 on the organisation, structure and operation of the Romanian National Qualifications Authority).

The National Securities Supervisory Authority (ANCS) prints and manages certificates of professional competence through authorised centres. Certificates of professional competence are recognised at national level and are subject to the conditions of study documents. The qualifications of the national pre-university education system are official state documents, of particular importance, which certify possession of a qualification, with or without a diploma/final examination. The Certificate of Professional Competence is equivalent to the Certificate of Professional Qualifications, the only difference between them is the way they are obtained. The Certificate of Professional Skills is obtained through Assessment and is aimed as a service



for working people. The Certificate of Professional Qualifications is obtained as a result of many years of participation in a course and is addressed to people who want to learn a profession from scratch. Recognition of qualifications is not practised in the commercial sector.

In Poland, a comprehensive system of confirming adults' qualifications has been in force for about 10 years. Work on its introduction began in 2013 with the development of legal grounds, based on the document titled "Lifelong learning perspective" (annex to Resolution No. 160/2013 of the Council of Ministers of 10 September 2013). Then the creation of the *Integrated Qualifications System (IQS)* was begun. This system operates on the basis of the provisions of the "Act on Integrated Qualifications System of 22 December 2015 (Journal of Laws 2016 item 64 as amended)", which entered into force on 15 January 2016. In accordance with the provisions of the Act, the IQS ensures:

- 1) the quality of the qualifications awarded;
- 2) the possibility of recognition of learning outcomes obtained in non-formal education and through informal learning;
- 3) the possibility of the gradual accumulation of achievements and recognition of achievements;
- 4) access to information about qualifications that can be obtained in the territory of the Republic of Poland;
- 5) the possibility of comparing qualifications obtained in the territory of the Republic of Poland with qualifications awarded in other Member States of the European Union.

In accordance with the intention of the creators, the purpose of the IQS is to increase the availability and higher quality of qualifications obtainable in Poland and, by assigning the qualifications covered by the IQS to the level of the Polish Qualifications Framework, mutual cross-reference of these qualifications and their reference to the European Qualifications Framework.

Currently, the IQS consists of four main elements, which are:

- a) Integrated Register of Qualifications – a public register gathering all of the qualifications functioning in the IQS. The register is intended to provide information on, among others, a full list of qualifications included in the system, their detailed descriptions, as well as requirements for candidates who want to certify possession of a given qualification.
- b) Validation – this is a process of formal certification of what a person knows or is able to do, regardless of the place/circumstances in which they have learned it – e.g. at school, in a course, at work or at home. A successful validation is completed by confirming possession of a professional certificate. Certifying authorities shall be responsible for the organisation of validation. What is important and worth emphasising is that a very large amount of work is aimed at disseminating a proper understanding of validation. A large part of society associates this primarily with examinations and testing. This approach is rooted in the so-called traditional model of education. However, validation within the meaning of an open approach to learning is, in addition to checking knowledge and skills, also the recognition of potential – what a person already knows and is able to do, but also an indication of what else they can strengthen in themselves. Validation consists of three steps:
 - identification – a stage in which one determines what a person already knows and is able to do, and what else they have to learn to get a qualification or plan their development in a different way. The stage may be conducted with the assistance of a validation advisor,



- documentation – the stage of collecting evidence (documents) that a person knows and is able to do what is necessary to obtain a certificate – and thus certification of the required learning outcomes,
- verification – the stage in which assessors (specialists in a given area) check whether the person has all the required learning outcomes. If the assessors confirm that they do, the certifying authority will award the qualification and issue the certificate.

In the validation process, an important role is played by feedback that describes the person's potential and areas of strengthening and development. Validation is a fee-based service and the amount of fees depends on the certifying authorities conducting the process.

- c) Certification bodies – institutions with the power to award specific market qualifications included in the IQS, that is, to issue professional certificates confirming the possession of qualifications. The database of institutions is open, and entities interested in acquiring the power to award qualifications can apply (submit applications).
- d) The Polish Qualifications Framework – all qualifications included in the IQS have a given level in the Polish Qualifications Framework, which describes the complexity of skills acquired within a given qualification. The PQF label is on each certificate issued within the framework of the IQS – both a professional certificate and, for example, a matriculation certificate. Polish Qualifications Framework - this is an eight-level framework structure that indicates how qualifications should be described. Each level is defined by general statements characterising the requirements of knowledge, skills and social competence that must be met by persons possessing a qualification of a given level. A unique solution used in Poland is the introduction, in addition to first degree characteristics (universal), of second degree characteristics (detailed). Universal and specific characteristics constitute a coherent whole.

3) Ordinances and directives on the digitalisation of skills in Italy, Romania and Poland

In the modern economy, digital competences are the engine of social progress, including for those at risk of marginalisation. This is one of the reasons why the European Union has taken several initiatives in the related area of "e-inclusion", a term that refers to actions aimed at creating an "information society for all". Digital competences first appeared in the new key competences framework for lifelong learning in the 2006 recommendation of the European Union Council and were subsequently taken up in 2018 as a transversal lifelong skill reflecting an understanding of digital knowledge, which goes beyond the strictly technical and procedural concepts characterising previous European approaches. In contrast to the mere conceptualisation of ICT (Information and Communication Technologies) skills, the updated concept now includes aspects such as critical assessment of on-line information or creative practices of digital content production.

The DigComp framework is an essential tool that has been developed by the European Union to meet the challenge of digital transformation by investing in our lives and jobs.

In Italy, the situation with regard to digital skills is not favourable. According to Eurostat data from 2019, only 42% of Italians aged 16 to 74 have at least basic digital skills (it is 58% in the EU), which has a significant impact on the use of digital services. Italy ranks last among European countries in terms of internet use – 17% of people aged 16 to 74 have never surfed the web (almost double the EU average of 9%). Data also indicate that only 1% of Italian graduates have ICT qualifications (the worst in the EU) and the percentage of



ICT professionals, although it has increased over time and reached 3.6% of total employment, is still far from the EU average (4.2%). The lack of digital skills is one of the main obstacles to Italy's development.

According to the Digital Economy and Society Index (DESI) 2020: "Italy is launching initiatives to strengthen digital skills and address digital inclusion. Intensifying and concentrating efforts would help to reduce the digital divide among the population and ensure that most citizens have at least basic digital skills. Another important step in this area would be a comprehensive approach to upskilling and retraining the workforce, including strengthening advanced digital skills." Actions are currently being taken in Italy to join the European Commission's Digital Skills and Jobs Platform to bridge the various social and cultural forms of the digital divide among the Italian population, promote digital inclusion and promote the development of new professional skills.

So far, the lack of a strategy has limited the implementation of digital transformation processes, therefore digital skills are a strategic priority and are developed within the framework of the 'Digital Republic' initiative, and the National Strategy is the result of a cooperation-based approach that has involved ministries, regions, provinces, municipalities, universities, research institutes, companies, professionals, associations and various public sector entities, apart from organisations belonging to the National Coalition.

According to DESI 2022, in terms of human capital, Romania is well below the European Union average. The country faces a lack of basic digital skills among its population. Less than a third of people aged 16-74 have basic digital skills (28% vs. 54% in the EU) and digital skills above basic (9% vs. 26% in the EU); 41% of people in Romania have basic digital content creation skills (below the European average of 66%). Although there has been a slight increase in the percentage of ICT professionals, they represent a much smaller proportion of the workforce than in the European Union as a whole (2.6% compared to the EU average of 4.5%). The number of companies offering ICT training to their employees is very low at 6% (EU average - 20%). Romania, on the other hand, performs very well in terms of the number of women ICT specialists, who represent 26% of all ICT specialists, and in terms of the number of ICT graduates, ranking first among EU Member States with 6.7% of all ICT graduates.

The overall picture of digitalisation and digital skills in Romania is unfavourable. According to the *Digital Economy and Society Index* (DESI) 2022, Romania ranks 27th out of the 27 member states of the European Union. Despite being a top-performing country in terms of connectivity, thanks to the high use of very fast broadband and the wide availability of very high-capacity fixed networks, especially in urban areas, Romania ranks 26th out of the 28 EU Member States in the Digital Economy and Society Index (DESI) for 2020.

In Romania, the digitalisation of the education and training system has been a priority topic since 2016, with the launch by the presidential administration of the national project "*Educated Romania*". In the years 2016-2018 the presidential administration conducted a wide public debate on education in Romania, starting from projections of the future and forecasting the challenges for modern society. Despite this fact, Romania does not have a national strategy to digitalise the education and training system. The European Commission's DESI report for Romania 2020 states that "the extent to which Romania has achieved the commitments set out in the Strategy (National Digital Agenda Strategy for Romania 2020) is unknown.

On October 26, 2020, the Ministry of Education and Research began the process of developing the "Strategy for the digitisation of education in Romania 2021-2027", called *SMART.Edu*, focusing on the key concept for a modern and accessible school, based on digital resources and technologies. The main



directions of action under this strategy are: accessibility; connectivity; community; digital education ecosystem; innovation; sustainable development.

The government strategy "Developing the SME sector and improving the business environment in Romania toward the digital economy in 2021-2027" includes transversal actions such as:

- developing networks of digital innovation hubs;
- enabling SMEs to acquire the skills necessary to use new technologies;
- helping SMEs to easily switch digital service providers and benefit from data portability, as required by the ordinance on the free movement of non-personal data;
- raising awareness of security threats among SMEs and stimulate investment in cyber-security.

In 2020, the *National Digital Agenda Strategy for Romania 2020 (SNADR)* was developed, which focuses on the need to digitalise public services. However, there is still no government-wide inventory of all public services made available to citizens and legal entities to assess and monitor the implementation of public policy.

According to European Commission data presented in the report on digital progress (EU DESI 2021), in terms of digital society human capital, Poland ranks 24th of 27 EU countries. The data collected for this report shows that in 2019, only 44% of citizens in Poland had basic digital skills, while the EU average was 56%. The EU average from 2019 is also the percentage of people with basic or above-basic digital skills in Poland assumed in Polish government programs at the end of 2022. In addition, national analyses of the situation in the area of digital competences have also shown the existence of other problems, including, despite a significant decrease in the number of digitally excluded people in 2019-2020, still about 13% of the total population of Poland is beyond the reach of the digital economy, i.e., for example, they do not make electronic transactions or purchases via the Internet. The analysis also showed that Poland has one of the lowest levels of employment of women in the ICT sector among the EU countries. The report prepared by the National Centre for Research and Development in 2020 showed, among other things, that Polish universities lack IT equipment, software and tools for on-line work, and that the needs of university staff in the field of digital skills are not defined.

This includes a document that was created in 2015: the "Framework catalogue of digital competences", the authors of which sought to link digital competences with specific benefits that users can obtain in particular areas of life. This catalogue sets out 3 levels of competence, enabling the achievement of concrete actions and benefits through the use of digital technologies:

- a) digital competence – includes information competences consisting of the ability to search for information, understand it, as well as the assessment of its reliability and usefulness and IT competences, which consist of the ability to use computers and other electronic devices, use the Internet and use various types of applications and software, and also create digital content,
- b) information competence – understood as a set of skills allowing the user to determine when information is needed and to search for, assess and use information from various sources,
- c) functional competence – based on IT and information competences, combining them in order to implement actions aimed at achieving benefits in key areas, such as: work and professional development, relationships with loved ones, realisation of interests, health, finances, religion and spiritual needs, daily affairs, civic engagement.



In order to improve the level of digitisation of the country and the level of digital skills at the government level, three programs have been developed to support the development of digital competences in society: “Integrated State Information Technology Program 2019-2022”, “IT Talent Development Program 2019-2029” and “Digital Competence Development Program 2030”.

4) Opportunities for synergies between ICT and adult education.

Information and communication technologies (ICT) play a very important role in adult education today. The EU has set common objectives in this area, in particular through the *New European Agenda for Adult Learning 2030*, addressing issues such as active citizenship, integration and social inclusion and the development of transversal skills.

The term *information and communication technologies* refers to a set of technological achievements (such as digitalisation, broadband, fibre, satellite communications, wireless communications, etc.), which have evolved in recent decades and are constantly evolving, enabling the emergence of “new technologies” in devices and networks, as well as related utility programs. The development of digital competences and lifelong learning is part of the right to education, training and lifelong learning enshrined in the European Pillar of Social Rights (principle 1). In line with the overarching objective of the Action Plan on the European Pillar of Social Rights by 2030, 60% of adults are expected to attend training every year.

In Italy, the “Digital Italy 2026” strategy, approved in March 2021, set ambitious targets, in line with the objectives of the European Digital Compass 2023, but with shorter deadlines. The plan, developed thanks to funding from PNRR, assumes the provision of ultra-broadband connectivity throughout the country by 2026, accelerating the digitalisation and uptake of digital services and public platforms, accelerating the digitalisation of public health and its unification in the territory, increasing the level of cyber-security in the country and influencing citizens’ digital skills. At the same time, it is planned to relaunch Italy’s presence in space and start strengthening the country with strategic technologies for the future.

The Italian assumptions are based on the postulate that digital public services must be socially inclusive and accessible to all, without discrimination or any form of gap. Having the necessary digital skills is essential in order for citizens to be able to fully enjoy their rights. In the ongoing digital transformation, no one should be left behind.

Through various projects, Romania is trying to align itself with *the European Union Digital Education Action Plan for 2021-2027* and in particular in the field of digital education. The main challenge is the use of a wide and growing range of digital technologies, aimed at acquiring the digital skills necessary for citizens to live and work in a world where digitalisation is becoming more and more widespread.

In the European context, Romania needs a framework that will guide reforms toward a resilient and high-quality education system that is in line with today’s needs and generational change and is able to respond to the challenges of the future. Digitalisation, the capitalisation of technological development, innovation, the flexibility of training pathways and the skills to respond to labour market changes are just some of the areas that need urgent action. Education in Romania must overcome numerous barriers and integrate with other education systems, becoming globally competitive. The response to these needs is the project “Educated Romania”, which will enable the values in the field of education to be balanced.

In Poland, the results of the Human Capital Balance study showed a high level of understanding of the need for continuing education (according to the idea of Lifelong Learning) in order to respond to the needs

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of the changing world. Thanks to education and constant development, learners also develop a range of so-called general competences, which have been included among the basic learning outcomes, but also as the so-called competences of the future (non-professional). These include:

- ability to analyse factors affecting the variability of our surroundings – in the sphere of culture, science and education (orientation in the world) – and ability to design and take appropriate actions,
- knowledge of philosophical trends and – their derivatives – value systems and conduct in accordance with one's own value system.

The methods of acquiring knowledge via the Internet and modern technologies based on it include popular social networking sites such as Facebook, YouTube and Twitter, as well as various educational platforms, vortals, specialised discussion forums or by running or regularly reading author's blogs. Recent years, especially marked by the COVID-19 pandemic, have significantly expanded the range of educational opportunities and tools being used. Webinars, live, podcasts, on-line courses, educational applications and tutorials, as well as instant messengers enabling direct meetings have gained popularity, for example, Zoom, Google Meet, Teams, etc. and related collaborative tools (e.g. Jamboard in the Google space). Digital expansion in the field of adult education led to the emergence of modern forms of education, such as e-learning (based on the use of information technology), m-learning (based on the use of mobile technologies in the educational process) and blended learning (mixed education).

The educational opportunities of adults are extended by the offer of free educational services, in the form of e.g. on-line courses. Examples of Polish solutions include:

- on-line courses prepared by Polish scholars, made available by Copernicus College, for anyone interested,
- a library of about 94 free e-learning courses, including those developed for mobile devices, about business topics, made available by the Polish Agency for Enterprise Development, intended mainly for entrepreneurs from the SME sector,
- an e-learning educational project for adults, called the NFZ Academy, addressed to all people who are close to the topic of health care. In addition to e-learning training concerning, among others, preventative healthcare, the rights and obligations of patients, the portal also provides videos, mobile applications, games and quizzes,
- Electronic Platform for Adult Learning in Europe – EPALE. Its task is to integrate the environment related to adult education. The platform regularly publishes various studies on adult education, as well as a blog devoted to the latest trends in this sector. In Poland, the activities carried out within platform are coordinated by the Foundation for the Development of the Education System.

The summary of the main conclusions from national studies from Italy, Romania and Poland shows the wide diversity of adult education in individual countries, both in the context of social and economic needs as well as the solutions applied. In this regard, initiatives aimed at developing the adult education sector in each of these countries are valuable.



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