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Analytical underpinning for a New Skills Agenda for Europe

Accompanying the document

**Communication from the Commission to the European Parliament, the Council, the
European Economic and Social Committee and the Committee of the Regions**

**A NEW SKILLS AGENDA FOR EUROPE:
Working together to strengthen human capital, employability and competitiveness**

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Analytical underpinning for a New Skills Agenda for Europe

Table of contents

Introduction.....	2
1. Why do skills matter?	6
1.1. Employability and active engagement in the labour market	6
1.2. Productivity	9
1.3. Digitalisation and automation	12
1.4. Migration and intra-EU mobility.....	15
1.5. Signals of skills deficits in Europe and the cost of skills mismatch.....	19
2. What is the state of play in Europe?	23
2.1. Educational attainment in Europe.....	23
2.2. Challenges related to skills levels and relevance	25
2.3. Making skills visible and comparable	44
2.4. Skills intelligence, documentation and informed career choices in Europe	48
2.5. EU funding opportunities for skills	74
3. What is the view of stakeholders?	76
3.1 Views on the overall Skills Agenda	77
3.2 Views on the revision of Europass.....	78
3.3 Views on the revision of the EQF	79
3.4. Views on the Skills Guarantee	79
3.5. Key messages from stakeholder groups.....	80
APPENDICES.....	85
Appendix 1. Skills glossary	85
Appendix 2. Overview of EU funding instruments for skills.....	89
ANNEXES.....	101
ANNEX I – TACKLING LOW SKILLS: THE SKILLS GUARANTEE	101
ANNEX II – RESULTS OF THE PUBLIC CONSULTATION ON THE EU'S MODERNISATION AGENDA FOR HIGHER EDUCATION	101
ANNEX III - ENHANCING THE TRANSPARENCY OF QUALIFICATIONS: THE EUROPEAN QUALIFICATIONS FRAMEWORK (EQF).....	101

Introduction

The purpose of this Staff Working Document is to accompany the Communication "A New Skills Agenda for Europe" and its three annexes "Tackling low skills: the skills guarantee", "Results of the public consultation on the EU's modernisation agenda for higher education", "Enhancing the transparency of qualifications and the European Qualification Framework (EQF)" and to present a general overview of the issues and the available evidence basis for this initiative.

In line with Better regulation principles, the evaluation evidence and the ex-ante assessment take account of the nature and type of the policy initiatives. Preparing an analytical document, instead of a fully-fledged impact assessment, was considered a proportionate approach on this agenda.

This Staff Working Document looks at the main problems and issues facing the EU with regard to human capital and skills needs which are addressed by the actions in the Communication and explains why Europe's economic and social success is and will be to a large extent based on the skills of its population. However, in the vast literature on skills, different definitions and concepts are used by different authors. For the purpose of this document, the term "skills" is used in a broad sense and refers to what a person knows, understands and is capable of doing.

Chapter 1 analyses why skills are important for employability and productivity and how demographic change, globalisation, technological progress, especially digitalisation and automation, impact on the changing nature of work and skills needs. Europe's ageing population and the decline in the working age population mean that economic growth will increasingly depend on higher employment rates through improved employability and on higher productivity growth through a better-skilled workforce. Equipping people with relevant skills¹ and qualifications, maintaining and making full use of the skills available drives innovation and competitiveness and provides the basis for high productivity and sustained competitiveness and growth. At the same time, a high level of skills reduces significantly the risk of individuals becoming unemployed, the risk of poverty and social exclusion and is associated with increasing engagement in society². This is especially urgent as there are circa 21.7 million unemployed people across Europe – half of whom have been so for more than a year. 4.4³ million are young unemployed. Low-skilled individuals are also often vulnerable consumers, especially in increasingly complex markets.

Globalisation, technological progress, digitalisation, the move towards a greener, low carbon and resource efficient economy, demographic ageing and the call for better work-life balance are changing the nature of work, job profiles and the skills required. Disruptive changes will continue to alter economic structures and create new types of jobs that are unknown today. A sound basis of knowledge and skills is the best way to boost people's ability to adapt to unforeseen changes. New ways of working, including the collaborative economy, increased

¹ In this document the term "skills" is used in a broad sense and refers to what a person knows, understands and is capable of doing, this encompasses knowledge and competences. In the **Recommendation of the European Parliament and of the Council of 18 December 2006 on key competences for lifelong learning** "competences are defined in this sense: "Competences are defined here as a combination of knowledge, skills and attitudes appropriate to the context.

² European Commission, Annual Growth Survey 2016, COM (2015) 690 final.

³ Eurostat, http://ec.europa.eu/eurostat/statistics-explained/index.php/Unemployment_statistics#Unemployment_trends

independent and contract-based work, more frequent job changes (for necessity and opportunity), and changes in work organisation all have an impact on the types of skills needed. These changes and the resulting impact on increased job and wage polarisation call for the need to re-skill and up-skill the European labour force. Higher-level and broader sets of skills and qualifications are increasingly required across the economy and are key to Europe's growth potential. By 2025⁴, 48.7% of all job openings (including both new and replacement jobs) in the EU will require high qualifications, 39.8% will be for medium qualified and only 11.5% will require low or no qualifications. There is a need for a broader set and higher levels of skills. Already in 2014⁵, seven in ten EU workers needed to have at least a moderate level of ICT skills (use a PC for word-processing, creating documents and/or spreadsheets) to perform their jobs. About half of adult workers considered problem-solving, teamwork and communication skills as very important for doing their jobs.

Chapter 1 also looks at how intra-EU mobility and third country migration can have a positive impact on resource allocation, productivity and growth, if managed through effective policies that make the most out of the available human capital. It also considers the risk of brain drain.

Chapter 2 looks at the state of play with regard to educational attainment and the skills stock in Europe as well as skills gaps and the macro-economic cost of skills gaps and skills mismatches, for instance through the misallocation of resources in the economy as well as the cost of not using the available skills (e.g. those of migrants, women, educated but unemployed youth and those in employment who do not fully use their skills).

Chapter 2 also looks at skills-related policy implementation in the EU. An important conclusion is that a worryingly high percentage of the adult population do not have the basic skills level required for full participation in the labour market and society. Possessing these skills at a level equivalent to EQF 4 (upper secondary education) is seen as the minimum requirement for people to be able to live and work in today's society, and in many cases is the minimum requirement for access to vocational and other further training. This is addressed by the Skills Guarantee proposal (**Annex 1**).

To be effective, education, training as well as research need to provide quality outputs and respond to the fast-changing needs of the economy and society. Research shows that the skills most in demand in advanced economies are “non-routine and interpersonal”⁶ while many Europeans are still trained in more traditional “routine and manual” skills. Evidence shows that in advanced economies such as the US, the employment share of non-routine jobs, such as design-related occupations, grew from 28% to 38% between 1995 and 2010, whereas traditional routine jobs fell from 53% to 41%⁷. This is further evidence that a targeted policy response is particularly needed for low-skilled workers who have been most strongly affected by the crisis and generally would require retraining to become employable again.

Skills are acquired at all stages of education and also through non-formal and informal learning, long before people enter the labour market and continue throughout the career path. Formal education, training systems including Vocational Education and Training (VET) remain the essential providers of skills and qualifications, although new developments are transforming the way people learn within these systems. Because of the privileged status of

⁴ Cedefop, 2016 (forthcoming).

⁵ Cedefop, European skills and jobs (ESJ) survey, 2014.

⁶ OECD, OECD Skills Outlook: First Results from the Survey of Adult Skills, OECD Publishing, 2013.

⁷ OECD, *ibid*

VET for the labour market, the Commission will make proposals to support the modernisation of VET in late 2017. The modularisation of education and training, the combination of study and work periods (including mobility), and the emergence of new providers and innovative models have further contributed to diversify the supply of learning opportunities. The role of teachers is central to ensure the quality of learning and to respond to evolving skills needs. The same is true of trainers at all levels.

High-level skills are developed primarily in higher education institutions and to some extent also in research institutions: Europe's universities, universities of applied sciences and colleges as well as research performing institutions. While enrolment and attainment in Higher Education in Europe has grown steadily during the past decade and higher education graduates continue to enjoy persistent advantages in both finding employment and earning, higher education systems still face important challenges in adapting to changing skills requirements in the real economy and preparing their students for a fast-changing world. These issues are being explored as part of the review of the EU's Modernisation of Higher Education. The main findings of a wide-ranging public consultation on the future of the modernisation agenda have fed into the Skills Agenda and are summarised in **Annex II**. To better understand the output of Higher Education and performance of graduates, the Commission will propose an initiative on Graduate Tracking in late 2017.

Chapter 2 also looks at the skills situation and skills in some of the key sectors in Europe, providing supporting evidence for a Blueprint for Sectoral Cooperation on Skills to support stakeholders from each economic sector to understand their skill needs and to develop European skills strategies.

After looking at the challenges related to the acquisition of the different kinds of skills, Chapter 2 also focuses on issues related to transparency and recognition of skills, the state of play of labour market and skills intelligence across the EU, including on sectoral and cross-sectoral skills challenges, and presents a snapshot of the current EU funding for skills. While developing the relevant skills is crucial, it is equally important that the skills already available are made visible and are used optimally. This includes the recognition of knowledge, competences and skills acquired outside formal education and training through non-formal and informal learning which poses significant challenges. The issues of visibility of skills are addressed in the specific proposal on enhancing the transparency of qualifications (**Annex III**). In the Skills agenda, there is a concrete proposal for the revision of the European Qualification Framework which aims at improving the transparency and comparability of qualifications. With regard to enhancing the comparability of migrant's skills and qualifications, the Commission is proposing a "Skills Profile Tool for Third Country Nationals" to support early profiling of asylum seekers, refugees and other migrants.

In addition, to bridge the skills supply with the changing demand on the labour market it is essential to improve our understanding of and capacity to forecast skills needs and to improve the way this intelligence is disseminated and used by individuals, education and training providers and policy makers. Better skills intelligence also helps to tackle skills mismatch and the macroeconomic costs associated with it. These issues will be addressed in the proposals on Europass to be presented later in 2016 on better tools and services for skills and qualifications. The Commission is also proposing to further analyse and share best practice to tackle the brain drain. The Commission will also propose a simplification of the current governance structure to support a more coordinated implementation of some of the initiatives of the Agenda.

To reinforce the evidence presented in Chapters 1 and 2, **Chapter 3** summarises the views of a range of stakeholders both on the Skills Agenda as a whole and on the specific proposals.

In the annexes, the evidence collected to support the concrete initiatives proposed by the Commission is presented. Each annex presents the challenges and then proposes a number of policy options for which the envisaged impacts are analysed. The analysis builds on the available evaluations and on stakeholders views that have been collected during the preparation of these policy initiatives.

Detailed evidence supporting specific proposals by the Commission is presented in Annexes I- III:

Annex I - Tackling low skills: the Skills Guarantee

Annex II - Results of the public consultation on the EU's modernisation agenda for higher education

Annex III - Enhancing the transparency of qualifications: the European Qualifications Framework (EQF).

1. Why do skills matter?

Europe's economic and social success is to a large extent based on the skills of its population.

Equipping people with relevant skills⁸ and qualifications, making full use of the skills available drives innovation and competitiveness and provides the basis for high productivity and sustained competitiveness and growth. At the same time, a high level of skills reduces significantly the risk of individuals becoming unemployed, the risk of poverty and social exclusion and is associated with increasing engagement in society⁹. This is especially urgent as there are circa 22 million unemployed people across Europe – half of whom have been so for more than a year. 4.4 million are young unemployed. Low-skilled individuals are also often vulnerable consumers, especially in increasingly complex markets¹⁰.

Globalisation, technological progress, digitalisation, the move towards a greener economy, demographic ageing and the call for better work-life balance are changing the nature of work, job profiles and the skills required. New ways of working, including the collaborative economy, increased independent and project-based work, more frequent job changes (for necessity and opportunity), and changes in work organisation all have an impact on the types of skills needed.

1.1. Employability and active engagement in the labour market

Education levels and skills have been shown to be strongly correlated with the probability of being employed as well as with wage levels. Eurostat analysis shows that the employment rate of those aged 25-64, who had completed a tertiary (short-cycle tertiary, bachelor's, master's or doctoral levels or equivalents) education was 83.7 % across the EU-28 in 2014, compared to 73.4 % for persons with at most an upper secondary or post-secondary non-tertiary education and 52.6 % for those who had attained no more than primary or lower secondary education. The largest falls in employment rates since the beginning of the financial and economic crisis (comparing 2008 with 2014) were witnessed for persons with at most a primary or lower secondary education (down 3.9 percentage points), while notably smaller falls were observed for persons with a tertiary education (down 1.4 percentage points) and persons with at most an upper secondary or post-secondary non-tertiary education (down 1.3 percentage points).¹¹

Analysis of the current levels and distribution of skills for seventeen Member States which participated in PIAAC Survey¹² also shows a positive association between education, skills, training, and employment opportunities, suggesting that part of the positive effect of education may pass through the level of skills possessed by the individual. The level of skills seems to be positively associated not only with employment opportunities, but also with the type of occupation in which individuals are employed and significantly to a number of social

⁸ In this document the term "skills" is used in a broad sense and refers to what a person knows, understands and is capable of doing.

⁹ European Commission, Annual Growth Survey 2016, COM (2015) 690 final.

¹⁰ see study on consumer vulnerability at:

http://ec.europa.eu/consumers/consumer_evidence/market_studies/docs/vulnerable_consumers_approved_27_01_2016_en.pdf) and the 2014 Consumer Scoreboard , page 15, at http://ec.europa.eu/consumers/consumer_evidence/consumer_scoreboards/10_edition/index_en.htm

¹¹ Eurostat, Employment Statistics, 2015

¹² Flisi S. et al., Skills Beyond Education, An analysis of cognitive skill evolution and its implications for employment chances, JRC Science and Policy Report, 2015

outcomes.¹³ Thus, upgrading skills in the sense of actual abilities, not only in terms of educational attainment, is crucial to improving labour market performance and beyond.

Another way of looking at the link between labour-market outcomes and skills is to analyse the effect of different proficiency levels on the probability of being employed, unemployed or inactive. It has been found¹⁴ that both unemployment and inactivity are more common among the least skilled (Level 1 and below). On average, about 57% of those individuals who score at Level 1 or below the PIAAC literacy proficiency scale are employed, 7% are unemployed, and the remaining 36% are inactive. The picture drastically changes when high skilled are considered. For individuals who score at Level 4 or 5, 79% are employed, about 4% are unemployed, and 17% are inactive.

Moreover, employees with a low level of education are almost five times more likely to be low-wage earners than those with a high level. In 2010, the proportion of low-wage earners among employees with a high level of education was 5.8 % in the EU which points to a problem with regard to use of their skills. This proportion increases to 19.3 % for a medium level of education and to 29.0 % for a low level.¹⁵

The relationship between literacy proficiency and labour market participations, employment and wages varies considerably among countries. This is likely to reflect differences in institutional arrangements (such as wage setting) as well as the relative weight given to educational qualifications and other factors in employers' hiring, promotion and wage-setting decisions.

Hourly wages are strongly correlated with proficiency levels. The OECD found that on average across countries, the median hourly wage of workers scoring at Level 4 or 5 on the literacy scale is 60% higher than that of workers scoring at Level 1 or below. Differences in returns as proficiency increases vary across countries¹⁶.

Proficiency in literacy, numeracy and problem solving in technology-rich environments is positively associated with the probability of participating in the labour market (Figure 1) and being employed and with higher wages.

After the effects of educational attainment are taken into account, an increase of one standard deviation in an individual's literacy proficiency (46 score points) is associated with a 20% increase in the probability of participating in the labour market and a 10% increase in the probability of being employed as opposed to being unemployed. An increase of one standard deviation in literacy proficiency is also associated with an 8% increase in hourly wages, on average across countries. The link between literacy proficiency and labour force participation is strongest in Sweden and Finland, where an increase of 46 points on the literacy scale raises the probability of being employed or looking for work by 56% and 43%, respectively. On the other hand, it is weakest in Estonia and Poland, where the likelihood of labour-force

¹³ Costa P., Caetano Rodrigues Jorge Rodrigues Ferro M., Vera-Toscano E. and Weber A., Education, Adult Skills and Social Outcomes: Empirical evidence from the Survey on Adult Skills (PIAAC 2013), Publications Office of the European Union, JRC89591, 2014

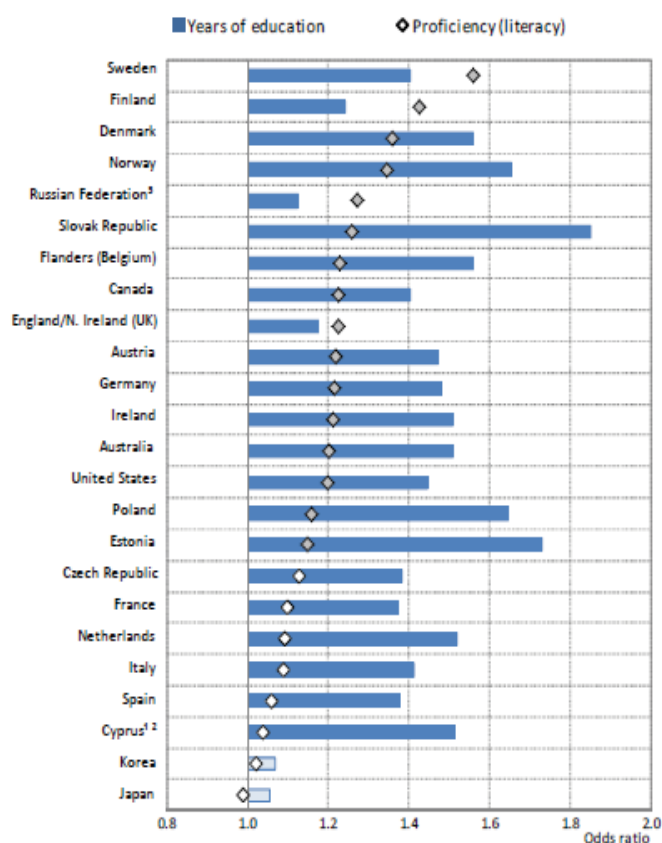
¹⁴ Quintini G., Skills at Work: How Skills and their Use Matter in the Labour Market, OECD Social, Employment and Migration Working Papers, OECD Publishing, 2014

¹⁵ Eurostat, Earnings by Level of Education, 2010

¹⁶ In several countries, such as the Czech Republic, Estonia, Poland, the Slovak Republic, Sweden and the Russian Federation, the distribution of wages appears to be rather compressed; at the other extreme, returns to greater proficiency appear to be extremely large in the United States, Korea, Ireland, Canada and Germany

participation increases by 15% and 16%, respectively, following a 46-point rise in the literacy score¹⁷.

Figure 1: Effect of education and literacy proficiency on labour market participation



Countries are ranked in descending order of the odds ratios of proficiency.

1.2.3. See footnotes 1, 2 and 3 of Figure 1.

Notes: Results are adjusted for gender, age, marital and foreign-born status. The odds ratios correspond to a one-standard-deviation increase in proficiency/years of education. Statistically significant values are shown in darker tones. Years of education have a standard deviation of 3.05, literacy has a standard deviation of 45.78.

Source: Survey of Adults Skills (PIAAC) (2012).

Odds ratio showing education and literacy proficiency on the likelihood of participating in the labour market among adults not in formal education

Source: Quintini, G.; 2014, OECD

As argued above, investing in skills, education and research has a crucial role for labour market participation. But skills are also associated with wider social and economic benefits. EU average estimates of proficiency in literacy, numeracy and problem solving in technology-

¹⁷ Quintini G., Skills at Work: How Skills and their Use Matter in the Labour Market, OECD Social, Employment and Migration Working Papers, OECD Publishing, 2014

rich environments¹⁸ and of adults' participation in learning programmes are positively and significantly associated with the probability of reporting high social trust, belief in having some impact on the political process, participating in volunteer activities and reporting good health. These effects are independent from those of educational attainment indicating that not only formal education per se is important; other individuals' competences understood as the ability to successfully meet complex demands in the current global economy¹⁹ are key for an effective and fruitful participation in the social and economic life of advanced and innovative economies.

1.2. Productivity

Economic growth is increasingly driven by labour productivity and share of employed people. As working-age population declines, greater participation of women on the labour market and additional human resources from international migration (both EU and third-country) as well as bringing the unemployed back into the labour market would help to compensate in part, the impact of ageing on the labour market and growth. However, productivity growth will eventually become the most important source of potential economic growth as employment starts declining. A more skilled workforce, capable of contributing and adjusting to technological change and new patterns of work organisation, can help to tackle disruptive developments.

Investment in education and training systems, anticipation of skills needs and matching and guidance services are thus fundamental in order to raise productivity, competitiveness, economic growth and ultimately employment²⁰.

Economic growth theories generally consider the accumulation of human capital and productive knowledge to be of similar importance to the accumulation of physical capital. Human capital accumulation is an investment in the upskilling of individuals which is rewarded through increased employability as well as higher productivity, wages and salaries in the future. Higher levels of skills, including flexibility and problem-solving, enable workers and employers to develop or adopt new ideas and processes²¹. It also fosters the circulation of ideas and the absorption of technologies from leading countries which increases the productivity of capital and labour and results in higher GDP growth. In addition, there is a strong complementarity between investments in physical and human capital, as the investment decisions of companies and people influence each other triggering a virtuous circle: companies investing in more sophisticated technology attract well-qualified staff while at the same time people willing to improve their competences encourage companies to innovate and invest in new equipment.

1.2.1. The demographic challenge and the productivity imperative

For decades, economic growth across Europe has been pushed by increases in both labour productivity and the share of employed people: an increasing workforce went hand in hand

¹⁸ While in the future, a more complex operationalization of skills' dimensions will be needed to better match individuals, performances, and jobs, as argued by OECD (2013) literacy, numeracy and problem solving as key information-processing competences, refers to the ability to understand, evaluate, use and engage with written texts to participate in society, to achieve one's goals, and to develop one's knowledge and potential. Thus, there is growing recognition of its critical role for personal success workwise and beyond.

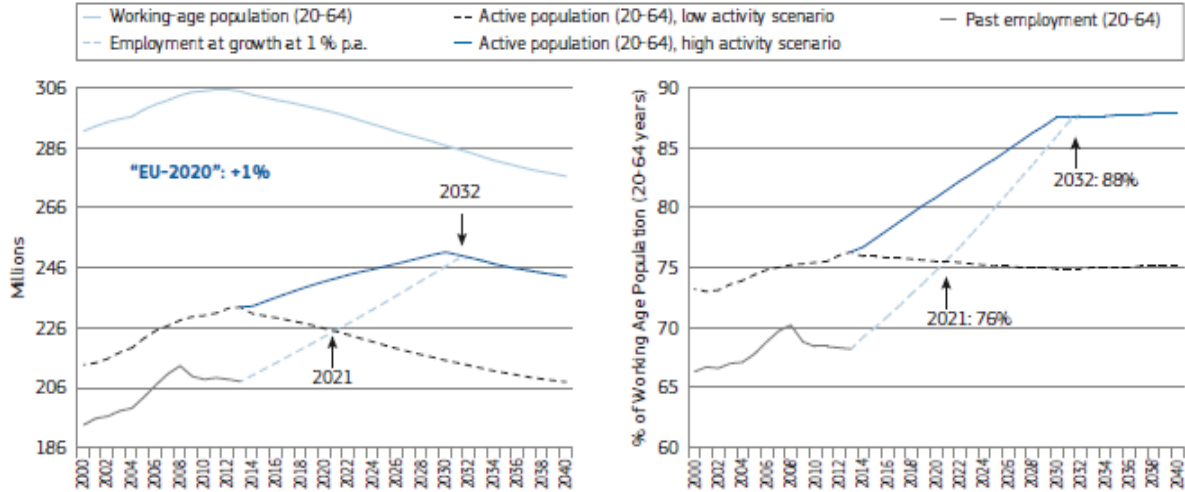
¹⁹ These skills are indicated in the Recommendation on Key competences for lifelong learning. The Commission is developing framework including learning outcomes and proficiency levels for foreign languages, digital competences and sense of initiative and entrepreneurship. Two of them can be already self-assessed by citizens in their Europass, and the Commission is promoting them extensively.

²⁰ DG RTD "New Skills and Jobs in Europe: Pathways Towards Full Employment", Policy Review, p. 29.

²¹ Burgess S., "Human Capital and Education: The State of the Art in the Economics of Education", FP7 Project COEURE, 2015

with the increase in their productivity, in turn driven by capital investment, technological change and the continuous reallocation of the labour force towards more productive industries. However, the challenges brought by demographic ageing may bring this scenario to an end. The EU is projected to move from having four working-age people for every person aged over 65 years to about two working-age persons by 2060. The population of working age (20-65) is projected to decrease from 306 million to 269 million by 2060.²²

Figure 2: Potential employment path assuming different activity scenarios, EU-28



Source: Update of Peschner and Fotakis (2013), p. 13-15.

As shown in Figure 2²³, in a context of demographic decline, there are limits to increases in the labour force. According to scenario analysis, starting from today’s EU activity rate of around 76%, the EU would approach activity rates of around 88% by 2032 under a high activity scenario. With no further progress in activation (low activity scenario) the EU will see employment growth turn negative relatively soon - around 2021. Even using very optimistic assumptions, EU employment growth will be unable to maintain a steady annual growth rate of 1% sustainable growth path for more than ten years. At the latest, it would turn negative around 2032.

Before the crisis, the EU's economy grew by an average of around 2% each year: the sum of 1% employment growth and 1% productivity growth on average. In order to continue growing at this pace in times of declining employment, the EU would have to more than double the rate of annual productivity gains.

In the medium term, it is thus evident that the workforce decline will leave productivity growth as one of the most important leverages to sustain economic growth and to maintain current welfare levels.

²² European Commission, "Economic and budgetary projections for the 28 EU Member States (2013-2060), The 2015 Ageing Report, 2015

²³ Taken from the Employment and Social Developments in Europe Review (ESDE) 2014

1.2.2. Skills as a Driver of Productivity

Skilled workers are more likely to be employed and are more productive than unskilled ones. Besides the direct impact that knowledge (know what) and competences (know how) has on the work output: skills can affect productivity growth also by promoting the transfer of knowledge and the mobility between universities, research institutes, firms, industries and countries²⁴; by developing absorptive capacity so that firms can better innovate or adopt best practices²⁵; and by promoting mobility of skilled workers to disseminate innovative ideas and knowledge of processes²⁶.

High level skills contribute more to productivity²⁷ the closer a country is to the technological frontier²⁸. Research suggests that a 1% increase in skills is associated with a 0.3% increase in average labour productivity and with a 0.365 % increase when the model is extended to take account of the potential role of skills in assisting productivity follower countries catch up with countries on or near the frontier. As companies approach the frontier they are more likely to innovate as opposed to imitate. One-year increase in average education is associated with a 3 to 6% increase in the level of GDP per capita and a 1% increase in school enrolment is associated to an increase in GDP per capita growth of between 1% and 3%.²⁹

In addition to its direct contribution to growth, human capital has indirect effects as well, by stimulating the accumulation of other productive inputs (e.g. physical capital, technology or health) which in turn foster growth. Nevertheless, all adults of working age need a necessary foundation of basic and digital skills in order to upskill according to labour market needs. This is very important when taking into account that low-skilled employees often do jobs that offer no on-the-job learning, receive less training organised by employers, and compared with high-skilled people miss out on the benefits of continued learning. The empirical analysis based on the European Skills and Jobs Survey³⁰ highlights the close relationship between the degree to which adult employees improve their skills in their jobs and the skill intensity and job complexity of such jobs. The net result is that low-skilled adults get stuck in a 'low skills-poor jobs trap', in unskilled work, with few opportunities to improve their skills.

The most significant skills contribution to labour productivity growth for seven Member States³¹ between 1980 and 2007 came through total factor productivity growth and capital accumulation followed by build-up of skills, most importantly higher-level skills (bachelor degree and above, ISCED 5a to 6). However, in six of the seven countries, upper-intermediate (technician level, ISCED 4 and 5b) and lower-intermediate (craft level, ISCED 3A and 3B

²⁴ Lundvall B.-A., *National Systems of Innovation: Toward a Theory of Innovation and Interactive Learning*, Pinter Publishers, 1992

²⁵ Benhabib J., Spiegel M., "The Role of Human Capital in Economic Development Evidence from Aggregate Cross-Country Data", *Journal of Monetary Economics*, 1994; Griffith R., Redding S., Van Reenen J., "Mapping the two faces of R&D: Productivity growth in a panel of OECD industries", *Review of economics and statistics*, 2004

²⁶ Mason et al., "External knowledge sourcing in different national settings: a comparison of electronics establishments in Britain and France", *Research Policy*, 2004

²⁷ Vandebussche et al., "Growth, distance to frontier and composition of human capital", *Journal of Economic Growth*, 2006

²⁸ The process of economic development is influenced by a country's income gap with the advanced economies that define the global technological frontier (Aghion and Howitt, 2006, 2009). The main growth driver for economies farther away from the technological frontier is the adoption of existing technologies; this process can also be more broadly defined as the implementation of more efficient production techniques. The closer a country gets to the global technological frontier the higher is the relative importance of innovation instead of imitation for sustaining productivity and output growth (Acemoglu, Aghion, and Zilibotti, 2006).

²⁹ Sianesi B., Van Reenen J., "The Returns to Education: Macroeconomics", *Journal of Economic Surveys*, 2003

³⁰ *Matching Skills and Jobs in Europe, insights from CEDEFOP's European Skills and Jobs Survey*, CEDEFOP 2015

³¹ Denmark, Germany, Spain, France, the Netherlands, Sweden and the UK

with vocational orientation) vocational skills also made positive contributions to labour productivity growth³².

Skill accumulation appears to improve productivity not only of individuals directly concerned, but also other members of the workforce, who benefit from ‘spillovers’, for example, knowledge passing between colleagues. There is significant complementarity between high- and intermediate-level vocational qualifications. Such a complementarity between intermediate vocational skills and high-level skills seems higher in manufacturing sectors of countries with apprenticeship-based systems³³. According to one CEDEFOP study, productivity performance is augmented by developing a mix of both intermediate-level and high-level skills³⁴.

1.2.3. Skills obsolescence

Lower-skilled workers, together with older workers and those without an opportunity to develop their skills throughout their careers, are most at risk of skills obsolescence and this can transfer into decrease of productivity.³⁵

For lower-skilled workers, particularly those in precarious jobs, the threat of skills depreciation is greatest. Some 33% of the lower-skilled workers experience a lack of skills development in their present career, compared to around 19% of highly-educated people. Skills obsolescence may also restrict the chances of people being able to move to more suitable (or better matched) jobs either with their current or a new employer.

Unemployment adds to their skills’ difficulties since by not exercising the skills they have attained they are losing them. Skills obsolescence could be counteracted by access to learning during periods of unemployment, but only limited numbers of low-qualified unemployed people participate in education or training.³⁶

1.3. Digitalisation and automation

Innovations in digital technologies are having a huge impact on the economy and society in Europe; delivering substantial benefits to the lives of people in Europe but also bringing challenges and the need to adapt. In particular, they are leading to structural change in the labour market and the need for new skills sets. Future growth and jobs will depend on the re- and up-skilling of Europe's citizens and labour force in the face of the digital transformation.

Already over the past two decades around a third of GDP growth can be attributed to the production, investment and use of digital technologies in the EU. However, in the US the growth contribution has been higher and academic work suggests that making complementary investments in human capital and other intangible assets is key to achieving the economic gains from ICT.

³² CEDEFOP, Benefits of vocational education and training in Europe for people, organisations and countries, Publications Office of the European Union, 2013

³³ CEDEFOP, Benefits of vocational education and training in Europe for people, organisations and countries, Publications Office of the European Union, 2013

³⁴ CEDEFOP, Macroeconomic benefits of vocational education and training, Publications Office of the European Union, 2014

³⁵ CEDEFOP, Preventing skills obsolescence, Briefing Note, 2012

³⁶ Ibid.

Digital technologies have also contributed to employment. Over the last decade, an extra 2 million ICT specialist jobs have been created, one million in the last three years alone. Increasing demand for skilled ICT professionals is already outstripping the supply. 40% of firms looking to hire ICT specialists report significant difficulties in finding adequately skilled people. Latest estimates suggest that by 2020 there could be around 800 000 unfilled vacancies for ICT specialists in the EU. Increasingly these jobs are created outside the ICT sector, in other sectors such as automotive. As such, over half of ICT professional jobs are now outside the ICT sector as the whole economy becomes digital. Furthermore, it has been estimated that 4-5 extra jobs are created in the economy for each new ICT job³⁷. The growth of the internet and a constant stream of new innovative services have also resulted in huge benefits for consumers.

While the computer and internet revolution of the past two decades has largely impacted on services and consumers, the latest wave of innovations is revolutionising industry and thus the production side. Developments in robotics, the Internet of Things, big data and cloud technologies are causing a fourth industrial revolution. There are significant gains to be made for competitiveness, innovation and growth if we embrace these changes in Europe.

Achieving future gains from ICT requires tackling skills challenges related to digitalisation. Digitalisation is leading to the automation of routine tasks and there are concerns by many that this will lead to the net destruction of jobs and that this will result in high rates of unemployment. Evidence from a recent Eurobarometer poll, for example, shows that while most European citizens (72%) feel that robots are a good thing for society, they believe that robots steal people's jobs (70%).³⁸ However, there is no real clarity yet with regard to the overall effects of automation and therefore it is difficult to have a balanced assessment.

These concerns have been fuelled among other things by a number of academic papers trying to estimate the potential of technologies in development to replace certain job tasks carried out by people i.e. looking purely at the negative side of the equation.³⁹ A different approach to analysing the number of jobs at risk of automation, based on the analysis of task content in individual jobs rather than average task content in occupations, leads to a much lower effect i.e. – just 9% of jobs risk being automated (as opposed to 50%)⁴⁰. A balanced assessment needs also to take into account job creation through technology. For instance, Bessen shows that technology tends to have a positive net employment effect for many occupations affected by automation, also because new technologies create new product and consumer demand.⁴¹ Digitalisation is also leading to an increasing demand for job roles involving work with technology. Whatever the balance, the existing workforce will have to undergo quick and effective re-training in order to be able to respond to new requirements as traditional sectors diminish and new markets develop. This requires a more responsive education system and improved coordination and cooperation among academia, research and business environments.

³⁷ Moretti, 2010; Goos, Konings and Vandemeyer, 2015

³⁸ European Commission, Autonomous Systems Report, Special Barometer 427, 2015

³⁹ Frey C. B., Osborne M. A., "The future of employment: how susceptible are jobs to computerisation", Study for the Oxford Martin Programme on the Impacts of Future Technology, 2013; Bowles J., "The Computerisation of European Jobs", Bruegel Online, 2014.

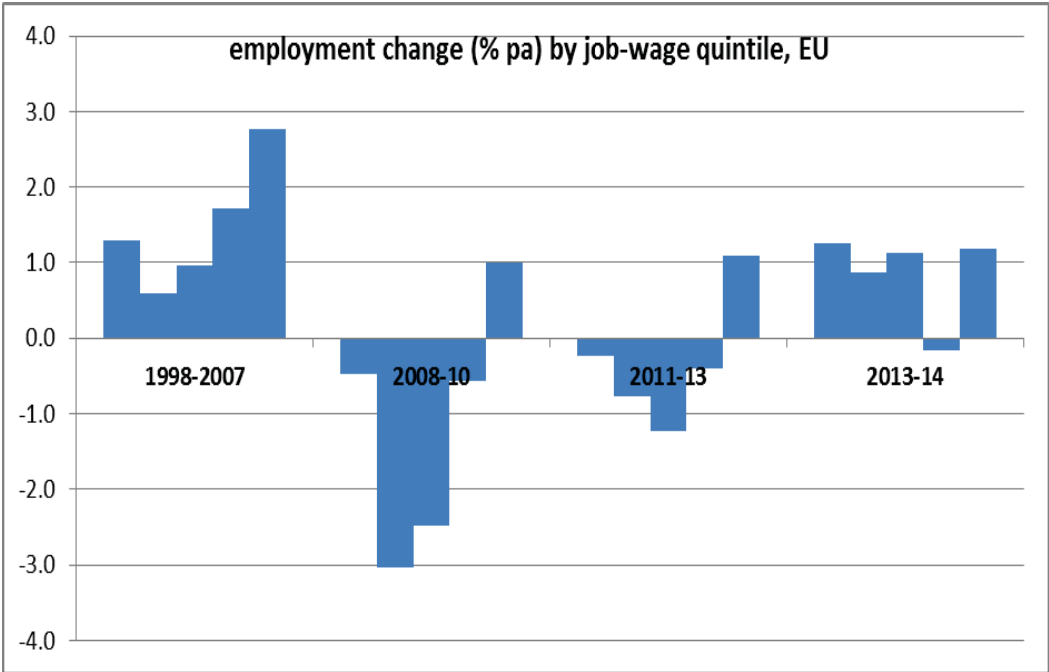
⁴⁰ OECD calculations based on the Survey of Adult Skills (PIAAC) (2012) and Arntz, M.T. Gregory and U.Zierahn (2016), "The Risk of Automation for Jobs in OECD Countries: Comparative Analysis", OECD Social, Employment and Migration Working Paper No. 189, OECD Publishing, Paris.

⁴¹ J. Bessen (2015) Learning by doing: The Real Connection between Innovation, Wages and Wealth.

Nevertheless digitalisation is impacting on the structure of employment. Many so-called "routine" tasks and the jobs associated with them are being automated. At the same time, many existing jobs are being increasingly supported or complemented by digital technologies and new jobs are also being created for people operating, repairing and programming the new robots, machines and other digital tools. Furthermore, completely new jobs are being created throughout the economy.

As the tasks and jobs being automated largely require low/medium level skills and those being created more often than not require higher levels of skill, digitalisation is contributing to so-called job "polarisation"; that is, an increase in the employment share of higher-skill and lower-skill jobs and a decline in middle-skilled work (Figure 3).

Figure 3: Employment change (% per annum), EU, by job–wage quintile



Reading note: The changes do not add up to zero.
 Notes: EU-27 for 2008-2014 (HR not included), EU-23 for 1998-2007 (PL, RO, MT, BG missing). Quarter two employment data used for each year post-2008, annual data for 1998-2007.
 Sources: ESDE 2015 - EU-LFS, SES (own calculations).

The issue of job polarisation could greatly affect the relationship between skills and economic growth. While it is not fully clear how the effects of polarisation will play out, there will continue to be a high premium on having cognitive skills to solve non-standard problems⁴². Global transformations and technological change pose new skills requirements. On the one hand, transversal skills such as learning to learn, communication, problem-solving, linguistic

⁴² OECD Policy brief on the future of work: Automation and independent Work in a Digital Economy, May 2016.

capacity⁴³ become more prominent since they allow citizens and the workforce to keep up with the pace of job-task transformations. On the other hand, basic skills allow adults to confidently and critically use information for work, leisure, learning and communication⁴⁴. Technological progress which tends to make skills obsolete may end up increasing inequalities thus directing attention to the need to keep skills up to date with changing demand.

But it is not just about training more engineers who design the new digital equipment. In fact, every employee in the future will need to be digitally literate. While most jobs already require a basic level of digital skills, around one third of the European labour force is still digitally illiterate. Fully benefiting from the digital transformation will require a massive effort to up-skill and re-skill the European labour force.

1.4. Migration and intra-EU mobility

Intra-EU mobility and third country migration can have a positive impact on resource allocation, productivity and growth, if managed through effective policies that make the most out of the available human capital. In particular, intra-EU mobility and migration play an important role in bringing labour supply in line with labour demand and steer workers towards those places where their skills can be used most efficiently. Effective policies can facilitate the matching process between workers and their jobs, for example by increasing transparency on skills and qualification acquired abroad, or by helping migrants and mobile workers to fill remaining skills gaps.

1.4.1. Migration

Simulations with the European Commission's Labour Market Model (LMM)⁴⁵ suggest that the impact of international migration on the host economy depends on the specific skill set⁴⁶ of migrants. According to these simulations, low qualified international migrants tend to lower average labour productivity and hence wages while high qualified migrants tend to increase average labour productivity and wages. In addition, higher skilled migrants tend to have stronger positive effects on total employment and GDP in countries where the share of high-skilled in employment is relatively low.

However, host economies are not always successful in exploiting the full potential of migrants, even of high-qualified ones. In particular, migrants (and especially those with foreign qualifications) face a large *discount* of their qualifications in the labour market⁴⁷. Recent evidence shows that foreign qualifications have a much lower value in the labour market than domestic ones, and their returns are lower than those of the native-born and of immigrants with host-country qualifications both in terms of employment and job quality⁴⁸.

⁴³ Belton M. F., Haizheng L., Bo L., "Language skills are critical for workers' human capital transferability among labor markets" Policy Brief FP7 project LLLight'in'Europe, 2015

⁴⁴ European Commission, "Measuring Digital Skills across the EU: EU wide indicators of Digital Competence", 2014

⁴⁵ LMM is a general equilibrium model with a particular focus on labour market institutions. See Berger et al. (2009)

⁴⁶ In the simulation the terms 'skills' and 'qualifications' are used synonymously. They refer to the educational attainment level according to the ISCED classification.

⁴⁷ OECD/European Union, Matching economic migration with labour market needs, OECD Publishing, 2014, see in particular chapter 8, "Migrants' skills: Use, mismatch and labour market outcomes. A first exploration of the International Survey of Adult Skills (PIAAC)"

⁴⁸ OECD, International migration division, "Migrants qualifications and skills and their links to labour market outcomes", presented at EU-OECD Dialogue on migration and viability, Brussels 2014."

Moreover, in Europe, foreign degrees from non-EU countries are more strongly discounted in the labour market than those from EU countries.

As a result, there remains a large untapped potential among third-country nationals residing in the EU where, even among those with high education, around two thirds are either inactive or unemployed, or over-qualified for their jobs⁴⁹. Over-qualification rates for third-country nationals residing in the EU are largely above average, especially for those having qualifications acquired abroad⁵⁰. Migrant women are worse off than men in almost every country, with an over-qualification rate of 11 pp higher than that of their male peers and 13 pp higher than that of EU female citizens⁵¹.

To tackle this challenge, a swift assessment and recognition of migrants' foreign qualifications and skills is key. Skilled migrants also require faster-paced, more challenging integration programmes which equip them rapidly with the advanced language and professional skills required for higher-skilled employment. These programmes should be particularly tailored to women's needs.

EU countries also need to have effective policies in place to retain and attract skilled workers. While future trends of skilled labour migration are difficult to forecast, the demand for highly skilled workers in "knowledge economy" fields is expected to continue to grow, not only in high-income countries but also, increasingly, in medium-income countries⁵². As a result, highly skilled workers are expected to be more and more sought after and, due to the growing internationalisation of the highly skilled labour market, Europe will enter in an increasingly fierce global competition with a growing number of other economies to attract the talent it needs⁵³.

The recent influx of migrants in search of international protection has added weight to the need to improve policies in the field of migration.⁵⁴ In 2015 alone, around 1.26 million persons applied for asylum in the EU, compared to 550 000 in 2014. Around 70% of the asylum seekers is of working age, in other words between 18 and 64 years' old. Around 29% are younger than 18. Relatively little information is available on their education and skills. Some preliminary evidence suggests that qualification levels are relatively low compared to the host country population,⁵⁵ although there are differences according to the countries of origin.⁵⁶

Besides meeting these refugees' most urgent needs such as accommodation and food, there is a need to help improve their long-term situation, including by helping them to quickly improve their skills in the language of their host countries, in order to integrate into society, and to find employment.⁵⁷ Their integration in the labour market is further complicated, however, by the fact that most of these have no evidence of their qualifications that could

⁴⁹ Eurostat, EU Labour force survey, 2015

⁵⁰ OECD/European Union, Matching economic migration with labour market needs, OECD Publishing, 2014

⁵¹ Indicators of Immigrant Integration 2015, Settling In, © OECD/European Union 2015.

⁵² OECD, The Global Competition for Talent. Mobility of the Highly Skilled, OECD Publishing, 2008.

⁵³ Rinne U., "The Evaluation of Immigration Policies", IZA Discussion Paper, 2012.

⁵⁴ European Commission, An economic take on the refugee crisis, Staff Working Document, 2016

⁵⁵ See, for example, Institut für Arbeitsmarkt- und Berufsforschung (IAB), Aktuelle Berichte 8/2015, and IAB, Aktuelle Berichte, 14/2015.

⁵⁶ For instance, in Germany, those coming from Syria seem to have higher level of education than from other source countries, though they still have considerably lower educational attainment than host-country nationals. In Sweden, according to Statistics Sweden, more than 40% of Syrians have at least upper secondary education, compared to 20% of those from Afghanistan and 10% for those coming from Eritrea, while the share of Sweden-born with at least upper secondary education was above 68% in 2014.

⁵⁷ European Commission website, "EU launches the Science4Refugees initiative", EURAXESS Researchers in Motion

enable them to start a process of validation and recognition of their qualifications. In this context, the European Commission is developing a "Skills and Qualifications Kit" to support Member States in early profiling of asylum seekers, refugees, and other migrants.

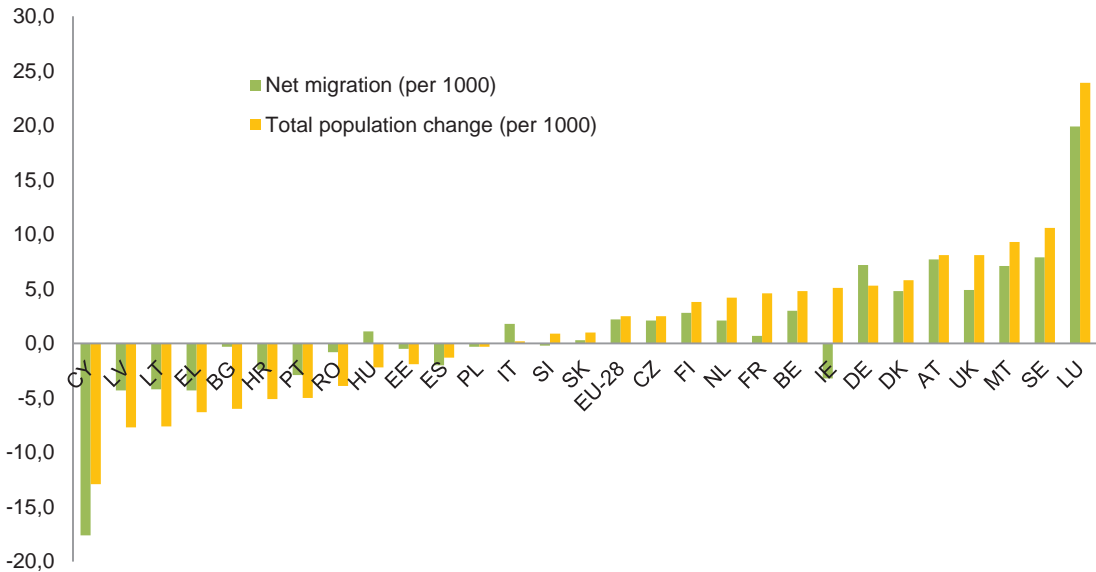
1.4.2. Mobility and risk of brain drain

In the context of the single market and free movement of persons, intra-EU mobility can enable those with required skills to move to areas where there are skills gaps. However, intra-EU mobility and mobility in general can also be associated with brain drain.

Brain drain in the European Union: Facts and Figures

Emigration is high in some European countries, in particular Cyprus and Greece and the Baltic states (see Figure 4). This may have impacts on potential GDP growth: a declining population may result in a shrinking economy. How living standards (GDP per capita) is affected by strong net emigration, depends on the composition of net emigration.

Figure 4: Rates of population change and net migration in the EU, 2014

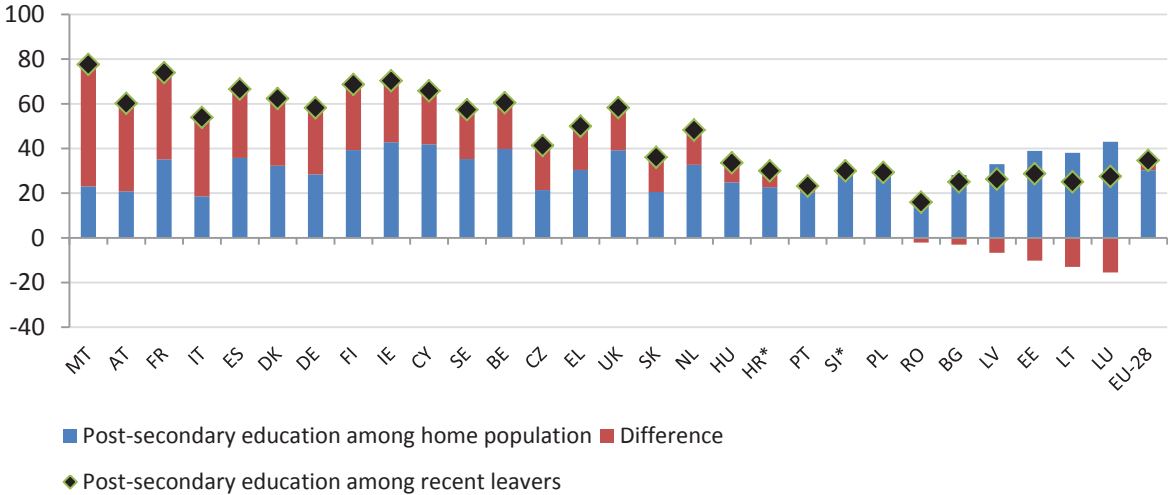


Source: Eurostat

The trends in brain drain are however not so clear-cut. In Greece and Cyprus, the share of high-skilled among emigrants is higher than among stayers. This implies that Greece and Cyprus could be considered as suffering from a particular "brain drain" challenge, as the stayers are on average less educated than the leavers hence emigration reduces the average human capital level of the country. On the other hand, emigration from the Baltic countries

seems to be more biased towards less-skilled emigration;⁵⁸ and in Portugal, emigrants are on average similarly skilled as stayers. In these cases, emigration is not biased towards higher-skilled individuals. In the case of the Baltics, emigration even seems to raise the average skills level of the population that remains behind (see Figure 5).

Figure 5: Share of population with a post-secondary degree, by country and among their citizens who recently settled abroad (living for less than 10 years in another EU MS), 2013



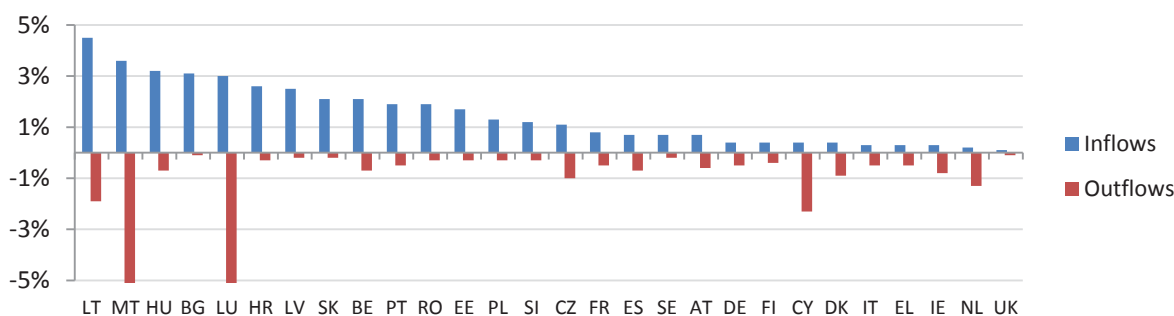
Source: ESDE 2015

Is emigration a problem?

If emigration occurs in large numbers, the shrinking population can reduce potential growth. Especially if young generations are strongly overrepresented among the emigrants, this may accelerate ageing of the population and worsen the sustainability of pension and social security systems. On the other hand, emigration may also be a source of remittances. These may contribute to growth in home countries. Especially in the Baltics, a positive impact of remittances on GDP is likely. For Greece and Cyprus this is less the case (see Figure 6).

Figure 6: Remittance inflows and outflows, as a share of GDP

⁵⁸ See also Durán J. et al. (2015) ‘Emigration of the less-skilled: the role of incentives to work in Estonia’, Country Focus, Volume 12, Issue 3, ECFIN, European Commission, March 2015.



Source: ESDE 2015

Brain drain and the possible negative effects of high emigration is a matter of concern within the EU, however as mentioned above the effects vary markedly between countries. More evidence is therefore required and the Commission will propose to analyse further and exchange best practices on effective ways to address brain drain.

1.5. Signals of skills deficits in Europe and the cost of skills mismatch

1.5.1. Skills mismatches

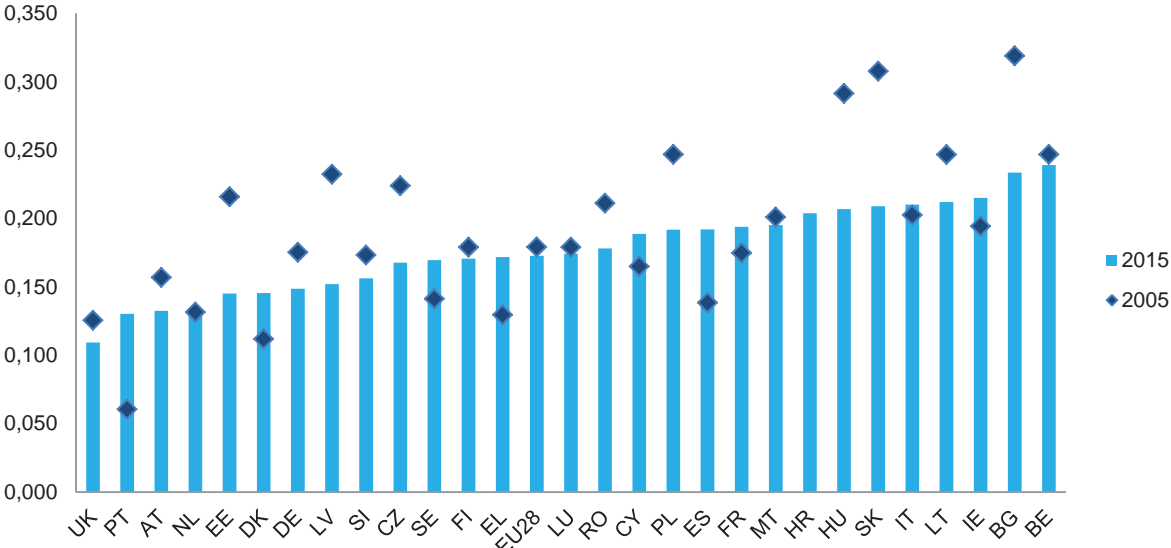
In many EU Member States, the efficient use of human capital is complicated by the incidence of skills mismatches, reflecting imbalances between the supply of certain skills and the demand for those skills. Skills mismatch can be studied from various perspectives. Macro-economic skills mismatch compares the skills sets of individuals available for work with the skills demanded by the labour market at an aggregate level. On-the-job mismatch, on the other hand, looks at whether the skills sets of those individuals who are working corresponds to the skills needs of their job.⁵⁹

Macro-economic skills mismatch can be measured through the relative dispersion of employment rates across education groups, which quantifies the differences in employment rates between low-qualified, medium-qualified, and high-qualified individuals of working age. Countries with large disparities in employment rates between low-qualified and high-qualified individuals have a high relative dispersion or macroeconomic skills mismatch, pointing at a potential need for policy intervention in labour markets and/or education systems to mitigate problems of structural unemployment. In some cases, mobility and migration can also help alleviate the consequences of skills mismatch, e.g. by steering lower-skilled workers towards regions with a higher demand for them, or by supplying high-skilled workers to those regions that face specific skills shortages.

While most EU Member States have made substantial improvements over the past decade at the level of macroeconomic skills mismatch, including through upskilling of their population, some countries (including Spain, Portugal and Greece) saw a strong deterioration in labour market outcomes for low-skilled individuals as a result of the crisis and therefore a worsening skills mismatch. Although some improvement was observed since 2005 in most cases, macro-economic skills mismatch remains alarmingly high in Belgium, Bulgaria, Ireland and Lithuania (see Figure 7).

⁵⁹ For more details, see Kiss, A., Vandeplass, A. (2016) Measuring skills mismatch. DG EMPL Analytical Web Note 7/2015.

Figure 7: Macroeconomic skills mismatch across EU countries (2005, 2015)



Note: Macroeconomic skills mismatch is measured as the relative dispersion of employment rates by education level. Annual average based on the average of four quarters.
 Source: EC own calculations based on Eurostat data.

There is also some evidence that for a substantial share of employees, their skills set is not well-suited for the job they occupy. According to the OECD Survey of Adult Skills (PIAAC), roughly one-third of workers in OECD countries are over- or under-qualified for their job. When going beyond qualifications and looking at specific skills used on the job, one-sixth report a mismatch between their own skills and those required for their job. More detailed analysis of skills and qualification mismatch on-the-job however points at challenges in the correct measurement of such mismatch, as the correlation between different measures is not always as strong as expected.⁶⁰

From the perspective of a given firm, hiring an over-skilled or over-qualified worker may be beneficial for individual productivity, assuming that there are no adverse effects on job satisfaction and that the wage premium paid to over-qualified individuals does not offset any associated productivity gains. However, from an economy-wide perspective, over-skilling and over-qualification could point at the inefficient allocation of resources, as some workers could possibly be employed more productively in other jobs. Recent research suggests that on-the-job mismatch may contribute to explaining cross-country differences in labour productivity⁶¹, which underscores the need for further analysis in this field.

⁶⁰ Flisi S., et al., Occupational mismatch in Europe: Understanding overeducation and overskilling for policy making Publication Office of the European Union, JRC89712, 2014

⁶¹ McGowan M. A., Andrews D., "Labour Market Mismatch and Labour Productivity, Evidence from PIAAC Data", OECD Economics Department Working Paper, 2015

1.5.2. Gender difference in the use of skills

The analysis in section 1.2 on the relationship between skills and productivity calls point to the importance of designing a comprehensive approach to the development and requalification of skills and for better use to be made of existing human resources. For instance, although women now form the majority of students and university graduates in most Member States, they are more likely to be inactive or in part-time employment than men: 26% of women are inactive and a third of employed women are in part-time employment. Moreover, women earn less than men, and they rarely make it to the top⁶². GDP per capita losses due to gender gaps in the labour market have been estimated at up to 10 percent in Europe⁶³. Raising the employment rate of women is therefore a key policy option to boost growth and counteract the shrinking of the working age population in the EU. In addition, given that returns to education differ widely for men and women, reducing the wage gap of women to men is also essential to putting in place incentives that will lead to higher returns on investment in skills⁶⁴.

Similarly, the employment rate of persons with disabilities is 22.9 percentage points lower compared to people without disabilities (48.5% versus 71.4%). In addition, 40.2% people with disabilities are inactive compared to 19% of persons without disabilities⁶⁵. Insufficient skills are one of the reasons of the high employment rate gap. Indeed, in the majority of countries the early school leaving rate is more than twice as high for persons with disabilities. There is a gap of more than 10 percentage points between people with and without disabilities when it comes to tertiary education attainment⁶⁶. Regarding non-formal education and training, in 2011 the participation of people with disabilities was 10 times lower (1.9 million) than that of people without disabilities (19.9 million)⁶⁷. There is evidence that supporting the participation of people with disabilities in life-long learning and career counselling helps to reduce the employment gap, boost growth and facilitate their inclusion in the society. As there are around 80 million people with a disability in the EU, increasing their integration in the labour market would bring about significant benefits.

The lack of adequate work-life balance policies also constitutes an obstacle to employment, especially for women. Moreover, men and women tend to work in different sectors. Women are overrepresented in sectors such as health (77% women), education (67% women), and the service sector (80%), while men constitute the majority of workers in construction (91%), transport (80%), industry (69%) and agriculture (65%). The gender segregation on the labour market reflects gender inequalities in education: women remain underrepresented in fields of studies such as mathematics, engineering, ICT, etc. Even when they graduate in this field, they are less likely to seek and find employment in these sectors.⁶⁸

Evidence shows that educational and occupational segregation is detrimental to the economy, and appears to be associated with bottlenecks on the labour market⁶⁹: skills shortages and bottlenecks are experienced in occupations that are either female-dominated occupations (personal care workers, for instance) or male-dominated (science and engineering professional

⁶² European Commission, 2015 Report on Equality Between Women and Men, 2016

⁶³ Cuberes D., Teignier M. , "Aggregate Costs of Gender Gaps in the Labor Market: A Quantitative Estimate", UB Economics Working Papers, 2014

⁶⁴ OECD, Tax and Skill Tax Policy Study, 2015

⁶⁵ EU-SILC 2013

⁶⁶ Ibid.

⁶⁷ According to 2011 LFS ad-hoc module on employment of persons with disabilities

⁶⁸ OECD, Closing the Gender Gap: Act Now, OECD Publishing, 2012

⁶⁹ Attström K. et al., Mapping and analysing bottleneck vacancies on the EU labour markets, Overview Report, European Commission, 2014

and associate professionals, etc.). The shortages could be addressed by enlarging the pool of available workforce and reaching the under-represented sex. This means tackling gender stereotypes early on at school, throughout the educational path, and during the school-to-work transition.

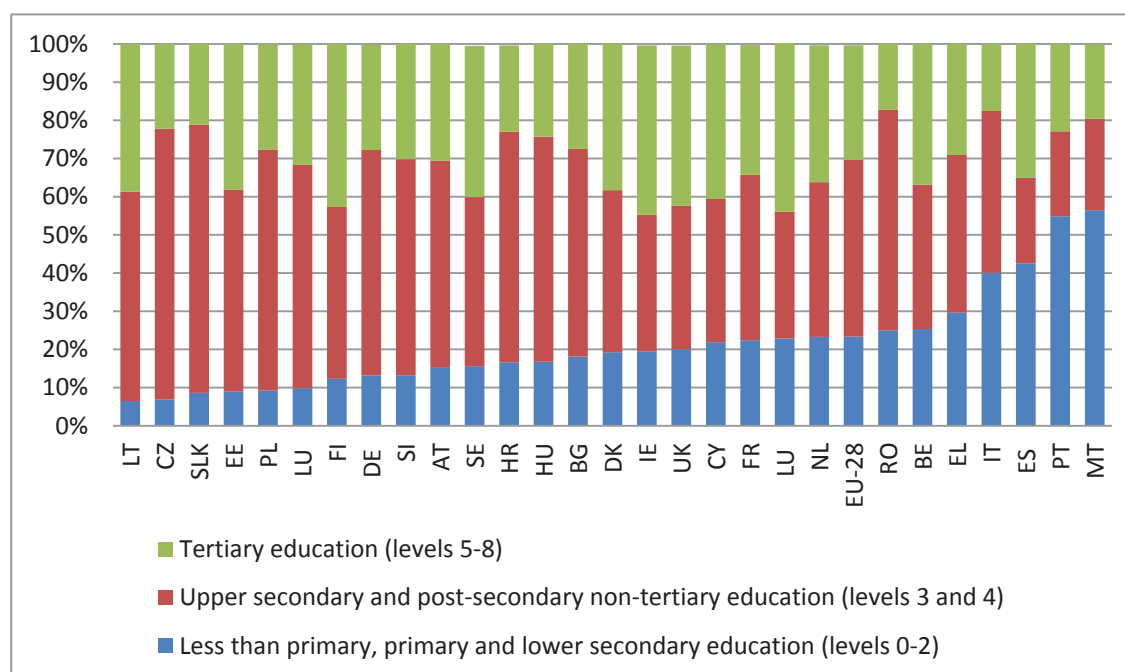
2. What is the state of play in Europe?

Having focused on why skills are so central to Europe's economic and social success in chapter 1, this chapter now looks at the main challenges regarding the acquisition and use of skills in Europe and the state of policy implementation in achieving these. It also looks at the issue of better use of skills and their transparency and recognition, as well as addressing the issue of skills intelligence in Europe. Pointers are given to the annexes supporting specific policy proposals in the New Skills Agenda to address these main challenges. For the purpose of this document, the term "skills" is used in a broad sense and refers to what a person knows, understands and is capable of doing. However, in the considerable literature on skills, different definitions and concepts are used by different authors. For a glossary of different kinds of skills and some conceptual considerations please see appendix 1.

2.1. Educational attainment in Europe

In the EU, 23.4% (64 million) of the population aged 25-64 do not have upper secondary education, and only 29.9% hold a tertiary degree. These figures hide a broad variation among EU Member States in terms of educational attainment (see figure 8). Notably, the share of the population aged 25-64 having attained at most lower secondary education ranges from less than 10% in Lithuania, the Czech Republic, Estonia, Slovakia, Poland and Latvia to more than 40% in Malta, Portugal, Spain and Italy. At the other end of the spectrum, the share of the population with a tertiary degree ranges from less than 20% in Romania, Italy and Malta to more than 40% in Sweden, Luxemburg, Finland, Ireland, United Kingdom and Cyprus.

Figure 8: Distribution of educational attainment among population aged 25-64 (2015)



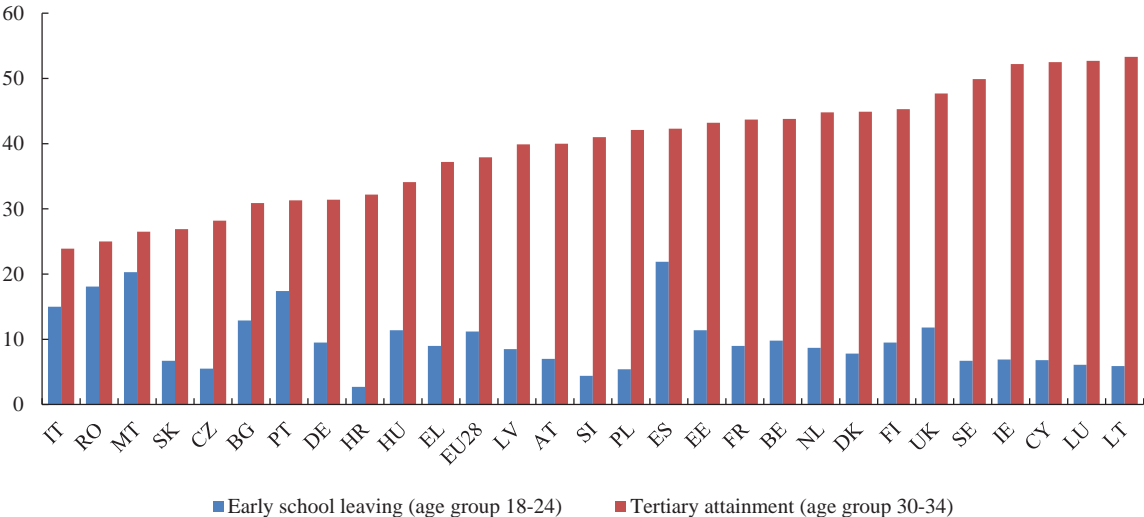
Source: Eurostat [lfsa_pgaed]

Education outcomes are not evenly distributed across population sub-groups and some of them are much more likely to have adverse outcomes. For instance, around 44% of third-country nationals residing in the EU are without at least an upper secondary education qualification⁷⁰, which is a much larger share than among natives.

For a cross-comparison of the performance of education systems today, it may be more relevant to look at educational attainment among young generations entering the labour market today, rather than at educational achievement of the entire adult population. Figure 9 shows that in 2014, 11.2% (4.6 million) of European youth (aged 18-24) left initial education without an upper secondary school diploma. While this share of early school leavers has been continuously declining since 2004, when it stood at 16%, there is still ample room for improvement for many Member States. For example, the share of early school leavers remains at 15% or above in Italy, Portugal, Romania, Malta and Spain. Some convergence can be observed: especially in Italy, Portugal, Malta and Spain, early school leaving declined a lot over recent decades. Again, some groups are more affected by early school leaving such as young third-country nationals (25.7% in 2014)⁷¹ as well as to some extent native children of foreign-born parents (the so-called "second generation"⁷²).

Figure 9 also shows that almost 38% of people in Europe aged 30-34 hold a tertiary degree. Again, there is wide variation: tertiary attainment ranges from 23.9% in Italy to 53.3% in Lithuania.

Figure 9: Education outcomes among young cohorts (2014)



Source: Eurostat [t2020_4 and t2020_41]

Note: Early school leaving measures the % of the population aged 18-24 with at most lower

⁷⁰ Eurostat, EU Labour Force Survey, 2014
⁷¹ Eurostat, Early leavers from education and training by sex and citizenship, 2016
⁷² OECD/European Union, Indicators of Immigration Integration 2015 – Settling In, OECD Publishing, 2015, see in particular Chapter 13.9

secondary education and not in further education or training.

2.2. Challenges related to skills levels and relevance

2.2.1. Basic skills

Basic skills are those that people need to play a full and active part in society and in the labour market, undertake their responsibilities, and develop their full potential through life-long learning⁷³. They are commonly defined⁷⁴ as literacy and numeracy and, in today's fast-changing world, they include also digital skills which are becoming indispensable in daily life. In the context of this skills agenda it is considered that the required level is at least that comparable to those held by upper secondary school leavers – equivalent to EQF level 4 (broadly, PIAAC level 3)⁷⁵. This is the level of skills that enables people to manage their own development and provides them with better protection from unemployment risk⁷⁶. As noted in section 1.5 above, 23.4% (64 million) of the EU28 population aged 25-64 did not attain an upper secondary education⁷⁷, and a fifth of European adults in the Member States that took part in PIAAC possess only rudimentary literacy and numeracy skills (below PIAAC level 2)⁷⁸.

How do adults in Europe compare with other major industrial countries on basic skills? Based on the OECD survey of adult skills (PIAAC) across the OECD, nearly 20% of the population aged 16-65 in the participating EU Member States has at most basic literacy skills (at most PIAAC level 1), while in Japan this applies to less than 5% of the population aged 16-65. In literacy, participating EU countries on average perform slightly worse than OECD countries as a whole but comparable to the US (see figure 10a). While in EU17, 9% of the population showed high levels of literacy skills (levels 4 and 5) the share for the OECD is almost one third higher (12%); in numeracy, the difference between the two is slightly lower. However, there are considerable differences in the distribution of skills across participating countries. At global level, Japan outperforms all other countries with its high share of performers at levels 3-5 and very few low performers. Big non-European economies like Canada and the US do not score very differently from many EU countries. For numeracy, the pattern of proficiency across countries is broadly the same, with few differences (see figure 10b). In EU17, the share of high performers (those scoring on levels 4 and 5) is at 10%, slightly lower than the overall OECD average. Japan stills outperforms all EU Member States with 63% of the working age population scoring on levels 3-5 (next comes FI with 58%), and other large economies are a little below (US) or above (Canada) EU average.

⁷³ PIAAC (previously IALS and ALL) is the only survey which tests adults' skills and currently data are only available for 17 EU Member States. The Eurostat Labour Force Survey, which is carried out annually, covers all Member States and gives a breakdown by educational attainment level. Throughout this section, data on ISCED level 0-2 (lower secondary education or below) is used as a proxy for "low-skilled".

⁷⁴ For instance the OECD worldwide report Universal Basic Skills, 2015, considers as a straightforward and useful definition of basic skills is the acquisition of at least level PISA 1 skills (420 points).

⁷⁵ The OECD Survey on Adult Skills within the Programme for the international assessment of adult competences (PIAAC) directly tests literacy, numeracy, reading components and problem solving in technology rich environments. Cf. <http://www.oecd.org/site/piaac/surveyofadultskills.htm>.

⁷⁶ People with at most lower secondary education were the most affected by the crisis, with an unemployment rate rising from 9.7% in 2008 to 17.4% in 2014. Cf. Eurostat; EU Labour force survey [lfda_urgaed].

⁷⁷ Eurostat, EU Labour force survey, 2015

⁷⁸ Aged 16-65, OECD, Skills Outlook 2013, First results from the Survey of Adult Skills (PIAAC), OECD Publishing, 2013

Figure 10a: How proficient are adults in literacy? Share of the population 16-65 years old at each skills level per country

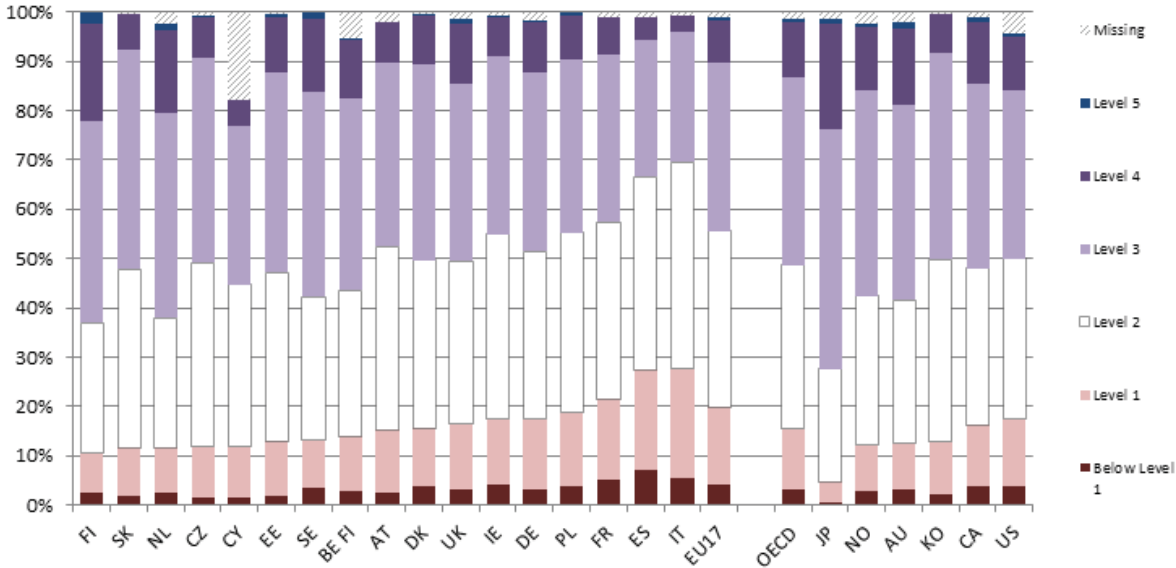
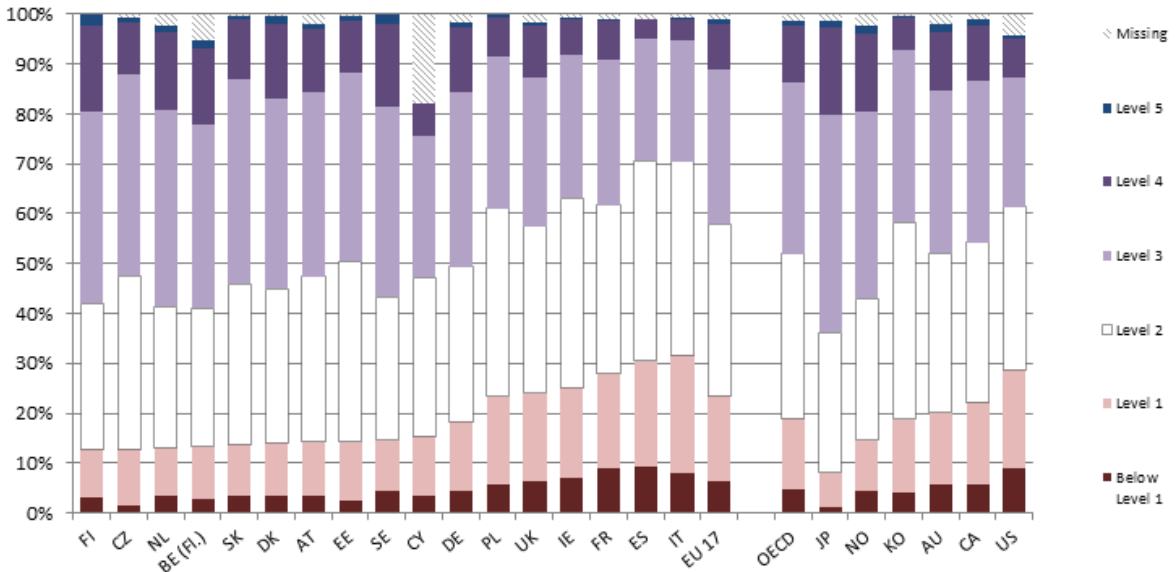


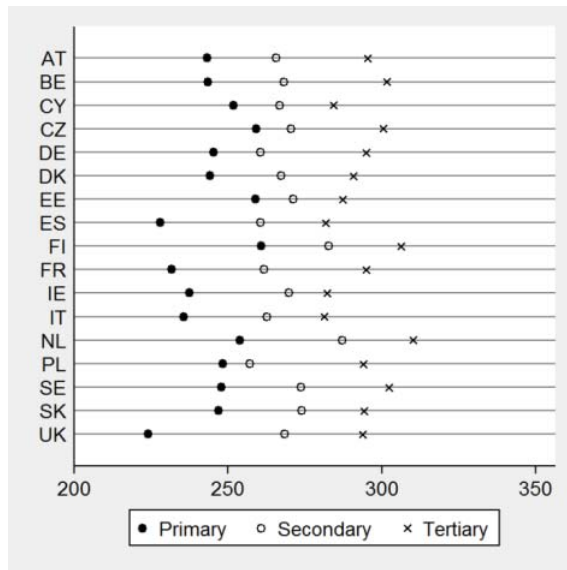
Figure 10b: How proficient are adults in numeracy? Share of the population 16-65 years old at each skills level per country



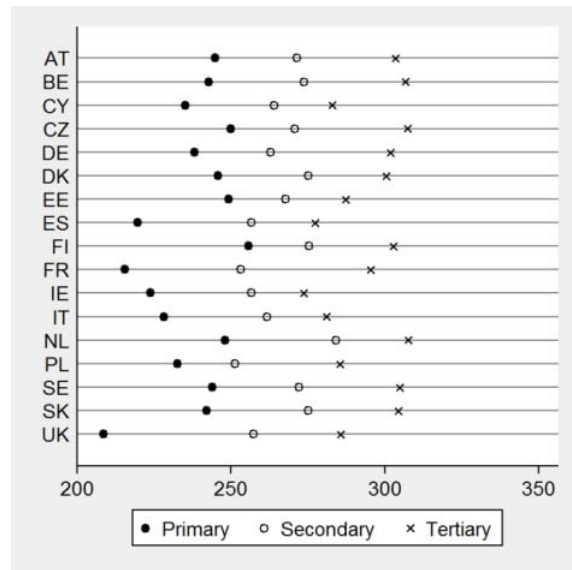
Source: Survey of Adult Skills (PIAAC), ordered by the share of level 1 and below. Missing: did not take the test.

Figure 11: Differences in literacy and numeracy proficiency across education levels

(a) PIAAC Literacy Score



(b) PIAAC Numeracy Score



Source: Own calculations based on Survey of Adult Skills (PIAAC) (OECD, 2012)

Note: Scores reflect weighted averages and are on a scale from 0-500.

Research has shown that educational attainment levels are not always fully comparable across Member States. The Survey of Adult Skills (PIAAC) shows a strong variation in basic skills (in particular numeracy and literacy) levels across graduates from different Member States (Figure 11). Most notably among Member States participating in the survey, upper secondary education graduates from FI and NL have similar or higher literacy and numeracy scores on average than tertiary education graduates in ES, IE and IT.

Not having attained a sufficient basic skills level has a clear effect on labour market participation and employment possibilities. Among the 64 million aged 25-64 not having attained secondary education in 2014⁷⁹:

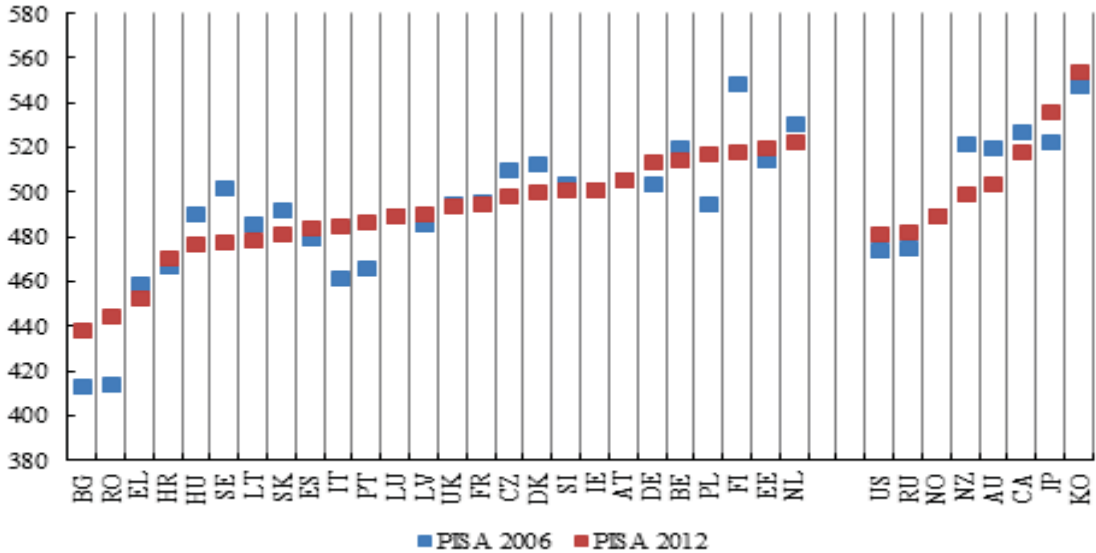
- 23.3 million were inactive in the labour market (36.4% of all low-qualified Europeans).
- 40.7 million were active in the labour market (63.6% of all low-qualified Europeans) including:
 - 6.6 million low-qualified Europeans were unemployed (16.3% of all active low-qualified Europeans);
 - 34.1 million low-qualified Europeans were employed (53.2% of all active low-qualified Europeans).

Initial education and training systems are the main providers of the development of the basic skills required for labour market participation. They face a number of challenges, such as early school leaving. In addition, not all those who complete secondary education achieve at least the minimum level of basic skills. An early indication is given by the OECD's PISA

⁷⁹ Calculation based on: (1) Unemployment rates by age and educational attainment level (%) (2) Active population by age and educational attainment level (1 000) (3) Population by age and educational attainment level (1 000), according to Eurostat, Employment Statistics, 2016

proficiency tests among 15 year old pupils. Figure 12a and 12b present average PISA numeracy and literacy scores of 15-year olds by country, and show how they changed over time.

Figure 12a: Proficiency in numeracy as measured by PISA in 2006 and 2012



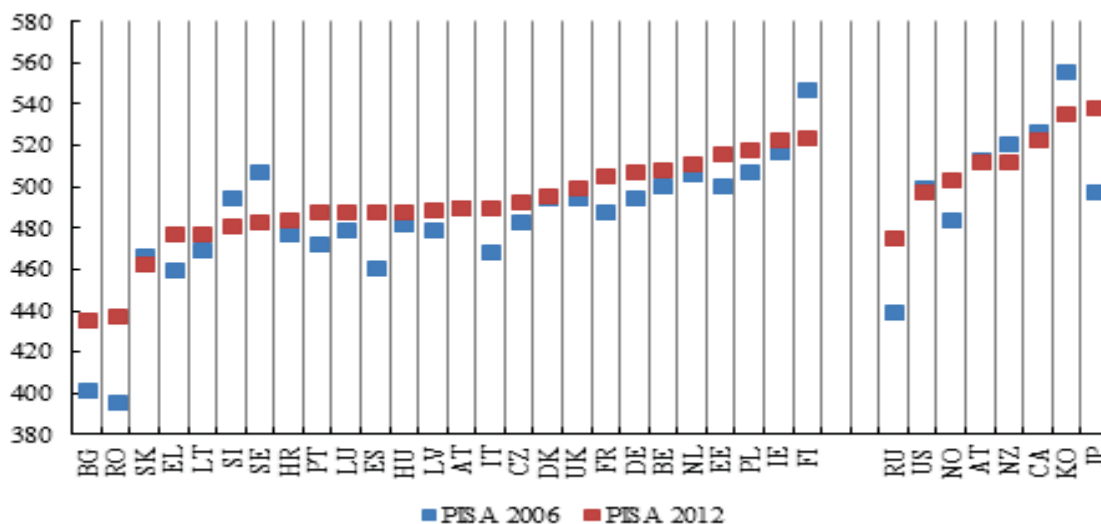
Source: OECD (2014)

In international comparison, many EU Member States' average performance in numeracy is similar to that of Norway, and better than of the United States and Russia; but below the performance of high-performing Asian countries such as Japan and Korea and of Canada, again supporting the need for further improvement in the EU.

However, there is broad variation between individual countries within the EU. Both for literacy and for numeracy, there are some EU Member States that have mean scores at par with Canada, which means they are among the best performing countries globally. In the domain of mathematics, these are the Netherlands, Estonia, and Finland; in the reading domain, these are Finland and Ireland. At the other end, some Member States are trailing behind significantly. In particular Bulgaria and Romania still have a long way to go to reach even the level of Norway, as they perform worse than the United States and Russia.

The picture shows some signs of convergence, in the sense that the lowest performers (Bulgaria and Romania) made substantial improvements between 2006 and 2012; but also, on the other hand, that the scores of the best performers in 2006 (Finland, the Netherlands and Belgium) slightly deteriorated by 2012.

Figure 12b: Proficiency in literacy as measured by PISA in 2006 and 2012



Source: OECD (2014)

Low-skilled adults face a number of challenges. Low-qualified adults are three times less likely to participate in learning compared to high-qualified adults. In real terms this means that in the EU28, in 2014 of all European aged 25-64:

- Only 2.8 million of low-qualified adults (or 4.3% of all those aged 25-64) whose highest educational attainment level is lower secondary participated in education and training (in last 4 weeks);
- Only 0.6 million low-qualified adults (or 1% of all those aged 25-64) whose highest educational attainment level is lower secondary participated in **formal** education, and;
- Only 2.2 million low-qualified adults (or 3.4% of all those 25-64) whose highest educational attainment level is lower secondary participated in **non-formal** education.⁸⁰

61.2 million of low-qualified adults (95.7%) **did not participate** in education and training.⁸¹

Not only do lower-qualified persons need more learning opportunities, they also require more learning hours to have a durable impact on their skills levels enabling them to acquire a qualification. However, in practice, highly qualified adults receive around 45% of all training hours, medium qualified people receive about 42% and low-qualified people receive only 13% of all hours.⁸²

Adults' limited engagement in further learning is due to structural and situational obstacles, which are closely interlinked.

The main structural problems that hinder the participation of low-skilled adults in learning are⁸³: limited outreach and guidance, limited opportunities for skills audit and validation which would assess the skills they have and recognise any skills acquired informally and non-

⁸⁰ Eurostat, Labour Force Survey 2015

⁸¹ Eurostat, Labour Force Survey 2015

⁸² European Employment Policy Observatory (EEPO), Thematic Review Synthesis: Upskilling Unemployed Adults (aged 25 to 64), The Organisation, Profiling And Targeting Of Training Provision, Publications Office of the European Union, 2015

⁸³ Eurydice Report: Adult education and training in Europe, Publications Office of the European Union, 2015, and Eurostat, Adult Education Survey.

formally, limited individualised support and limited flexibility of adult education and training provision. In most Member States, guidance services focus largely on unemployed people, while adults who are in employment or who are economically inactive as well as being low-skilled risk falling outside the focus of the guidance services⁸⁴. Adults find it easier to take part in further education and training if the skills that they have acquired outside the formal education system (e.g. at work or in voluntary activities) can be validated and recognised. However, most countries still need to develop validation arrangements.

Situational obstacles relate to the specific context of the individuals concerned and include family responsibility, conflicting time schedule, costs, lack of employer support, proximity concerns etc. Among these, the first two appear to be the most frequently cited obstacles in the Adult Education Survey. Lack of motivation is another significant obstacle. Research also shows that those with weak basic skills are often unable or unwilling to recognise their weaknesses and, because of this, see no need to improve skills. The lack of engagement of the low-skilled adults in training is possibly influenced also by poor experience of schooling⁸⁵ or 'low skills-poor jobs trap' (50% of adults that did not participate in education and training were not motivated to do so because it was not immediately needed for the job⁸⁶).

To address the above challenges and to tackle low skills in Europe, the European Commission is proposing a Council recommendation to establish a **Skills Guarantee** initiative. **The evidence underpinning this proposal is further elaborated in Annex 1 of this Staff Working Document.**

2.2.2. Transversal skills and other key competences

New ways of working, such as the collaborative economy, increased independent and contract-based work, and more frequent job changes (by necessity or opportunity) call for a broader set of skills. According to one survey of companies, 40% of employers in the EU report difficulties in finding candidates with the right skills⁸⁷, many of them stressing a lack of transversal skills⁸⁸ among job applicants. These can be defined as skills that are learned in one context in daily life, study or work and can be transferred to another context in daily life, study or work.

Many Member States have adapted and embedded at least some of the key competences defined in the 2006 Key Competences Recommendation in curricula for school education. Eight competences were identified: communication in the mother tongue; communication in foreign languages; mathematical competence; basic competences in science and technology; digital competence; learning to learn; social and civic competences; sense of initiative and entrepreneurship; cultural awareness and expression.

The Key Competences framework marked a shift towards a learning outcomes approach, away from measuring educational achievement based on length or setting of study. Each competence was defined in terms of knowledge, skills and attitudes appropriate to the context.

⁸⁴ The regular European inventory on validation published by Cedefop, <http://www.cedefop.europa.eu/en/events-and-projects/projects/validation-non-formal-and-informal-learning/european-inventory>

⁸⁵ Ibid

⁸⁶ European Commission, Employment and Social Developments in Europe 2015, Publications Office of the European Union, 2016

⁸⁷ http://www.eurofound.europa.eu/sites/default/files/ef_publication/field_ef_document/ef1502en_0.pdf

⁸⁸ OECD/European Union, The Missing Entrepreneurs 2015: Policies for Self-Employment and Entrepreneurship, OECD Publishing, 2015

While this framework has proven its value reinforcing the shift to a learning outcomes approach, its implementation also showed some drawbacks⁸⁹. Surveys and studies identified as areas for improvement: (i) embedding transversal skills into curricula; (ii) addressing all levels as insufficient emphasis on key competences were found in VET and adult education and as informal and non-formal learning were ignored, (iii) addressing all kind of learners as disadvantaged groups did not benefit fully; (iv) using innovative pedagogical approaches; and (v) effective design of useful assessment tools.

Many young people still lack a sufficient range and level of transversal skills (critical thinking, creativity, communication). Furthermore, there are on-going challenges with implementing high quality approaches to developing the key competences in young people, which include understanding the nature and benefits of the competences, ensuring a progression of skills development (including classroom approaches and assessment), mechanisms for monitoring and evaluating local and national initiatives, and validating key competences acquired through informal and non-formal learning.⁹⁰

While implementing the Key Competences framework most Member States focussed on at least some basic skills in primary and secondary school education (literacy, numeracy and/or Maths, Science and Technology) but the majority of Member States pay less attention to transversal skills (see Figure 13).⁹¹ Furthermore the demand for certain transversal skills by employers and industry has increased considerably⁹². This raised the question whether the eight key competences identified in the 2006 EU Recommendation are up to date. **With this in mind, the Commission is proposing to review the Key Competences for Lifelong Learning and the accompanying European Reference Frameworks in early 2017.**

The need to rethink the core skills to be taught and learned is not only visible in Europe but a worldwide concern. International players such as OECD (through PISA and PIAAC), Assessment of 21st Century Skills partnership (ACTS21 -worldwide), UNESCO, and BEAR in the US and Australia have started to broaden the scope of traditional school subjects (mother tongue, foreign languages, mathematics and science) and are introducing transversal skills. This international work, using the transversal skills below, is a starting point for further work:

Chart 1: Transversal Skills

Ways of thinking:

- *Creativity and innovation*
- *Critical thinking, problem solving, decision making*
- *Learning to learn, metacognition*

Ways of working

⁸⁹ Review of the implementation of the Framework, set out in the 2010 Communication 'Key competences for a changing world'. <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2009:0640:FIN:EN:PDF>

2012, Rethinking Education Communication

⁹⁰ European Commission/EACEA/Eurydice, Developing key competences at school in Europe: Challenges and Opportunities for Europe, Eurydice Report, Publications Office of the European Union, 2012

⁹¹ Eurydice study of 2012 looked at the use of Key Competences in schools;2012, the Key Competences Network on School Education (KeyCoNet) has continued work on the Key Competences Framework

⁹² References to outcomes of the feasibility study on citizen's tool for transversal skills

- *Communication*
- *Collaboration (teamwork)*

Tools for Working

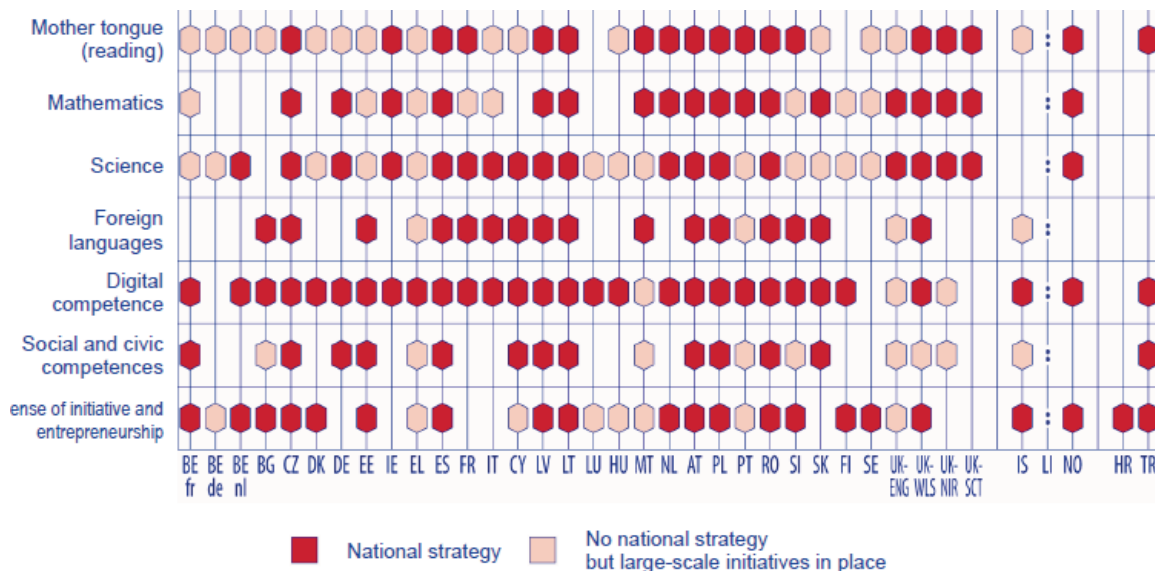
- *Information literacy*
- *Digital literacy*

Living in the World

- *Citizenship (local and global)*
 - *Life and career*
 - *Personal and social responsibility (incl. cultural awareness)*
-

Overall these competences are defined as soft, transversal, or generic skills, covering skills, attitudes and knowledge and have been widely recognised as central to the jobs and qualifications for this century.

Figure 13: Extent to which key competences are taken into account in Member States' education systems



Source: Eurydice.

Country specific notes

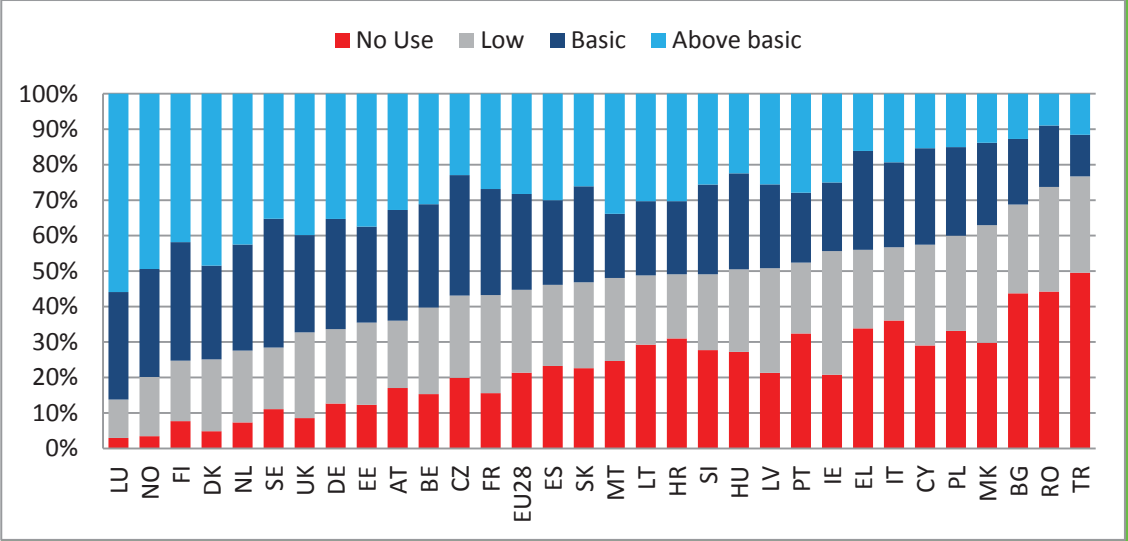
Czech Republic: There is only an overarching strategy which includes general measures to support key competences.

Sweden: The large scale initiative for reading concerns only ISCED levels 1 and 2.

2.2.3. Focus on digital skills

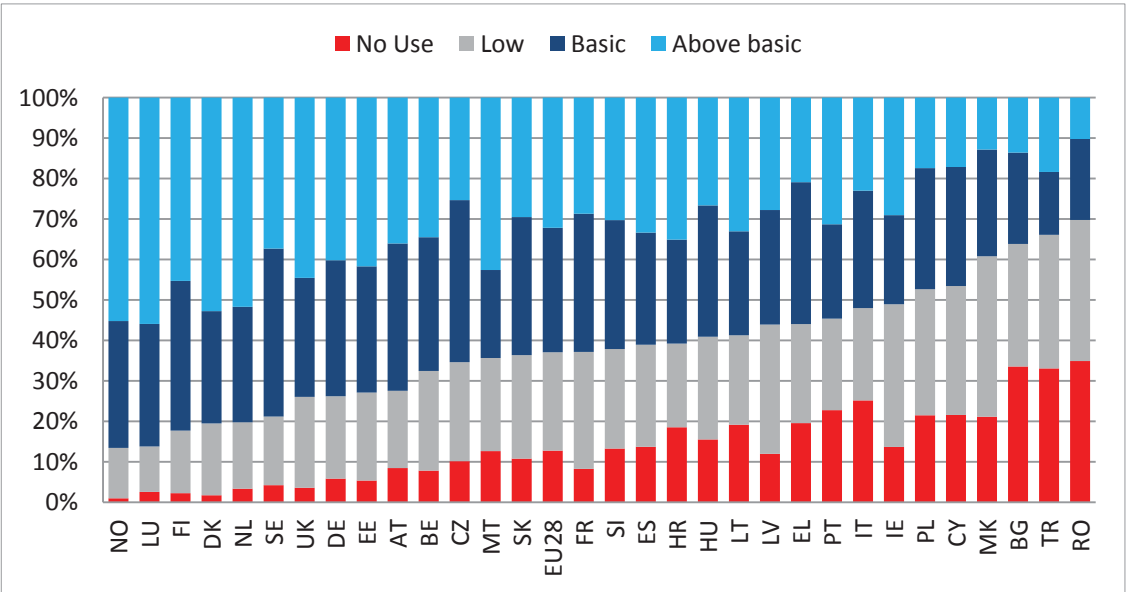
Research finds that 23% of the EU28 population has low digital skills, and an additional 21% does not use the internet (Figure 14). Amongst the labour force the figures are 24% and 13%, respectively (Figure 15). This is problematic, as increasingly employability, use of public services and participation in society more generally relies on the use of ICT and online services. Again, these figures do hide substantial variation among Member States.

Figure 14: Digital skills of the EU population and NO, MK and TR (% individuals with above basic, basic and low digital skills and no internet use)



Source: Digital scoreboard, 2015 (Commission services based on Eurostat data)

Figure 15: Digital skills of the labour force (% labour force with above basic, basic and low digital skills and no internet use)



Source: Digital scoreboard 2015 (Commission services based on Eurostat data)

Digital skills are lacking in Europe at all levels: basic user, advanced user and ICT professional skills. The Commission's Digital Skills Indicator (published together with the Digital Economy and Society Index - DESI) for 2015 shows that 45% of the EU population lack a sufficient level of basic digital skills and around half has none at all.⁹³ Only around 32% of the EU population has more than basic user skills. These are the skills that every citizen needs for working, living and learning in the knowledge society. Digital skills can now be considered as basic due to their role in providing basic functional literacy in today's world. While it is true that digital skills is treated in many curricula as a subject in its own right, the fact that they can be transferred from one area to another means that they can also be considered transversal.

At European level, the Commission has been addressing digital skills gaps through a number of initiatives including in particular its "Opening-up Education" initiative to modernise education for the digital age, the "e-Skills for jobs" awareness raising campaign on ICT professional jobs, "EU code week" and the "Grand Coalition for Digital Jobs".⁹⁴

The Digital Skills Indicator is based on the European Digital Competence Framework for Citizens (DigComp), which identifies, defines and describes the digital skills needed by all citizens as part of the key competences for lifelong learning.⁹⁵ DigComp has also been included in Europass as a self-assessment tool for job-seekers to self-evaluate their digital competence and have it described in their CV.

At national and regional level, DigComp is being used as the reference for self-assessment tools for employability (Basque Country and Andalusia in Spain), for the development of strategic policies (Italy, Malta, Navarra in Spain, Poland and the United Kingdom), for the assessment of education and training content and student performance (Estonia, Flanders in Belgium, Region Emilia Romagna in Italy and Slovenia) as well as for teachers professional development⁹⁶ (Croatia, Estremadura in Spain, Lithuania and Spain).⁹⁷

The lack of digital skills also affects citizens as consumers. Skilled consumers can compare and contrast information collected through digital channels, thus digital skills are enablers of better consumer decisions at the moment of choosing goods and services both online and offline. For this reason, the Commission is developing a framework based on the DigComp targeted to consumer skills (DigCompConsumers), which is expected to be completed by summer 2016⁹⁸. In addition, the education materials and e-learning modules on the Consumer Classroom⁹⁹ and Consumer Champion¹⁰⁰ platforms can be used by consumer associations and other intermediaries working with vulnerable consumers to help develop further consumer education materials in light of the changes brought by digitalisation. This is the case for instance in the energy sector as Consumer Champion materials already exist to support consumers with collective supplier switching which has been greatly facilitated by the digital revolution.

⁹³ The Digital Agenda Scoreboard measures progress of the European digital economy. Along its Human Capital dimension it measure the digital skills of EU citizens <http://ec.europa.eu/digital-agenda/en/digital-agenda-scoreboard>

⁹⁴ European Commission website, "Grand Coalition for Digital Jobs", Digital Single Market

⁹⁵ Ferrari, A., DIGCOMP: A Framework for Developing and Understanding Digital competence in Europe, JRC Scientific and Policy Reports, Joint Research Centre, Publications Office of the European Union, 2013

⁹⁶ The Commission is currently working on the definition of a specific digital competence framework for teachers (DigCompTeach) which is expected to be issued by the end of 2016.

⁹⁷ European Commission website, "Being digitally competent – a task for the 21st century citizen", Joint Research Centre

⁹⁸ to be published at <https://ec.europa.eu/jrc/digcompconsumers>

⁹⁹ See: <http://www.consumerclassroom.eu/fr/>

¹⁰⁰ See: <http://www.consumerchampion.eu/>

The Grand Coalition is a cross-European multi-stakeholder partnership aimed at reducing digital skills gaps and making the most of the job opportunities offered by digitalisation in Europe. So far, the initiative has attracted around 80 stakeholder pledges, largely from ICT companies, offering training, apprenticeships, and placements and/or carrying out awareness raising activities to encourage young people to study and pursue careers in ICT.

It has also raised political awareness and support for these issues. In 13 Member States, national coalitions on digital skills have been set up and more are planned. Initiatives by these coalitions have led to the training of many thousands of Europeans, in the workforce at large, unemployed, teachers, and young people in digital skills, including coding. Some Member States have also produced digital skills strategies and a small number have moved to introduced computing (including coding) into the school curricula. In December 2015, a first informal Ministerial level debate on digital skills took place.

These activities on digital skills have made a valuable contribution to reducing digital skills gaps in Europe. However, they have largely relied on the voluntary active involvement of a group or groups of dedicated stakeholders. A more active engagement of Member States, including adequate funding, would be essential to modernise education and training systems and provide their citizens with the skills needed for a thriving digital economy.

2.2.4. Focus on entrepreneurial skills

Among the competences identified as transversal by the Recommendation on the Key Competences for Lifelong Learning,¹⁰¹ Sense of initiative and Entrepreneurship has been under the spotlight for the past few years. The 2012 results from the annual Global Entrepreneurship Monitor¹⁰² show that only in a handful of the Member States do more than half of the adult population believe they have the required skills and knowledge to start a business. Furthermore, the 2012 Flash Eurobarometer (354)¹⁰³ Entrepreneurship in the EU and beyond shows that only half of the EU population aged 15 years and above agree that their school education helped them to develop a sense of initiative and a sort of entrepreneurial attitude, with 22% totally agreeing and 28% tending to agree. Advocated by the Small Business Act for Europe,¹⁰⁴ the Communication on Rethinking Education¹⁰⁵ and the Entrepreneurship Action Plan 2020,¹⁰⁶ the need to promote entrepreneurship education and entrepreneurial learning has led to a wealth of initiatives across Europe¹⁰⁷. In 2014/15, 29 of 38 countries/regions surveyed¹⁰⁸ in the Eurydice 'Entrepreneurship Education at School' Report have either specific or broader strategies that include specific links to entrepreneurship education. Beyond the 11 countries/regions with a specific strategy, there are 18 with a broader strategy related to entrepreneurship education. Only nine countries/regions (eight

¹⁰¹ European Parliament and Council (2006). Recommendation of the European Parliament and of the Council of 18 December 2006 on key competences for lifelong learning. Official Journal of the European Union, (2006/962/EC).

¹⁰² Kelley D., Singer S., Herrington M., 2015/16 Global Report, Global Entrepreneurship Monitor.

¹⁰³ European Commission, Entrepreneurship in the EU and Beyond, Flash Eurobarometer 354, 2012

¹⁰⁴ European Commission (2008). Communication to the Council, The European Parliament, The European Economic and Social Committee and the Committee of the Regions, "Think Small First" a "Small Business Act" for Europe, COM(2008) 394 final, SEC(2008) 2101 and 2102. Brussels, 26.6.2008

¹⁰⁵ European Commission (2012). Communication to the Council, The European Parliament, The European Economic and Social Committee and the Committee of the Regions, Rethinking Education: Investing in skills for better socio-economic outcomes, COM/2012/0669 final, SWD(2012) 371-377

¹⁰⁶ European Commission (2013a). Communication to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Entrepreneurship Action Plan 2020, Reigniting the entrepreneurial spirit in Europe, COM(2012) 795 final

¹⁰⁷ Bacigalupo M., Kampylis P., Punie Y. (Eds.), Entrepreneurship Competence: An Overview of Existing Concepts, Policies and Initiative., Final Report, JRC science and Policy Reports, Publications Office of the European Union, 2015

¹⁰⁸ EU 28 (including BE fr, BE de, BE nl, UK-ENG, UK-WLS, UK-NIR, UK-SCT and excluding DE, IE, LI) + BA, IS, LI, ME, MK, NO, RS and TR.

Member States) do not have relevant strategies (Croatia, Italy, Cyprus, Luxembourg, the Netherlands, Malta, Portugal, the United Kingdom (England) and Iceland).¹⁰⁹ While entrepreneurship education is increasingly recognised in primary education, it remains most common in upper secondary education. At upper secondary level, approaches are varied: it can be seen either as a separate subject or as an integral part of other subjects.

There is growing evidence of the benefits that higher levels of entrepreneurial attitudes and skills can bring. A mapping exercise of research on the impact of entrepreneurial education, commissioned in 2013 by the Commission¹¹⁰ shows that entrepreneurship education is successful in fostering the entrepreneurial skills of young people, bringing benefits not only to the individual, but also to the economy and to society at large. This is because the likelihood that graduates having had entrepreneurship education will participate in a business start-up is substantially higher, the frequency with which they set up businesses seems to be higher and they become self-employed earlier in their careers. In addition, the enterprises run by these individuals are perceived as more innovative and the expectations regarding employment growth and turnover growth are higher¹¹¹. Entrepreneurial skills have also a more general impact on the employability of young people, contributing to higher employment rates.

Despite the focus on the promotion of entrepreneurial skills, there is no consensus on what its distinctive constituents are, how it should be learnt and taught and in what learning context. This is reflected in a very fragmented entrepreneurship education landscape in Europe.¹¹² Across Member States no common definition of entrepreneurship competence is adopted, nor is the same priority given to the definition of learning outcomes for entrepreneurial learning. To improve the situation, the Commission is fostering a common understanding of what entrepreneurial skills are and what the relative learning outcomes¹¹³ are as it has previously done for digital ones¹¹⁴, gathering evidence on good practice projects¹¹⁵ and helping relevant actors to exchange knowledge.

2.2.5. Relevance of higher level education

More advanced, complex skills are developed primarily in higher education systems. During the past decade, enrolment and attainment grew steadily, while higher education graduates continued to enjoy persistent advantages in both finding employment (Figure 16) and earning income¹¹⁶.

Despite these successes, European higher education systems face a number of key challenges in responding to increasing and changing demand for high-level skills. The results of the

¹⁰⁹ European Commission/EACEA/Eurydice, *Entrepreneurship Education at School in Europe*, Publications Office of the European Union, 2016

¹¹⁰ European Commission, *Entrepreneurship Education: A road to success*, Publications Office of the European Union, 2013

¹¹¹ European Commission, *Effects and impact of entrepreneurship programmes in higher education*, Publications Office of the European Union, 2012

¹¹² Eurydice, *Entrepreneurship Education at School*, Eurydice Reports, Publications Office of the European Union, 2016

¹¹³ On the definition of entrepreneurship as a competence, the European Commission is defining a common reference framework including learning outcomes and proficiency levels. See European Commission website, "Entrepreneurship Competence", Joint Research Centre

¹¹⁴ European Commission website, "Being digitally competent – a task for the 21st century citizen", Joint Research Centre

¹¹⁵ European Commission, *Young People and entrepreneurship, European good practice projects*, Youth in Action Programme, Publications Office of the European Union, 2013

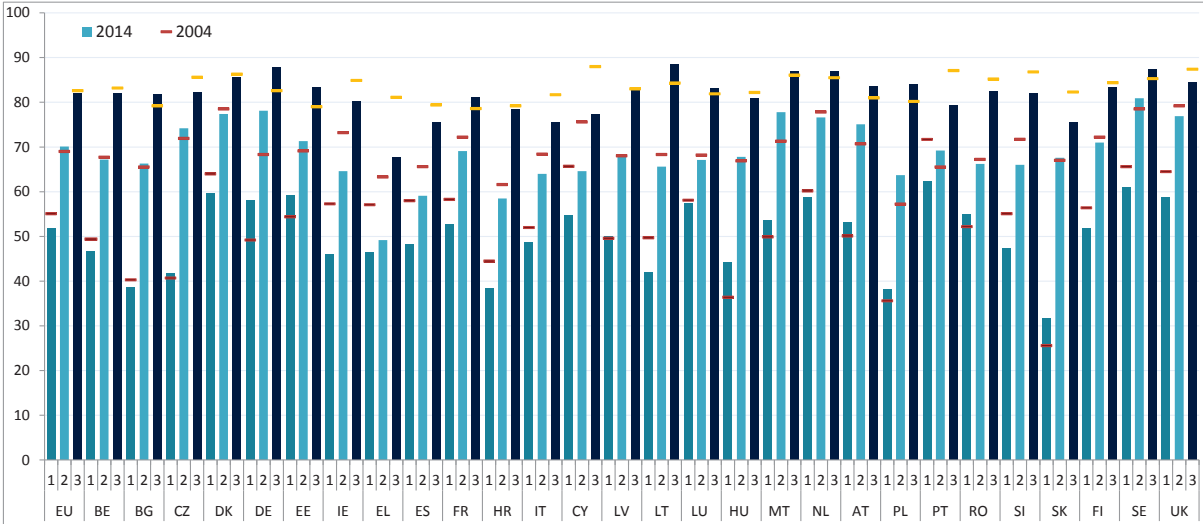
¹¹⁶ In 2012, tertiary graduates aged 25-34 in the EU earned on average 40% more than their peers with post-secondary, non-tertiary education at most. For the whole labour force the earning advantage was 60%. See OECD, *Education at a Glance: OECD Indicators*, OECD Publishing, 2014, Indicator A6.1a

recent public consultation on the modernisation of higher education (see **Annex II for a full analysis**) highlight, among other key issues, the following:

1. There is a need for higher education and research performing institutions to prepare students and researchers for a rapidly changing labour market, where established occupations are constantly evolving. In such a context, the ability to adapt to change, think critically and solve problems independently, as well as other transferable skills such as high-level digital literacy, are more crucial than ever, which means it is all the more important for to implement student-centred higher education curricula and research programmes that help individuals acquire the skills sets they need.
2. Higher education also needs to respond to short to medium-term skills needs in regional and national labour markets. Demand for higher education graduates from particular fields of study varies between regions and national contexts. For example, although there is not generalised undersupply of Science, Technology, Engineering and Maths (STEM) graduates in the EU, shortages of specific STEM skills affect particular regions. Here, good guidance for prospective students and understanding of relevant skills needs within institutions are particularly important.
3. The changing labour market and high skills requirements are increasing demand for lifelong learning and continuous professional development, as people seek to up-skill over their careers. However, provision of lifelong learning options in existing higher education institutions is often limited.
4. To respond effectively to high-level education and training needs, higher education systems need to provide an adequate diversity of study options, including good quality professional programmes, good work-based learning opportunities and flexible courses accessible for those already in work. In this respect, the potential of online and blended learning is only starting to be tapped into.
5. Building effective higher education systems requires sustainable funding, which makes it possible to design and deliver high-quality, relevant programmes.

As mentioned in the introduction, a public consultation has recently taken place to have a wide range of stakeholder's views on the modernisation of higher education. A detailed analysis of the results of the consultation is presented in ANNEX II of this SWD.

Figure 16: Employment rates by level of education



Source: Eurostat. 1=below upper secondary education (ISCED: 0-2); 2=upper secondary (3-4); 3=tertiary (5-8)

In doctoral education as in other levels, exposure to industry and transferable skills training¹¹⁷ is increasingly encouraged. Today, certain institutions in Europe have started training doctoral candidates not only for an academic career. However, as many PhD will go on to work outside academia, they increasingly require the ability to adapt to another environment and to develop new essential skills. Essential skills such as people management, leadership, intellectual property rights and entrepreneurship, remain less common forms of 'structured' training for PhDs: around one out of ten reports receiving such training. When looking at intersectoral mobility (>3 months) during the PhD, 23% of researchers have had a non-academic research experience (in public, non-for-profit or private industry); a subgroup of only 4% have experience with private industry. This would suggest that more attention might be given to skills development during PhD training and continuous professional development. 'Transferable' skills and experience outside academia are, for example, embedded in the existing Principles for Innovative Doctoral Training¹¹⁸.

Globally speaking the role of Science Education is becoming a crucial element that provides overall necessary curiosity, skills and knowledge to all citizens. Modern Science Education will help the youth to become participative citizens that are able to make right choices for themselves and for the society, and make it easier for them to stay employed or increase their employability and adaptability to the ever faster technological development and innovation process in a global economy.

This calls for enhancing the provision of both 'core' skills and transversal skills for researchers, innovators and entrepreneurs, notably for linking science to society. Hence, the components of the EU's Responsible Research and Innovation programme (more specifically science education, gender, ethics) should be taken into account in the curriculum development in order to provide very societally relevant and high quality science education and training to the young, independently of whether they choose a career in academia or the private sector.

Equipping researchers already at a very early stage with the 'right' skills has become a basic requirement of the ever faster evolving culture Europe belongs to. To provide for such opportunities, the 2005 'European Charter for researchers and the Code of Conduct for the recruitment of researchers' (Charter and Code) set out the rights and obligations for researchers with respect to their career.

Being top priority on the political agenda, appropriate skills, in particular e-skills, literacy, data management skills etc. need to be provided for to all researchers (and even already during curricula) to allow even early stage researchers to work in an Open Science environment, irrespective their career choice.

¹¹⁷ IDEA Consult, Support for continued data collection and analysis concerning mobility patterns and career paths of researchers, MORE2 Final Report, 2013

¹¹⁸ European Commission, "Principles for Innovative Doctoral Training", 2011

2.2.6. School to work transitions

Transition from school to work is a critical step for many young persons. Lacking work experience, but unable to obtain that experience without a job, throws young people into a vicious circle. Young people that do not manage to get their first work experience risk being permanently excluded from the labour market.

The European Union Labour Force Survey results show that “among medium-level VET programmes, the transition to work is 14% faster for work-based programmes than for school-based programmes.”¹¹⁹

Medium level VET graduates are also more likely to have a permanent first job, and are less likely to find a first job with a qualification mismatch¹²⁰. It must be born in mind, however, that general education programmes tend to orient their graduates towards further education rather than direct entry into the labour market.

There are significant differences between countries. The transitions are faster in countries where school and work-based learning are closely connected. Furthermore, as VET graduates tend to be employed in occupations which are closely related to their studies, the likelihood of under-qualification is lower for them than for graduates from general education¹²¹

Evidence also shows that young adults who finish initial VET programmes are better placed to access jobs compared to those young adults, who complete initial general education programmes and do not continue into further education. The employment rate of young VET graduates is 73.3 %, whereas that of young general secondary education graduates who did not go on to a higher level of education is 59.7 %. These are average trends, to which only CY, EL, PT and UK are exceptions¹²².

In May 2012, the European Council agreed on a European benchmark on the share of employed graduates from education and training. The aim of this benchmark is to help to identify education and training policies which improve the transition between education and training and work. It was agreed that by 2020, the share of employed graduates (20-34 year olds) having left education and training no more than three years before the reference year should be at least 82% (as compared to 76.5 % in 2010). The current state of this indicator overall is 76.1 %, which shows that there has not been improvement in this area. The employment rate of recent higher education graduates is 80.5 %.

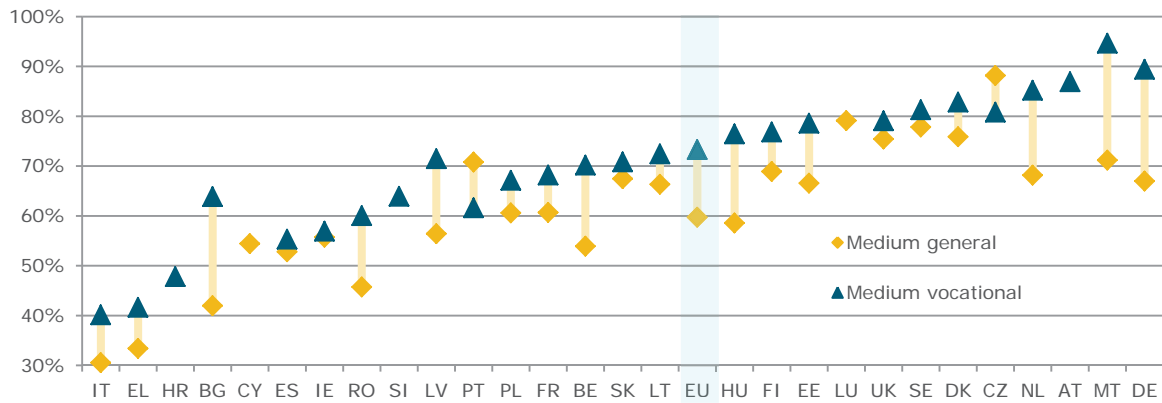
Figure 17: Employment rates by orientation of education qualification

¹¹⁹ Cedefop, Labour market outcomes of vocational education in Europe, Evidence from the European Union labour force survey, Publications Office of the European Union, 2013

¹²⁰ Idem

¹²¹ Idem

¹²² Flisi S., Goglio V., Education and youth labour market outcomes: the added value of VET, JRC Technical Report, Publications Office of the European Union, 2015



Source: Eurostat (LFS, 2014), based on a May 2015 extraction. Note: The indicator captures the employment rate of 20 to 34 year-old persons with ISCED 3 or ISCED 4 education attainment *and no longer in formal or non-formal education or training*. Countries are ranked in ascending order by the total employment rate (ISCED 3 and ISCED 4). From Education and Training monitor 2015

Several measures have been taken at European level to contribute to reaching the employability benchmark. One of them is the Council Recommendation for Youth Guarantee (a report/communication foreseen later in 2016). Other initiatives are the European Alliance for Apprenticeships (see below) and the Quality Framework for Traineeships, which was also launched as part of the youth employment initiative. The business-led initiative European Pact for Youth is also active in the field (see also below).

2.2.7. Role of work-based learning and business-education partnerships

Work-based learning and apprenticeships facilitate transitions to the labour market, thus improving employability; studies show that around two out of three apprentices are hired directly after their training¹²³. They benefit also the training companies because, in addition to creating a 'training culture' in an enterprise, they can provide a supply of people trained to meet the company's specific needs. Apprenticeships and work-based learning in general also enhance the competitiveness of enterprises and help adapting employees' skills. Work-based learning actually provides a valuable alternative, non-academic pathway to build quality employment and careers. In 2025, about 40% of jobs will require medium-level skills¹²⁴, typically acquired through vocational education and training.

However, currently only one in four initial VET students are in work-based programmes (see Figure 18)¹²⁵, which is in part due to the lack of attractiveness of apprenticeships and knowledge about employment prospects¹²⁶, but also the lack of companies, in particular SMEs, providing work-based learning for young people¹²⁷. Large companies, with over 250 employees, are most likely to offer apprenticeships (44%), compared to 31% of medium-sized companies (50-249 employees) and only 22% of small enterprises (10 to 49 employees).

¹²³ Ecorys "Apprenticeship and Traineeship Schemes in EU27: Key Success Factors", 2013

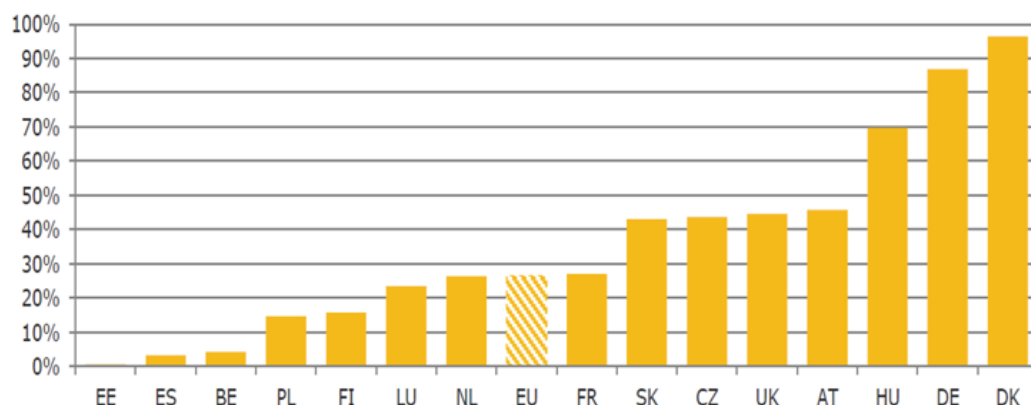
¹²⁴ Cedefop, 2016 (forthcoming).

¹²⁵ European Commission, European Alliance for Apprenticeships: Good for Youth, Good for Business, p.14, 2015

¹²⁶ Cedefop, Stronger VET for Better Lives, 2015

¹²⁷ Cedefop, Stronger VET for Better Lives, 2015

Figure 18 Initial VET students in combined work- and school-based training



Source: Cedefop calculations based on Eurostat (UOE) data for 2012 (ISCED 1997 level 3). See Cedefop (2013), *On the way to 2020: data for vocational education and training policies* (<http://www.cedefop.europa.eu/>).

The evidence shows that work-based learning is an effective way to prepare a smooth transition from education to work, which is an insight that governments, social partners and VET providers can use to design effective policies. A working group of experts under the framework for European cooperation in education and training (ET2020) reflected upon the ways to maximise the potential of work-based learning. In addition to giving real-life examples of how apprenticeship schemes can be put into practice, the final document "High-performance apprenticeships & work-based learning: 20 guiding principles"¹²⁸ focusses on four areas that need to be tackled when introducing and improving work-based learning schemes; national governance and social partners' involvement; support for companies, in particular SMEs, offering apprenticeships, attractiveness of apprenticeships and improved career guidance; and quality assurance in work-based learning. These are key areas for successful apprenticeships, but also areas where more support is needed.

Constructive cooperation between all apprenticeship partners is key to good quality apprenticeships. Companies' participation is crucial as it is them who provide the practical training part in apprenticeship schemes, which is why education-training partnerships are duly gaining more attention in vocational training. Strong partnerships with social partners and other relevant stakeholders such as chambers of commerce and various competent institutions were highlighted as one of the transversal priorities in the Riga conclusions on Vocational education and training priorities up to 2020¹²⁹.

Cedefop has undertaken apprenticeship reviews of Malta and Lithuania, and they are ongoing for Italy, Greece and Slovenia, whilst the ILO is carrying out similar work in Latvia, Spain and Portugal. The purpose of these reviews is to help the targeted countries to identify action to improve apprenticeship supply¹³⁰.

¹²⁸ European Commission website, "European Alliance for Apprenticeships", Employment, Social Affairs and Inclusion

¹²⁹ Latvian Presidency at the Council of the European Union, Ministry of Education and Science of the Republic of Latvia, European Commission, "Riga Conclusions 2015", 22.06.2015

¹³⁰ CEDEFOP, "High-performance apprenticeships & work-based learning: 20 guiding principles", 2015

Since 2013, the Commission has promoted apprenticeships through the European Alliance for Apprenticeships, a multi-stakeholder initiative. The Alliance aims at improving the quality, the quantity and the image of apprenticeships. To date, 26 Member States, 5 EFTA and EU Candidate Countries, as well as around 100 organisations, including companies, have made commitments and pledges to take concrete actions. A study has been launched to monitor progress and to reflect the future priorities for the Alliance with the results expected in early 2017.

But cooperation between the world of education and companies should take a comprehensive approach above and beyond apprenticeships. A European study by McKinsey¹³¹ showed that while 74 % of education providers believed their graduates were prepared for work, only 38 % of youth and 35 % of employers agreed. Similar results were found in the public consultation on the modernisation of higher education (see Annex II). Moreover, whilst close cooperation between the education sector and business improves the relevance of education and training needed for the world of work at all levels, they are not yet the norm, not even in the area of VET, let alone at other levels of education.

Within the European Pact for Youth aimed at improving youth employability and social inclusion, launched on 17 November 2014 by CSR Europe and supported by the Commission, companies committed themselves to creating 10,000 quality business-education partnerships and 100,000 learning opportunities for young people by 2017. Implementation of this joint engagement of EU and business leaders will be monitored through the Group of Leaders co-chaired by the Commissioner Marianne Thyssen and Viscount Etienne Davignon.

Partnerships can also be made on other issues, such as research, regional innovation or entrepreneurship. Guest lecturers from business in schools, job shadowing for teachers, and student visits in the workplace are other ways to cooperate, to mention but a few. In particular, SMEs with limited administrative resources may benefit from continuous cooperation with companies as well as support provided through business-education partnerships at the local level.

2.2.8. The role of mobility

Young people who study, train or volunteer abroad not only gain confidence and knowledge in other cultures and languages, but also strengthen key transversal skills which are highly valued by employers. Studies show that graduates with international experience fare much better on the job market¹³².

However, the number of young people benefitting from such an international experience is still limited. Only around 10% of higher education students in Europe go abroad for at least 3 months during their studies, which is still far from the EU target of 20% by 2020.

Mobility for apprentices and IVET learners is still underdeveloped compared to mobility for students in higher education within the Erasmus+ programme and beyond. Within Erasmus+, the resources allocated to VET mobility allowed to fund about half of the eligible applications (in 2014, 53%, compared to 71% in higher education), and while most VET mobility experiences are short, individual participants were less than one third the number of mobile

¹³¹ Mourshed M., Patel J., Suder K., "Education to Employment: Getting Europe's Youth into Work", McKinsey Center for Government, 2014

¹³² [European Commission, "Erasmus Impact Study Regional Analysis", Publications Office of the European Union, 2016](#)

higher education students¹³³. However, there is also a lack of reliable data IVET mobility outside of the Erasmus+ programme is difficult to measure. There is also a need to improve the quality of VET mobility, in order to increase mobility flows and to contribute to reaching the VET mobility benchmark of 6%. The benchmark was agreed by the Council of the European Union in May 2012. While setting the target, the Council also requested the Commission to establish a regular data monitoring systems for all mobility targets, including I-VET mobility. The Commission has initiated a data development exercise and, as part of this exercise, a pilot data collection has been implemented by Eurostat. The average I-VET learning mobility, based on the 16 countries that participated in the exercise and defined as formulated in the benchmark, was 3.1% (weighted average of those sixteen countries).

A Mobility Scoreboard should make the quality of the organisation of mobility and overall numbers more visible. Cedefop has produced a report demonstrating that collecting data and developing an IVET Mobility Scoreboard is feasible and that the scoreboard can be produced on a yearly basis¹³⁴.

2.2.9. Supporting transitions of adults

As working careers are changing and jobs are no longer for life, individuals have to update, increase or change their skills, hence continuing training and upskilling is a constant need. Work transitions, within the organisation, into a different one, or in a new sector, are the reality for an increasing number of people. Adults in employment, who do not engage in substantive upskilling or reskilling for five or more years, run the risk of being locked into particular ways of working. The actual knowledge base requires substantial updating, achieved partly through work, partly through career development activities outside work.¹³⁵

Good jobs are needed to develop good skills. Skill-intensive jobs with opportunities to acquire skills continuously are a pre-requisite so that individuals have incentives to engage in continuous learning as part of their jobs. Around 26% of EU adult employees have significant skill deficits, leaving scope to improve skills and productivity¹³⁶. The underqualified, however, though lacking qualifications needed for their jobs, are likely to possess a large stock of (non-formal or informal) skills to perform their jobs, thus indicating the need for validation or certification of their acquired, yet unrecognised, skills for the purposes of enabling their continued mobility and career progression in the labour market.¹³⁷

Adult education helps to improve economic growth and society. Adult education can reduce social inequality, increase inclusion, cohesion and active citizenship. Erasmus+ supports capacity building of adult education organisations and the improvement of teaching and learning provisions. The programme fosters the inclusion and employability of specific adult target groups with poor basic skills by supporting provisions for enhancing their basic skills and key competences.

The formation of skills through non-formal and informal learning is an investment by firms, in many respects akin to other forms of investments. Small and medium-sized enterprises (SMEs) provide less continuing vocational training to their staff relative to larger-sized

¹³³ Erasmus+ Programme Annual Report 2014, chapter 4.

¹³⁴ See: <http://www.cedefop.europa.eu/en/events-and-projects/projects/mobility-scoreboard> & Cedefop, Work programme 2016, p.31

¹³⁵ Cedefop, Navigating difficult waters: learning for career and labour market transitions, Publications Office of the European Union, 2014

¹³⁶ Cedefop, Matching Skills and Jobs in Europe, Insights from Cedefop's Skills and Jobs Survey, 2015

¹³⁷ Cedefop, Matching Skills and Jobs in Europe, Insights from Cedefop's European Skills and Jobs Survey, 2015

organisations, which partly reflects the skewed distribution of occupations in the latter and the more limited scope for vertical mobility within the organisation; for example, a greater share of professionals are employed in larger-sized firms while SMEs rely more on service and market sales workers. Nevertheless, there is evidence that, after taking into account their differential occupational/sectoral distribution, individuals in SMEs require a higher level and spectrum of skills to do their jobs compared to comparable workers in large establishments.¹³⁸

Workplace support is key to career development and transitions. Decisive factors are motivation (personal and work-related), whether time away from work is granted, or whether further training is financially possible. Successful learning in the workplace schemes is based on an initial assessment of participants' skills and motivation, validation of prior learning, individual training plans and tailored learning to help develop both key competences and job-specific skills.

But individual commitment to learning also needs to be supported and matched by workplace innovation practices. These are also important for the mutual learning between employees and transfer of knowledge within the company. European Commission's European Workplace Innovation Network (EUWIN) project¹³⁹ gathered important evidence and best practises in this regard. Building on EUWIN's experience, more practices of this kind should be promoted in European companies, especially SMEs, start-ups and innovation villages.

2.3. Making skills visible and comparable

2.3.1. Transparency and recognition of skills and qualifications: main issues

The lack of relevant skills is not the only cause for low employability and skills mismatches. In many cases, skills exist in the labour market but are not identified, exploited or rewarded. This leads to under-utilisation of the skills available in the economy. It also has implications for mobility of individuals between countries. Skills and qualifications acquired in a given country and in a specific economic sector might not be recognised or even properly understood by prospective employers of other countries and sectors. Skills acquired on the job or through other relevant experiences such as non-formal and informal learning are not necessarily recorded in a qualification or documented.

According to a 2014 Eurobarometer, 6% of EU citizens have tried to work or study in another EU Member State but were not able to do so. This was partly due to a lack of recognition of their qualifications and related support and information. Considering that 3.3% of the total labour force in 2013 was mobile, it is evident that there is potential for greater mobility also based on improved recognition of qualifications at EU level.

Recognition arrangements for qualifications have, in the EU context, focussed exclusively on access to regulated professions and on recognition of qualifications for Higher Education. In the field of academic recognition, recognition of higher education qualifications is provided for in the context of the Lisbon Recognition Convention. Important efforts have also been made to increase "trust" on qualifications without necessarily leading to automatic recognition – notably through the European Qualifications Framework.

¹³⁸ Ibid

¹³⁹ European Commission website, "Workplace Innovation", Growth

2.3.2 Recognition of professional qualifications and European professional card

Recognition arrangements for qualifications have, in the context of the achievement of the internal market, focussed on access to regulated professions i.e. professions access to which and pursuit of which is subject by virtue of legislative or administrative provisions to the possession of specific professional qualifications¹⁴⁰

Regarding recognition of qualifications in regulated professions, the European Union has developed a comprehensive system of legal texts and case law in order to allow the holder of a professional qualification to access and pursue that profession, or part of that profession as appropriate, in another Member State on a permanent or occasional and temporary basis, under the same conditions as nationals. The main tool is the 2005/36/EC Directive¹⁴¹, on the recognition of professional qualifications, besides some specific directives for given professions e.g. lawyers.

The revision of the directive 2005/36/EC in 2013 introduced the first EU-wide electronic procedure for the recognition of professional qualifications, the so-called European professional card (EPC). The EPC uses the Internal Market Information System (IMI) which is an electronic exchange information system between national authorities coordinated at European level and used in the context of the achievement of the internal market. The EPC offers an alternative and electronic method for professionals to get their qualifications recognised in other Member States. "Traditional" recognition procedures under the Professional Qualifications Directive remain nevertheless available, in parallel, to migrating professionals, who can still use them, if they so wish.

The EPC is based on on-line applications, on direct channels of electronic communications between national authorities and between national authorities and the applicants, on standardised and time-sensitive processes and on multilingual communication facilities. The EPC significantly improves transparency on document requirements and fees. Finally, the applicant whose qualifications will be recognised under this process will obtain an electronic recognition certificate but not a plastic card.

The EPC was formally launched on 18 January 2016 and is for the time being available to 5 professions: nurses responsible for general care, pharmacists, physiotherapists, real estate agents and mountain guides¹⁴². These professions were selected after thorough consultation with professional organisations, competent authorities and Member States. As of 30 March, 2016, 629 EPC applications were recorded in IMI and 44 EPCs had been issued. Applications cover all five professions and involve almost all Member States. The EPC could be extended to other mobile professions in the future in subsequent implementation phases. However, there is no set plan for such an extension yet.

¹⁴⁰ See article 3(1)(a) of Directive 2005/36/EC.

¹⁴¹ Directive 2005/36/EC of the European Parliament and of the Council of 7 September 2005 on the recognition of professional qualifications (Text with EEA relevance) OJ L 255, 30.9.2005, p. 22–142

¹⁴² Implementing Regulation (EU) 2015/983

2.3.3. Skills acquired outside the education system and through new forms of learning

Nowadays, skills relevant for the labour market can be acquired in a variety of different ways, both in formal education and through other non-formal or informal ways.

Online learning is one of these. MOOCs in the Higher Education (HE) and the research sector are increasingly a feature of HE education and research institutes and are more and more reaching a point of maturity. They are progressively becoming a standard element of credentialed University education, partially responding to the increasing demand for the higher education and training sector to provide flexible pathways to learning that are accessible and affordable.¹⁴³ A spring 2015 representative survey of Higher Education Institutions in five European countries (France, Germany, Poland, Spain and the United Kingdom) found that MOOCs are on the agenda of (41%) of HE institutions: 22% of HEIs declared they are already offering MOOCs and 19% are planning to do so. However, so far only a small subset of HE institutions has mechanisms for providing MOOCs recognition and certificates in ECTS credits to learners¹⁴⁴, but with the continuing rise in the offer of MOOCs, recognition is a key issue that needs to be dealt with.

Youth work and grassroots sport also provide young people with opportunities to develop their skills and improve their employability. As a recent expert group report¹⁴⁵ shows, youth work and non-formal and informal learning develop the life management and social skills of young people which assists their transition to the labour market. Participation in grassroots sport may also develop positive social attitudes and values, as well as individuals' skills and competences, including transversal skills¹⁴⁶. However, the awareness of the broad contribution and further potential of youth work and grassroots sport in the lives of individuals and society as a whole needs to be raised.

Based on the 2012 Council Recommendation on the validation of non-formal and informal learning (VNIL). Member States have agreed to put in place by 2018 arrangements for the validation of VNIL experiences enabling individuals to obtain a qualification (or part of it) on the basis of their validated experiences. These experiences would be linked to qualifications and in line with the EQF and would have the same or equivalent standards as qualifications obtained through formal education.

The 2014 European inventory on the validation of non-formal and informal learning show that there has been clear progress with regard to the introduction of national validation policies and frameworks since 2010, although less so on implementation. Progress has also been uneven across countries¹⁴⁷. Based on the 2012 Council recommendation on the validation of non-formal and informal learning¹⁴⁸, pathways have been established on the validation of skills acquired outside of the formal education and training system, e.g. through work experience, in-company training, digital resources, volunteering and life experience in

¹⁴³ Department for Business, Innovation and Skills, The Maturing of the MOOC, UK Government BIS

¹⁴⁴ Castaño Muñoz J. et al., How are Higher Education Institutions Dealing with Openness? A Survey of Practices, Beliefs and Strategies in Five European Countries, JRC Science for Policy Report, Institute for Prospective Technological Studies, 2016.

¹⁴⁵ The contribution of youth work to address the challenges young people are facing, in particular the transition from education to employment. Results of the expert group set up under the European Union Work Plan for Youth for 2014-2015, http://ec.europa.eu/youth/library/reports/contribution-youth-work_en.pdf.

¹⁴⁶ Council conclusions on maximising the role of grassroots sport in developing transversal skills, especially among young people (2015/C 172/03), OJ C 172, 27.5.2015, p. 8-12.

¹⁴⁷ European Commission/CEDEFOP/ICF International, European inventory on validation of non-formal and informal learning 2014, Executive Summary, 2014

¹⁴⁸ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2012:398:0001:0005:EN:PDF>

general. Opportunities and uptake of validation, however, vary significantly across the EU. For instance, skills audits for particularly disadvantaged groups are available in only 13 MS¹⁴⁹. The possibility to acquire a national qualification or gain access to formal education on the basis of validation is available in 15 MS¹⁵⁰. Some of the major challenges include: the low level of awareness regarding the possibilities and potential value of validation, especially amongst the general public; the social and labour market acceptance of validation which, whilst growing, remains in many countries lower than the acceptance of formal education; the level of bureaucracy and costs involved in validation; and the lack of a long-term and comprehensive approach to validation, which in many cases remains a collection of initiatives and projects with low coordination between stakeholders and across sectors. Identification of validation of skills is particularly relevant for people with lower qualifications, the unemployed or those at risk of unemployment, and for those who need to change their career paths, i.e. to identify further training needs and access re-qualification opportunities.

In December 2015 the Commission and Cedefop published a revised version of the European guidelines on validating non-formal and informal learning. The guidelines address the wide range of policy-makers and practitioners involved in developing and implementing validation arrangements¹⁵¹.

2.3.4. Valuing skills on the labour market and tackling discrimination

Skills might be fully recognised and referenced by qualifications, but not fully valued on the labour market, especially in case of discrimination.

The effective application of the existing EU legal framework on equal treatment is indispensable for tackling discrimination as well as gender gaps in pay and employment more broadly. The Commission monitors the correct application and enforcement of existing EU legislation in the Member States. In 2014, a Recommendation on strengthening the principle of equal pay between men and women through transparency was adopted. The Recommendation provides a toolkit of concrete measures on pay transparency as a means to tackle the gender pay gap, including:

- an entitlement for employees to request information on pay levels, broken down by gender, for categories of employees doing the same work or work of equal value;
- regular reporting by employers regarding wages by category of employee or position, broken down by gender (limited to large and medium-sized companies);
- pay audits in large companies; and
- the inclusion of equal pay issues (and pay audits) in collective bargaining.

The Recommendation invites Member States to undertake at least one of the above measures. Other measures provided include improved statistics; a clear definition of "work of equal value" and the promotion of gender-neutral job evaluation and classification systems.

¹⁴⁹ BE (Flanders and Wallonia), NL, SE, SI, LU, EL, HU, FI, IT, PL, FR, HR, LV (Source: European Commission; Cedefop; ICF International (2014). European inventory on validation of non-formal and informal learning 2014. Final synthesis report <http://libserver.cedefop.europa.eu/vetelib/2014/87244.pdf>)

¹⁵⁰ AT, BE (Flanders), BG, CZ, DK, FR, IE, LV, LT, LU, MT, PT, SI, ES, UK (England, Scotland, Wales) (Source: European Commission; Cedefop; ICF International (2014). European inventory on validation of non-formal and informal learning 2014. Final synthesis report <http://libserver.cedefop.europa.eu/vetelib/2014/87244.pdf>)

¹⁵¹ Cedefop, European guidelines for validating non-formal and informal learning, Cedefop Reference Series, Publications Office of the European Union, 2015

Based on the information provided by Member States, the Commission will draw up a Report on the Implementation of the Recommendation planned for the adoption in the second half of this year. The report will provide a state of play of measures adopted by Member States as well as an assessment of the potential need for additional EU measures in this area, including whether the review of the Gender Equality Recast Directive [2006/54/EC](#) is necessary.

Work on the transparency and comparability of qualifications across Europe started a decade ago and the European Qualifications Framework (EQF) has advanced Member States' trust in the quality of each other's qualifications. A key purpose of the EQF is to strengthen the transparency, comparability and portability of qualifications. The mobility of learners and workers requires that qualifications acquired in different institutions and countries can be combined and accumulated so as to facilitate progress in education, training and employment. The focus has therefore shifted from the number of hours and duration of qualifications to the learning outcomes achieved.

To implement this change, participating countries in the EQF started the complex task of developing overarching and comprehensive learning outcomes based national qualifications frameworks (NQFs), involving a broad group of national stakeholders. As a result the number of NQFs rose from 4 in 2008 to 43 in 2016. The shift to learning outcomes was not just a technical challenge but requires trust, commitment and consensus among national stakeholders.

Despite the good implementation of the 2008 Recommendation, the objectives of transparency, comparability and portability of qualifications, have not been fully reached, mainly due to limitations of the Recommendation. The Commission is presenting a proposal for the revision of the EQF recommendation as part of the New Skills Agenda. More details on the challenges identified and options to be considered for decision can be found in Annex III of this Staff Working Document.

2.4. Skills intelligence, documentation and informed career choices in Europe

Labour market and skills intelligence (LMSI), namely information on current and future labour market trends and skills needs as well as on the availability of relevant skills development opportunities, helps to make informed and unbiased decisions about human resource investments that will generate the best return. Although such intelligence cannot predict future skills evolution with precision, it can offer (early) warning signals of skills mismatches, thus helping a multitude of stakeholders to steer their decisions and strengthening evidence-based policymaking.

As an indication of the potential that skills intelligence has in influencing individuals' education and training decisions, in spring 2014, 44% of EU citizens said that they had looked for information about education, training and career options as well as if their skills and qualifications can be recognised in other Member States (European Commission, 2014). While respondents from DK (63%), NL (56%) and FI (52%) were the most likely to have looked for skills intelligence, only a very small share of citizens in BG (14%), PT (13%) and EL (10%) did. Fewer than half of youth in DE and UK say that when they chose their

professional orientation they had a good understanding of which educational paths lead to professions with job openings and good wage levels¹⁵².

2.4.1. Skills intelligence at national level

The ability of skills intelligence to influence individual choices and policy design depends on the degree of maturity and effectiveness of a country's *skills governance system* – the extent to which key stakeholders generate, disseminate, coordinate, use, and act upon the information on current and future skills needs and trends.

The approaches to skills intelligence applied across Europe to measure and/or anticipate skills and labour market trends range from more conventional education and labour market analyses, or employer and household surveys to quantitative projections of employment/labour supply and the adoption of foresight and other qualitative methodologies (see Figure 19). More recently, innovative Big Data techniques have been increasingly applied, such as digital web-crawlers that scan across online job vacancies, filtering information about desired skills and other behavioural traits in demand from job applicants¹⁵³. All skills intelligence techniques complement rather than substitute each other¹⁵⁴ and it is widely acknowledged that best practices are those that attempt to combine quantitative and qualitative elements in order to develop a more holistic understanding of trends.¹⁵⁵

In light of the stark differences between countries in their statistical infrastructure, culture of stakeholder collaboration, links between their education and training systems and the labour market and overall policy priorities and context, there is no single model of skills intelligence that can be applied universally across the EU.¹⁵⁶ However, several common principles and approaches of LMSI exercises can be identified, while similar experiences in data and institutional requirements are frequently reported across countries.

Figure 19: Main methods and approaches to LMSI, 2014, EU Member States

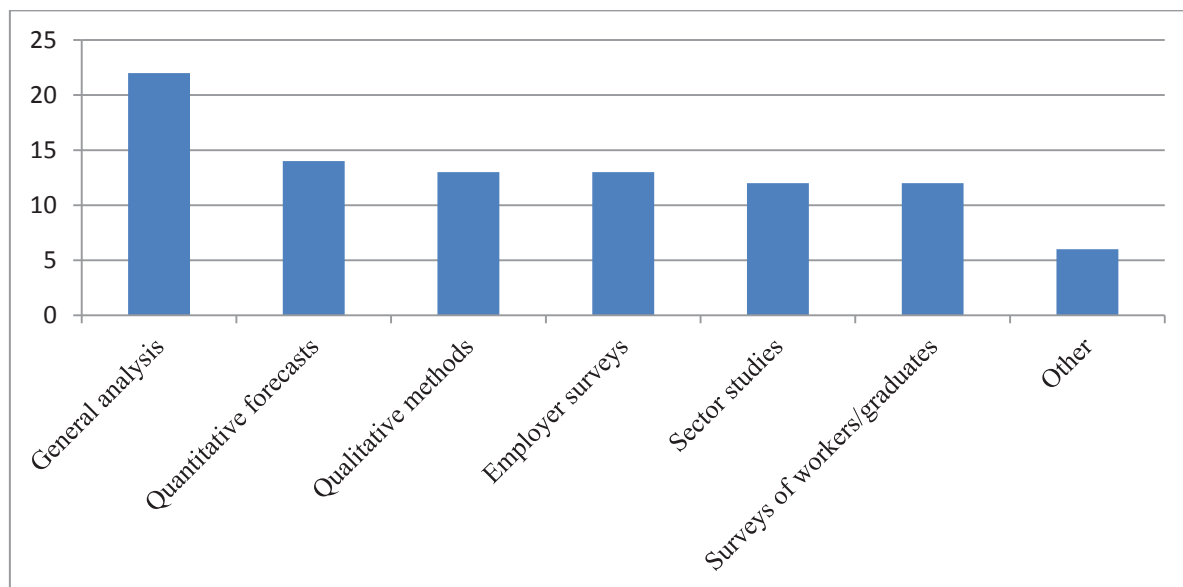
¹⁵² Mourshed M., Farrell D., Barton D, Education to employment: designing a system that works, McKinsey Centre for Government, 2014

¹⁵³ Kuhn P.J 'The internet as a labor market matchmaker', IZA World of Labor, Vol. 18. , 2014; Cedefop, Real-time LMI on skill requirements: feasibility study and working prototype, call for tender <http://www.cedefop.europa.eu/en/about-cedefop/public-procurement/real-time-labour-market-information-skill-requirements-feasibility>, 2014

¹⁵⁴ For instance, elements of foresight efforts are sometimes included in the assumptions underlying quantitative models, improving forecasts. Furthermore, foresight scenarios benefit from the provision of structured information collected part of quantitative forecasting exercises.

¹⁵⁵ Cedefop-ETF-ILO, 2016, Developing skills foresights, scenarios and forecasts, Guide to anticipating and matching skills and jobs Vol. 2, forthcoming

¹⁵⁶ Cedefop (with the support of the European Commission) has produced since 2008 regular annual forecasts of skill supply and demand for the EU and each Member State using comparable data and a harmonised methodology (See Cedefop website, "Main forecasting results", Forecasting skill demand and supply).



Notes: Total number of positive responses received by Ministry representatives per country. When more than one Ministry responded in a particular country, responses were merged and counted as one.

Source: OECD-Cedefop-ETF-ILO (2014) 'Questionnaire on Anticipating and Responding to Changing Skill Needs'

For instance, important differences exist across EU Member States given that some exercises focus on the macro level (e.g. national economy), while others at the meso (e.g. region, sector) or micro level (e.g. households, graduates, employers). The time frame covered also differs (e.g. short-, medium- or long-term), whereas the data sources (e.g. national accounts, labour force surveys, vacancy data) and the regularity of updates (e.g. annual, every few years, ad hoc) also vary. Some initiatives aim at better describing the current state of play in skill supply and demand in the economy or in a given sector/region and the associated skill mismatches that may ensue. By contrast, others focus on long-term projections and imbalances of changing skill needs and labour force stocks.

Moreover, there is significant variance in the measurement of 'skills' across different countries, with very few exercises actually measuring labour market needs for generic or information processing skills. Instead, they tend to focus on levels and types of qualifications or on employment trends across economic sectors and occupations, which are readily measurable proxies of skills. Critically, the stakeholders involved in commissioning and producing skills intelligence are also heterogeneous – in some cases central authorities such as Ministries of Labour or Education or Public Employment Services spearhead the initiatives, whereas in others it is employers, social partners or education and training providers who produce their own information.

Current skill needs assessments, which aim to describe the short-term state of skill supply and demand and of skill mismatches using labour market analyses, tracer surveys of graduates, and researchers, employer barometers and sector-specific studies, prevail as the most dominant form of LMSI in EU countries. Ad hoc sectoral studies can offer greater depth to identify emerging skill needs relative to large-scale forecasting models. This makes them more relevant for linking LMSI to the implementation of policy processes and to steering

education and training provision. Nevertheless, there is a downside to over-reliance on sectoral or other ad hoc investigations, since they tend to rely on irregular or partial coverage (e.g. of a specific population group, sector or geographical area). Analyses of contemporary labour market data may ultimately appear not very useful given the lags inherent to skill development. Finally, surveys of households and employers can often capture marginal or biased views in terms of skill mismatches or shortages.¹⁵⁷

Quantitative skills forecasts have also become a cornerstone of skills intelligence in most EU Member States, capturing future labour market developments by sector, occupation, qualification or skill level in each labour market. They are more demanding in terms of adequate labour market data, both in quality and in the length of the data series required. Building and interpreting quantitative models also requires significant time and expertise. Nonetheless, they constitute an essential building block of any comprehensive assessment of skill needs, given that they are bound by explicit and transparent assumptions and systematic thinking about complex economic interrelationships.

*Qualitative foresights*¹⁵⁸ of long-term skill trends are used less frequently, despite the fact that they require less formalised (data) inputs and are easier to set up than large scale macroeconomic models.¹⁵⁹ They also do not require extensive time series of data or the quantitative modelling of labour market accounting identities. Nevertheless, foresight techniques are highly dependent on the quality of the inputs from key experts and stakeholders, their interaction and on their willingness to engage in joint vision-building and priority-setting during the course of the exercises.

Box 1. "Horizon Scanning": qualitative foresight in the Health Sector

The Joint Action on Health Workforce Planning and Forecasting, an EU-funded collaborative project, applied the future-orientated technique of "horizon scanning"¹⁶⁰ to increase knowledge and allow systems dynamics modelling of the factors and forces which may drive changes in the skills and competences required from future health workforces in Europe.

Using the potential of new technologies, novel attempts have been made in recent years to explore *big data analysis and real time labour market intelligence* sources, such as online job portals, web scraping of online information and web crawling of job vacancies and/or job application resumes (Cedefop, 2014)¹⁶¹. Real-time online data on job vacancies and advertisements can capture up-to-date information on employer's skill requirements and even of new and emerging occupations and skills. Using such data, labour market needs can be

¹⁵⁷ Cedefop, 2008, Systems for anticipation of skill needs in EU Member States, Working paper Vol. 1 <http://www.cedefop.europa.eu/en/publications-and-resources/publications/wp012015a>; European Commission, 2016, Employment and Social Developments in Europe 2015, Luxembourg: Publications Office of the European Union.

¹⁵⁸ There are several foresight techniques which researchers may choose from and combine into a preferred 'foresight package' (e.g. Delphi methods, expert panels, scenarios, literature and statistics review, brainstorming and SWOT analyses) (Cedefop-ETF-ILO, 2016).

¹⁵⁹ An example of a comprehensive qualitative 'scenario development' exercise at European levels is the DG Employment Sectoral Studies, administered in 2009 as part of the New Skills for New Jobs initiative. They comprise a series of 19 sector-based studies that provided a transversal analysis of the evolution of skills needs in the selected sectors up to 2020, taking into account their global, national and regional contexts. The results were discussed and validated by panels of experts from industry, academia and various sector organisations including workers' and employers' representatives (European Commission, 2010).

¹⁶⁰ Fellows, J. and Edwards, M., Horizon Scanning: future skills and competences of the health workforce in Europe, EU Joint Action on Health Workforce Planning and Forecasting, 2016.

¹⁶¹ Cedefop is currently exploring the possibility of developing a working prototype of a web crawler instrument that will collect data on skill requirements in different sectors/occupational groups from online job vacancies using a harmonized process and classifications in a pan-European context, See Cedefop website, "Real-time labour market information on skill requirements: feasibility study and working prototype", Public Procurement

analysed in a cost-effective way without the time lags found in traditional administrative and survey data sources. They offer a snapshot of the market at any moment in time, including trends in particular sectors or occupational groups, and may be the best source of information regarding specific job requirements, such as industry-based qualifications, which are difficult to cover in large administrative surveys.

Real-time LMSI complements traditional instruments by filling gaps in existing knowledge of employers' skill requirements including emerging occupations, newly demanded skill profiles (both generic and occupation-specific) and new qualifications/certifications requirements. It therefore constitutes a valuable source of LMSI with increased utility for a range of end-users, including policymakers, career guidance and counsellors, education and training providers, human resource managers and job seekers. Kuhn (2014)¹⁶² provides evidence of the prominent role of online tools in job matching in the US and of their potentially significant unemployment reducing effects. Kureková et al. (2015)¹⁶³ pioneer the usage of the European-wide publicly administered job-vacancy portal EURES to perform a comparative study of employers' skill demand in small European economies. The authors argue that EURES data are a well-suited source for comparative analysis due to their standardised platform and relatively wide usage across European countries.

Despite the great promise of such big data analysis, available tools and instruments are largely unexploited by most Member States. Moreover, significant difficulties in the analysis and the generalisation of use of such data exist, including a distorted distribution of particular sectors/occupations (e.g. overrepresentation of IT sector postings), underrepresentation of low-paid or 'insider' posts, omitted wages, duplicate entries, quality concerns and inconsistent classifications. There is also marked variation at present across EU countries in the potential usability of big data. For instance, there is significant cross-country heterogeneity in (i) the share of the employer/individual population that uses the web for job search activities or as a channel for posting vacancies; and (ii) the concentration of sectors and/or occupations most likely to utilise online sources for job matching purposes (e.g. in Germany online job vacancies are more prominent in the construction and transport and storage sectors, whereas in Ireland and the UK there is skewness towards the administrative and support service and ICT sectors).

Despite these challenges, methodological developments in this area of research are fast-paced and form part of the growing industry of Big Data. Given the increasing reliance on Internet-based recruitment and the spreading access to the Internet across socioeconomic groups and countries, it is highly likely that reliance on such data will grow. And in the medium-term, by orienting the classification of real time skills intelligence to make it compatible with the ESCO taxonomy, it may become possible to provide comparable information on skill needs in different sectors and occupations across Europe.

The full potential of skills intelligence is often undermined by poor dissemination channels and lack of an overarching strategy, e.g. when transmission activities are non-systematic, do not target audiences via dedicated communication activities or when the information is not bundled or customised to cater to the needs of specific target groups (e.g. students,

¹⁶² Kuhn, P.J. (2014), 'The internet as a labor market matchmaker', IZA World of Labor, Vol. 18

¹⁶³ Kureková LM, Beblavý M, Haita C, Thum A-E (2015). "Employers' skill preferences across Europe: between cognitive and non-cognitive skills". J Educ Work 0:1–26

researchers, unemployed, employees, trade unions, policymakers).¹⁶⁴ Time inconsistencies between skills intelligence production and planning/policy cycles, multiplicity of outputs and reporting of output that employs technical jargon also put a dent to the effective dissemination of skills intelligence.

To guarantee effective use of skills intelligence, results have to be sufficiently disaggregated and user-friendly, appropriately customised, taking into account the profile and needs of diverse actors, and the user base sufficiently monitored to assess whether the overall ‘reach’ of the information is satisfactory. Also, transmission of LMSI is effective when it is institutionalised (e.g. coordination committees, budget lines etc.), which helps to streamline and feed the information into the appropriate policy circles (Box 2).

Box 2. Examples of effective transmission of LMSI¹⁶⁵

The experience of Poland

In Poland the main tool for forecasting, the Study of Human Capital (BKL) includes a clear dissemination strategy, with structured steps and mechanisms with a specific budget line. Dissemination initiatives include annual reports on the BKL website, cycles of national conferences, and regional seminars targeting multiple stakeholders. Further, BKL experts participate in an advisory role in employment committees while PES officials are actively involved as stakeholders in the BKL analysis.

Use of skills intelligence

LMSI feeds into the design of employment and activation strategies by informing or updating occupational standards or the design and revision of training for the unemployed and employed workers. LMSI can also influence education and training provision by providing information about desirable course funding/allocation or the development of VET programmes and apprenticeships. Moreover, migration policies and other sector-specific policy goals, such as the transition to a resource-efficient and low carbon or digital economy, are often influenced by LMSI, particularly in relation to occupations that are identified as being ‘in shortage’.^{166, 167}

Box 3. Steering education and training in Finland with LMSI¹⁶⁸

Finland has a long tradition of consensual policy making, high use of collective agreement and acceptance of forecasts results; hence skills forecasts are widely used and valued.

¹⁶⁴ For instance, using skills anticipation knowledge to specifically target unemployed persons requires simplification of the information provided to make it more useable and explicit with regards to qualifications and occupations in shortage (now and in the future). Particularly valuable for the unemployed, but also workers at risk who may be considering a career change, is information on the potential transferability of their skills across ‘similar’ occupations in the same sector. By contrast, data provided to experts require a high level of scientific rigor, while tailoring aggregated LMSI findings for career guidance and counselling purposes and for students and job seekers can be a challenge, since detailed information on job vacancies, skill requirements and other job-specific attributes is needed.

¹⁶⁵ Source: European Commission (2015)

¹⁶⁶ By contrast, LMSI is used less often in collective bargaining processes, the development of tax incentives for employers and workers, staff planning in companies and the up-skilling/re-skilling of teachers and trainers.

¹⁶⁷ The discussion in this section focusses exclusively on the use of LMSI for education and training purposes, including implications for guidance and skills validation. Further discussion of the relevance of LMSI for employment and migration policies can be found at OECD (2015, forthcoming).

¹⁶⁸ European Commission (2015), Skills Governance in the EU Member States: Synthesis report for the EEPO, Luxembourg: Publications Office of the European Union.

As part of the National Education Development Plan, the two key forecast tools VATTAGE (steered by the consortium of key ministries) and MITENNA (the Ministry of Education and Culture) steer education in accordance with sectoral developments and vocational education needs for young people. Sector-specific long-term forecasts from VATTAGE form the basis for education design. The MITENNA system translates the results of VATTAGE scenarios (sector-specific labour needs) into educational provisions. These provisions are discussed by Councils at different levels (national, regional and local) in order to make adjustments to provisions according to stakeholder views (e.g. the 26 National and sector-specific Education and Training Committees, tripartite bodies in each occupational field, supporting the design and content of upper secondary VET and HE). The educational estimations are then made into proposals for future occupations.

Skills intelligence is also increasingly employed for the purposes of ‘competence-based matching’ or as a pillar of learning outcomes oriented approaches (Box 4). These are reliant on the collection of up-to-date intelligence of suitable *education and training qualifications and pathways* that can assist jobseekers in finding well-matched job opportunities. A *sine qua non* condition for the success of such instruments is close collaboration between social partners, who are responsible for delivering the input necessary for linking learning outcomes to the national (and European) registers of occupations and qualifications.

Box 4. Competence based matching in Belgium

In cooperation with the main social stakeholders, the Flemish PES (VDAB) launched ‘competence-based matching’ under the ‘competence-alliance’ in 2010 to set up a more precise process to match the skills of the unemployed to labour market needs. The main visible output of the instrument is a web application with the primary function of a vacancy database. However, most interesting is the operating mode of the web application. The Flemish Social and Economic Council (SERV) developed a skills database, which included a precise list of skill needs for most occupations in Flanders. The matching tool requests jobseekers to indicate their skills profile (a personalised suggestion is made based on previous work experience and education background). Subsequently the application links this to the skills requested for a certain vacancy. Website users receive a matching-score in relation to an existing vacancy that goes beyond qualifications, along with suggestions on possible trajectories for skills and personal development. The philosophy of the tool is that vacancies can be relevant for a person who already has half or more of the required competences.

Skills intelligence can inform career decisions of people, whether they are aspiring youth, experienced professionals, employed, unemployed or older people.¹⁶⁹ However, it is not often used for this purpose, with just over a third of Member States reporting activities specifically targeted to jobseekers and guidance practitioners¹⁷⁰.

Survey findings from a Eurobarometer¹⁷¹ show that only a quarter of EU citizens have used a career guidance service (mostly while they are still in education) but a majority agrees that guidance services are useful for making the right choice for further studies. The same survey

¹⁶⁹ The value of real-time LMSI in offering increased utility for career guidance counsellors and individual job seekers is yet to be seen. Nevertheless, big data, derived in real-time from actual job postings, is expected to enable guidance counsellors to provide superior information about learning/employment pathways based on updated skills descriptions of existing and emerging occupations.

¹⁷⁰ OECD/Cedefop/ETF/ILO, Questionnaire on Anticipating and Responding to Changing Skill Needs, 2014; European Commission, Skills Governance in the EU Member States: Synthesis report for the EEPO, Luxembourg: Publications Office of the European Union, 2015

¹⁷¹ [Special Eurobarometer 471](#): European Area of Skills and Qualifications, p. 6

shows that younger age groups and those with higher levels of education are more likely to have used a guidance service. Importantly, guidance services are a point of convergence for many of the tools and services, including skills intelligence, that could enable and guide informed decisions by individuals. Guidance services can reach out to the most in need of new and updated skills and enables citizens identify their capacities, competences and interests and to make learning and employment choices. The Commission has sought to gather statistical data on guidance activities at Member State level but the feedback (from both the Euroguidance Network and European Lifelong Guidance Policy Network) is incomplete with centres unable to provide feedback in a consistent way due to variation in structures and practices. What is clearly in evidence however is the scale of guidance services in many Member States; guidance activities are organised across multiple sectors and structures; and in effect every teacher within every institution acts in a guidance capacity for individuals. As such, guidance services offer a major outlet for tools and services, such as skills intelligence, but the role and scale of activity by guidance services must be made more visible and understood.

Moreover, the relevance of skills intelligence for guiding career choices may be inhibited, if the information regarding the jobs available is not at a local level or if it fails to present reasonable mobility pathways to individuals. Also, while skills intelligence holds the potential to support career decisions, it only does so if its quality is assured (reliability, up-to-dateness, appropriate geographic scale) and if it is accessible by a diverse set of users (including low-skilled), who must, in turn, have an adequate set of skills to reflect upon the information provided¹⁷² or must be supported with relevant advice services.

EU practices that link skills intelligence and career guidance with notable success tend to put an emphasis on multi channelled delivery and a holistic approach to career development (Box 5)

Box 5. Linking LMSI with career guidance¹⁷³

The use of multichannel approaches is the most frequent way to guarantee access to quality services by a diversity of users. Particularly important are the combinations of distance services integrated with appropriate professional career services. The **Danish eGuidance** service offers to both youth and adults, via its “Education Guide” web-portal, a wealth of information on education and training opportunities, jobs and professions, labour market conditions and statistics and study programmes taught in English. The same service provides a variety of guidance activities via a combination of channels, which include online chat, telephone, webinars, email services and social media interaction. Each service is used carefully according to the profile and needs of clients, supported by professional counsellors with targeted ICT training.

2.4.2. Skills needs at sectoral level

There is a substantial body of evidence of skills gaps at sectoral level. Additional qualitative and more sector-specific insights can be gained from exploring national data sources. Attström et al. (2014) use national data to identify occupations with evidence of recruitment

¹⁷² Cedefop, 2016, LMI in Lifelong Guidance, forthcoming

¹⁷³ Cedefop, 2016, *ibid*

difficulties.¹⁷⁴ The top five bottlenecks in the EU (at the ISCO 2-digit level) are reported for metal, machinery and related trades workers; science and engineering professionals; ICT professionals; health professionals; and building and related trades workers. Out of these, some tend to require a university degree and hence several years of training. This is the case notably for science, engineering, ICT and health professionals. Some others require at most an upper secondary degree and could be learned in a relatively short time span, including through non-formal training programs. Many of these bottlenecks are persistent and can be considered as structural, as they have existed for a number of years. Especially those requiring high skills levels and offering attractive wages and other working conditions should be considered as reflecting genuine skills shortages, where there are not enough graduates. However, bottleneck vacancies may also be related to inefficient job matching, inadequate recruitment strategies, insufficient involvement of employers with education systems, a reluctance to provide training on-the-job, the growing need for soft skills besides technical skills, and unattractive working conditions, including wages – especially in case of bottleneck vacancies with low skills requirements. **The information on skills needs in some key sectors below is intended as further evidence to serve as rationale for the new proposed EU initiative for a "Blueprint for Sectoral Cooperation on Skills".**

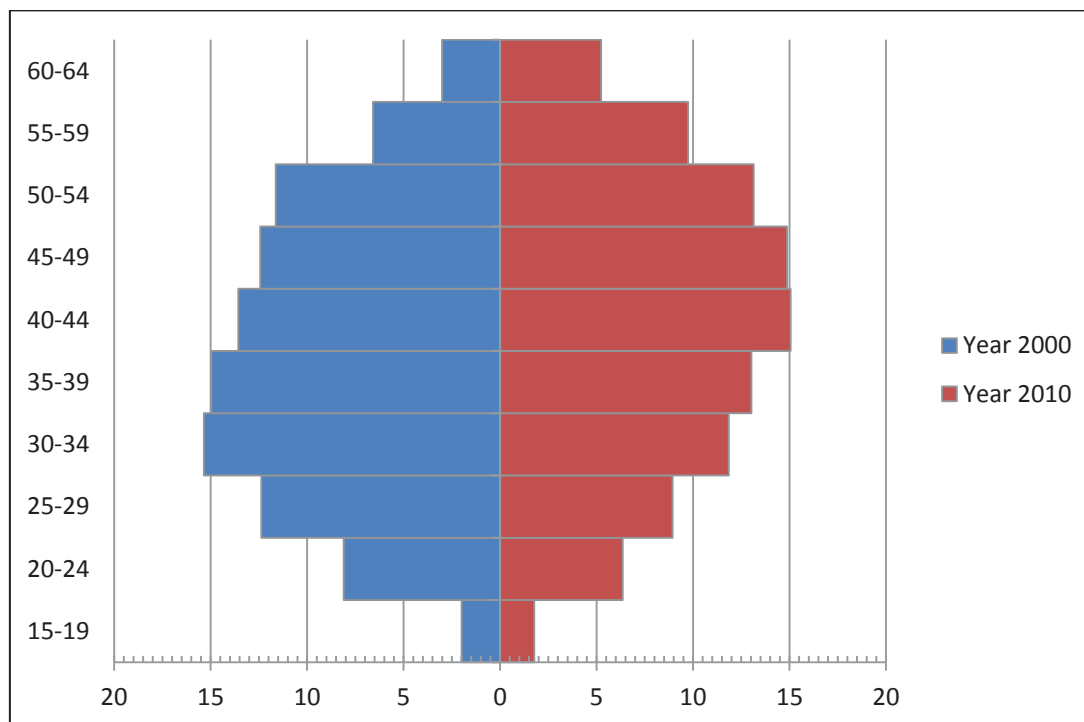
Transport sector

The Commission's Joint Research Centre made a forward looking study on "Future Employment in Transport Sector"¹⁷⁵ looking at, among others, potential skills mismatches in the sector. Accordingly, demand is found to grow at different rates among both occupational groups and skill levels within the sector by 2020. Mobile and technical staff together with high and medium skilled individuals are expected to be demanded more than administrative and low skilled staff. In some cases this could result in skill mismatches for specific occupation and skill combinations in certain market segments with specialised job content that requires long education and training. Given also the aging profile of the workforce in the sector (Figure 20), the main challenge would be to reskill the incumbent workforce with a specialisation so that they can perform demanded tasks.

Figure 20: The ageing workforce in transport: distribution by age as a percentage of total transport workers (years 2000 and 2010)

¹⁷⁴ Attström K. et al., Mapping and analysing bottleneck vacancies on the EU labour markets, Overview Report, European Commission, 2014

¹⁷⁵ Christidis P. E. et al., Future employment in transport – analysis of labour demand and supply, JRC Technical Reports, Joint Research Centre, Institute for Prospective Technological Studies, 2014.



Source: EU Commission JRC calculations based on LFS data.

Construction sector

The European construction sector generates about 9 % of the EU's GDP and provides 18 million direct jobs. Construction is also a very heterogeneous industry, accounting for approximately 3 million businesses in the EU-28, of which 95% are small enterprises that provide local employment.

The sector has been hit particularly strongly by the financial and economic crisis in 2008. As a consequence, the construction activities fell sharply and more than 2.5 million jobs were lost between 2008-2013¹⁷⁶. Moreover, while GDP has returned to positive growth, the construction index lags behind. The increase in construction employment in the coming years will partly reflect the substantial contraction in the period before 2013. Over 6 million job openings are anticipated during the period 2013-2025, primarily through a need to replace employees leaving the sector due to retirement or for other reasons, rather than the creation of new jobs¹⁷⁷. For example, in Germany it is projected that 30% of the construction workforce will retire of over the next decade¹⁷⁸.

The construction sector is a labour-intensive sector; it needs a continuous supply of a skilled workforce, which has to show its adaptability in addressing challenges of the coming years. The shortage of skilled labour can, among others, be explained by the growing need for skills corresponding to specific qualifications, which education and training (as well as the employment market) have difficulty in satisfying. The European Commission encourages

¹⁷⁶ European Construction Industry Federation, Construction Activity in Europe, Statistical Report, 2015

¹⁷⁷ European Commission, Analytical Highlight, Focus On Construction, EU Skills Panorama 2014, 2014

¹⁷⁸ See http://ec.europa.eu/growth/sectors/construction/observatory/index_en.htm

specifically the construction sector to take part in the European Alliance for Apprenticeships, to offer more and better apprenticeships and thus to address the skills shortages.¹⁷⁹

In terms of environmental impact and pressure on natural resources, the built environment is responsible for around 40% of total energy use, 36% of global greenhouse gas emissions, 30% of raw materials use and 30% of solid waste generation¹⁸⁰. Construction is therefore an enabling sector for a low carbon and resource-efficient transition and can be a leading sector in "green" jobs creation.

The transition to a resource-efficient and low-carbon economy will also bring important structural changes in the sector, which will have to adapt and anticipate the needs for skills and competences in these areas. This is especially the case regarding the preparation of the labour force for the construction of 'near zero energy buildings', whether this concerns new or renovated buildings. Analysis undertaken as part of the BUILD UP Skills European initiative, focusing on craftspeople and on-site workers, suggests that "by 2020 more than 3 million workers in Europe will require training on energy efficiency or renewable energy sources"¹⁸¹.

The deployment of enabling technologies and the use of flexible work-organisation practices will also require changes in skills and qualifications in construction. For example the introduction of Building Information Modelling (BIM) into the construction value chain will require a significant evolution of skills from architects through to the final customers and users of the construction works. This will be even more important when EU public procurement rules requiring electronic communication and recommending the usage of BIM for public calls for tender will enter into force by 2018. The construction sector is today one of the least digitalised sectors and reserves much potential for improving its productivity.

Tourism sector

Tourism employed just over 12 million persons in Europe in 2014¹⁸² (around 9% of the total employment in the EU non-financial business economy). The sector provides employment both to the highly qualified, as well as to low-skilled workers. It offers job opportunities to both workers who enter the job market for the first time and to people re-entering the job market. It is the largest employer of migrant workers, part-time workers, as well as female workers¹⁸³, and young people¹⁸⁴.

High-quality client service, provided by adequately skilled staff, is the key precondition for surviving and growing in an increasingly fierce competition against new emerging destinations in non-EU countries. Yet, the tourism industry struggles to find and retain skilled employees¹⁸⁵. The sector does not attract graduates due to negative perception of the job quality, seasonality and limited career prospects. In addition, SMEs in the tourism sector make relatively less use of formal learning, due to a lack of financial resources, lack of time, limited human resources. This is particularly the case for micro enterprises, e.g. small family businesses, which represent up to 90% of tourism economic operators. Given a small

¹⁷⁹ See http://ec.europa.eu/growth/sectors/construction/apprenticeships/index_en.htm

¹⁸⁰ Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on Resource efficiency opportunities in the building sector, Communication COM(2014)445

¹⁸¹ See <http://www.buildupskills.eu>

¹⁸² EUROSTAT: http://europa.eu/rapid/press-release_STAT-15-6315_en.htm

¹⁸³ More than 58% of those employed in the sector are women.

¹⁸⁴ More than 13% of those employed in the sector are aged 15 to 24.

¹⁸⁵ Centre for Strategy and Evaluation Services, Mapping and performance check of the supply side of tourism education and training, Publications Office of the European Union, 2016

workforce, the owner/manager and every member of its personnel are expected to possess or develop a wide range of skills.

While there are skills gaps for the traditional core skills (foreign languages, interpersonal skills, communication, multicultural knowledge), new skills are needed for newly developed areas of occupation (e.g. destination management, sustainable tourism, cultural tourism, adventure tourism, accessible tourism, green tourism) and tourism professionals are expected to deliver innovative and customised services for a wider range of target groups, including seniors or travellers with special needs¹⁸⁵.

Moreover, rapid digitalisation in the tourism sector requires new, specific knowledge not only from employees, but also from tourism entrepreneurs. SMEs often lack the necessary e-management skills that would enable them to keep up with the developments of online market places and distribution channels, new forms of marketing and communication with customers.

Finally, education providers have a limited understanding of the requirements of employers and expectations of travellers in terms of the service provided. There is, therefore, a need to pursue new and innovative ways to provide VET, including new forms of apprenticeship, business simulation and training for seasonal workers. This will help create pathways into and within tourism occupations.

Textile, Clothing, Leather and Footwear sector

The Textile, Clothing, Leather and Footwear (TCLF) sector also provides evidence of some specific bottlenecks. The sector is composed of 260,000 enterprises, has a turnover of EUR 240 billion and employs more than 2 million persons in Europe, of which 51% in the clothing industry, 31% in textiles, 13% in the footwear industry and 5% in the leather industry. The TCLF is an SMEs driven sector. The size of the companies is relatively small: an average number of employees per company presents as follows: 10 in textiles: 8 in clothing, 9 in leather and 14 in footwear. Traditionally, TCLF industries employ a high proportion of women, not only in services and administration but also in production activities.

There are significant productivity differentials between the subsectors within the TCLF: textile is more capital intensive and relatively higher added value production, whilst clothing and leather create relative more jobs. European producers are world leaders in markets for technical/industrial textiles and non-wovens, such as industrial filters, hygiene products, products for the automotive and medical sectors.

The TCFL sector is part of complex and interlinked value chains of fashion and high-end industries. These industries are one of the most promising and creative sectors in Europe. They provide an important contribution to the EU economy with a total 5 million people employed in the fashion value chain¹⁸⁶ and over 1 million people employed in high-end industries¹⁸⁷.

¹⁸⁶ European Commission, Policy Options for the Competitiveness of the European Fashion Industries-Where manufacturing meets creativity, Commission Staff Working Document, 2012

¹⁸⁷ European Commission, Competitiveness of the European High-End Industries, Commission Staff Working Document, 2012

Despite the economic crisis, many European companies in the sector have managed to develop in global markets, taking advantage of European high quality, knowledge and craftsmanship's worldwide reputation.

However, in spite of innovation and creativity, the TCLF industry faces increasing skill gaps and shortages, mostly due to ageing of workforce, mismatch between education and industry's needs, technological transformations, as well as because of low mobility of workers.

The sector also suffers from an image problem within broad public perceptions which causes difficulties in attracting new recruits, especially younger workers and within the production chain. However, the sector has evolved with many interesting opportunities, also available alongside traditional artisan and craft occupations. The TCLF sector requires a wide spectrum of skills and qualifications, from engineering technologists and digital experts to experts with specific craftsmanship and knowledge of traditional skills.

Automotive sector

The automotive industry accounts for almost 7% of the EU's GDP and provides employment to 12 million workers (5.6% of total EU employment). Direct jobs in automotive manufacturing amount to 2.3 million people. The vast majority of persons employed in the manufacture of motor vehicles (over 80%) and in the rubber and tyre industry (over 60%) work in large-sized enterprises (250+), followed by medium-sized enterprises (50-249). The European automotive sector also is world leader in terms of product innovation: by accounting for 20% of all industrial research funding in Europe, it constantly develops and furthers flexible and modular production systems, high-quality (premium) design, alternative powertrain technologies and the management of complex value chains.

The automotive industry experiences increasing qualitative and quantitative shortage in suitable workers. This is due mainly to the ageing workforce (23% are approaching or starting to approach retirement age), the poor image of the manufacturing sector in the eyes of young talented people, the wide diversity of national education systems and cultures and the ever accelerating pace of technological change. Taking account of a substantial need to replace employees leaving the sector due to retirement or for other reasons, an estimated 888,000 automotive jobs will need to be filled from 2013 to 2025¹⁸⁸.

The automotive industry is particularly lacking STEM (Science, Technology, Engineering and Mathematics) profiles and engineering jobs and it is facing stiff competition from other sectors in the search for those highly skilled employees.

Indeed, the sector is facing many structural changes, including ever stricter emission standards and decarbonisation as part of new mobility concepts, connectivity and an ever growing share of digital technologies in the added value of cars, changes in consumer preferences, relocation to low-cost countries and development of global manufacturing systems. All these new technologies and the growing automation of manufacturing processes require automotive industry workers to acquire more advanced technical skills. Automotive employers therefore depend not only on sufficient supply of STEM graduates but also they need to recruit and develop staff that are both technical specialists and have the problem-solving and team-working skills necessary to adapt to rapid technological change.

¹⁸⁸ European Commission, Analytical Highlight, Focus On Automotive sector and clean vehicles, EU Skills Panorama 2014, 2014

For instance, the continued development of cleaner vehicles is projected to impact considerably on the occupational and skills profile of the sector. Over half of the total job openings to 2025 are forecast to require high-level qualifications and a declining number of jobs will require low- and medium-level qualifications in the sector. The push for clean vehicles will lead to further jobs in R&D, design and senior roles in the manufacturing process.

Similarly, the need to have connected vehicles with advanced electronic information and entertainment features will require new skills and novel technologies in the near future. New areas of expertise, including those which result from the ongoing shift to a highly sophisticated, digital manufacturing (Industry 4.0), will therefore need to be added in order to bridge the existing knowledge gap between the automotive and the ICT sector.

Defence sector

With a turnover of €97.3 billion in 2014, the European defence industry brings a major contribution to the wider economy. It directly employs more than 500,000 people and has a high percentage – over 50% – of highly skilled and specialised employees.¹⁸⁹ Driven by a multiplier effect of between 2.2 and 2.4,¹⁹⁰ it generates up to another 1,200,000 indirect jobs.

The defence industry generates significant innovation, is centred on high-end engineering and technologies and its cutting-edge research has created important knock-on effects in other sectors, such as electronics, space and civil aviation. However, companies are experiencing skill shortages. This trend is expected to increase in the future due to the high number of employees approaching retirement age and relatively low attractiveness of the industry for young professionals.¹⁹¹

The European defence industry has to retain key skills and acquire new ones to remain in a position to deliver high-tech solutions in a global setting. Due to the high tech level of defence products the loss of skills would require a generation to bring the know-how back to the same level and consequently this would severely affect Europe's strategic autonomy.

Innovation for defence is increasingly coming from the civil sector. Defence industry, will very likely also be affected by the Industry 4.0 evolutions. Although it is not clear what the defence industry of the future will look like, it is clear that it is likely to be different to what we have today and we need to start preparing for this now.

Naturally, the skills required in defence are not necessarily industry specific, as most of them are and will be similar to skills required in other industrial sectors. Most of the defence-related companies are also involved in civilian activities, and this will increase further in the foreseeable future. This means that the majority of company staff will work on civil and defence technologies and products during their career.

The European defence sector consists of a small number of large companies and more than 1,350 SMEs. Whereas large companies tend to have their own skills strategies to deal with the challenges, it is mostly the SMEs (often specialised in cutting-edge technologies) that are struggling to attract, create and maintain high-end skills and preserve their comparative

¹⁸⁹ Aerospace and Defence Industries Association of Europe (ASD) data

¹⁹⁰ Duran J., Isusi I., Corral A., Study on the Perspectives of the European Land Armament sector, IndustriAll, 2012

¹⁹¹ Bergstrom et al., Anticipating Restructuring in the European Defence industry, BIPE,,2008

advantage. Often SMEs lose employees that have acquired specific skills to large companies that can offer them greater career opportunities.

According to a recent study the sector is facing uncertainty due to limited communication in relation to governments' equipment requirements, which hampers industry's ability to manage skills through recruitment and retention. In addition, it is lacking a strategic approach to the management of skills across government, industry and the education sector. The study produced the sector's skills taxonomy, overviews of the supply and the demand side, and showcased best practices.¹⁹²

More work needs to be done however on mapping present and future skills' shortages and bottlenecks to ensure a clear understanding of the capabilities and technologies critical to the industry and prepare for the future.

Maritime technology sector

Seas and oceans are drivers for the European economy and have great potential for innovation and growth. The European maritime technology industry is a forerunner and world leader in terms of innovation and key enabler, providing the more advanced technologies and structures needed to ensure the development of all other maritime activities, such as offshore renewable energies or aquaculture. This is vital to secure Europe's needs in terms of transport, defense, energy and food supply.

The maritime technology sector has a turnover of €91 billion and directly employs more than 500,000 people of which a high percentage are high skilled. It generates at least as many additional jobs and contributes significantly to regional development (200 regions in 18 countries).¹⁹³

The economic and financial crisis that started in 2008 dramatically hit the maritime technology sector. The industry went through painful restructuring and widespread job losses. In order to maintain its leading position, European companies abandoned mass markets in favour of complex, high-tech products and services based on knowledge, innovation and technology. It has become an innovation-driven, technologically advanced industry requiring more and more highly skilled technical people. Today it is estimated that 50% of the employees have a technical university degree and additional 30% are highly skilled workers.

Existing skills gaps in the marine and maritime industry have been identified in several policy documents in recent years, such as LeaderSHIP 2020¹⁹⁴. The 2014 Communication "Innovation in the Blue Economy: realising the potential of our seas and oceans for jobs and growth"¹⁹⁵ highlighted that the scarcity of a skilled workforce, able to apply the latest technologies, represents one of the main obstacles to the further development of the blue economy. In fact, the demand for skills is changing, due to highly specific niches in which lies its future competitiveness and to the fact that in the growing markets there are more and more competing actors and technologies. A number of changes are already anticipated in the sector and relate to the technological, infrastructural and business-related advancements.

¹⁹² Retter L., Taggart L., Freeman J., Study on Key Skills and Competences for Defence, RAND Europe., 2015, commissioned by EDA.

¹⁹³ SEA Europe, IndustriAll, Joint Position on LeaderSHIP 2015/2020 Review, 2016

¹⁹⁴ European Commission, LeaderSHIP 2020, The Sea, New opportunities for the Future, 2013

¹⁹⁵ Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Innovation in the Blue Economy: realising the potential of our seas and oceans for jobs and growth, COM(2014) 254/2

Closely linked to the availability of new skills is the need for dedicated research & development programmes, able to deliver innovative technologies and services. For example, the maritime transport sector has been working in the last years on the designing and production of environmentally friendly and energy-efficient ships, with the overarching objective of supporting a stable perspective for continuous investment in "greening" the sector. As well as this, the offshore wind energy sector is growing fast, creating both jobs and revenue. Ocean energy could follow a similar path in the coming years, bringing to the creation of more business and jobs for companies that could use their existing knowledge in naval construction, offshore oils & gas or offshore wind to move into ocean energy. The EU has a global lead in this sector: 45% of wave energy companies and 50% of tidal energy companies are based in Europe.

Education and training as well as research and innovation are therefore key to ensure sustainable growth of the marine and maritime sectors. Only by anticipating employment and skills needs, will it be possible to address the emerging and future skills gaps and shortages. In this respect, a European Skills Council for the Maritime Technology Sector was established in 2014 to identify skills gaps and create regional and inter-sectoral synergies through social dialogue. It carried out a survey that demonstrated a lack of qualified and available staff on the job market and an expected increase in employment in the next 2-5 years. It delivered a list of the most demanded skills and occupations and showcased best practices. The work needs to continue now to facilitate planning and coordination of activities at European, national and regional level in order to ensure that the educational providers provide the current workforce and future students with the necessary skills and training to meet evolving industry needs and, thus to support the maritime technology sector to stay competitive worldwide.

Space market sector¹⁹⁶

The global space sector is a high-technology niche with a complex ecosystem, which employed at least 900 000 persons around the world in 2013, including public administrations (space agencies, space departments in civil and defence-related organisations), the space manufacturing industry (building rockets, satellites, ground systems); direct suppliers to this industry (components), and the wider space services sector (mainly commercial satellite telecommunications and geospatial information providers). But these estimates do not take into account universities and research institutions, which also play a key role in R&D, as receivers of public funding and initiators of much of the space sector's innovation. To give orders of magnitude, around 350 000 full-time employees are active in the United States, 200 000 in the Russian Federation, around 60 000 in Europe.

The space sector needs complementary policies, such as those that boost education and skills, as well as ensuring long-term investments in research and development capabilities, leading to future innovation. When examining human capital, it is important to consider the next generation of employees, who may get involved in space programmes. The majority of jobs available in the space sector can be found in the scientific and engineering fields. At the same time, interdisciplinary and cross-sectors skills focus is a key trend of the EU space data uptake strategy with the aim of answering the needs of different downstream value chains and of devising mechanisms for transferring know-how and experience to practitioners worldwide.

¹⁹⁶ OECD, *The Space Economy at a Glance*, OECD Publishing, 2014

The uptake of the space data delivered by the EU programmes (Copernicus and Galileo) needs to be sustained through appropriate policies and programmes. The already operational Copernicus programme for Earth Observation is targeting achieving training and networking initiatives allowing the matching of university curricula and industry professional profiles, vocational and cross sectorial training and research, networks empowerments, etc.

Recent EU projects have identified for the European geo spatial sector skills, a clear teaching gap with regard to “mobile” competences and a possible teaching gap with regard to “programming” competences and also in the knowledge areas of organisational and institutional aspects, design aspects, analysis methods and data manipulation.

Finally the recent study "Space market uptake in Europe" (Dec 2015), presented on 28/01/2016 at the ITRE Committee of the Parliament, highlighted that the lack of specialised technical and scientific skills could prevent also private enterprises from exploiting the opportunities offered by the space data and this is a key barrier for the space data market development.

Health Care Sector

With more than 17 million health and social care workers, including more than 13 million women, the health and care sector accounts for an estimated 10% of all jobs in the EU. Health workers are involved in a wide range of essential activities to promote healthy life-styles, to prevent, diagnose and treat ill-health, helping to reinforce the employability of Europe’s population and contributing to economic growth¹⁹⁷.

Europe’s ageing population is a key driver for employment in the health and social care sector.¹⁹⁸ About 1.8 million new jobs are anticipated in health and social work between 2015 and 2025 y (+7.8%)¹⁹⁹ A cluster of countries are forecast to experience employment growth at more than double the EU-28 average for the health and social work sector, including, Hungary, Cyprus, Croatia and Belgium. New complex care needs, the expansion of e-health information technology and telemedicine will impact on the nature of skills demand in the sector: growing requirement of technical knowledge and e-skills in addition to clinical knowledge and the creation of new roles for medium and lower qualified professionals, for example in geriatric/dementia care and specialised IT/e-health workers in clinical, social care, informatics and administration. Moreover, health professionals increasingly need a broader "soft" skills set (communication, team building) to work multidisciplinary teams. Better use of skills is urgently necessary to meet health threats with serious macro-economic implications such as antimicrobial resistance (AMR).

Yet these significant job creation opportunities in the healthcare sector are hampered by growing shortages, estimated at one million by 2020, due to retirement of the ageing workforce, shortages of specialist skills and inadequate health workforce distribution in many EU countries and regions²⁰⁰. Health professionals are already among the top five bottleneck

¹⁹⁷ European Commission, Investing in Health, Commission Staff Working Document, Social Investment Package, 2013

¹⁹⁸ EU Employment and Social Situation, Health and Social Services, Quarterly Review 2014, <http://ec.europa.eu/social/main.jsp?catId=792&langId=en>

¹⁹⁹ Cedefop Forecast 2016

²⁰⁰ European Commission, Action Plan for the EU Health Workforce, Commission Staff Working Document, Towards a job-rich recovery, 2012

professions in the EU²⁰¹ and, according to recent OECD evidence, there is greater level of skills mismatch among health professionals compared to other technical and professional occupations²⁰².

In addition, demands for long-term and formal care will also increase with an expected reduction in the availability of informal carers with changing family structures.

This underscores the importance of developing an adequate human resource governance system, better skills anticipation and the rapid adjustment of education and training curricula to ensure a sufficient and skilled healthcare workforce capable of meeting new healthcare demands in Europe.

Cross-sectoral skills shortages

Focus on ICT professionals

Bottlenecks are particularly large for ICT professionals. Rapid uptake of new digital technologies, driven by developments in such areas as big data, Internet of Things, cloud computing, robotics and mobile and wearable technologies, has led to rapidly rising demand for ICT professionals in all sectors of the economy. Employment of ICT professionals has grown by 2 million over the last decade, with more than half of the new jobs being created in the last three years²⁰³. A significant amount of the demand remains unfilled and it is forecast that the demand-supply gap will nearly double from 365 000 in 2015 to almost 800 000 by 2020.²⁰⁴ The largest gaps are expected for the UK, Germany, Italy, France, the Netherlands and Sweden. However, gaps will also emerge in many other countries.

A major impediment to filling these new jobs is the lack of new computing graduates. Despite strong demand and above average wages, not enough young people, particularly women, are choosing to study and ultimately graduate in ICT; with graduate numbers even having fallen substantially compared to a decade ago.

The demand for ICT professionals is outstripping supply. The shortage (calculated as the number of open posts) is estimated to reach 756,000 in 2020. This figure can be described as 'demand potential' for ICT jobs. Of these 756,000 there are 530,000 potential additional jobs in ICT practitioner occupations and around 226,000 at ICT management level (see Figure 21).

Figure 21: e-Skills Vacancies Estimate- 'Main forecast scenario': Summing-up of National ICT Professional Excess Demand in Europe 2014 – 2020

²⁰¹ Attström K. et al., Mapping and analysing bottleneck vacancies on the EU labour markets, Overview Report, European Commission, 2014

²⁰² OECD, Health Workforce Policies in OECD countries, Right Jobs, Right Skills, Right Places, OECD Health Policy Studies, OECD Publishing, 2016

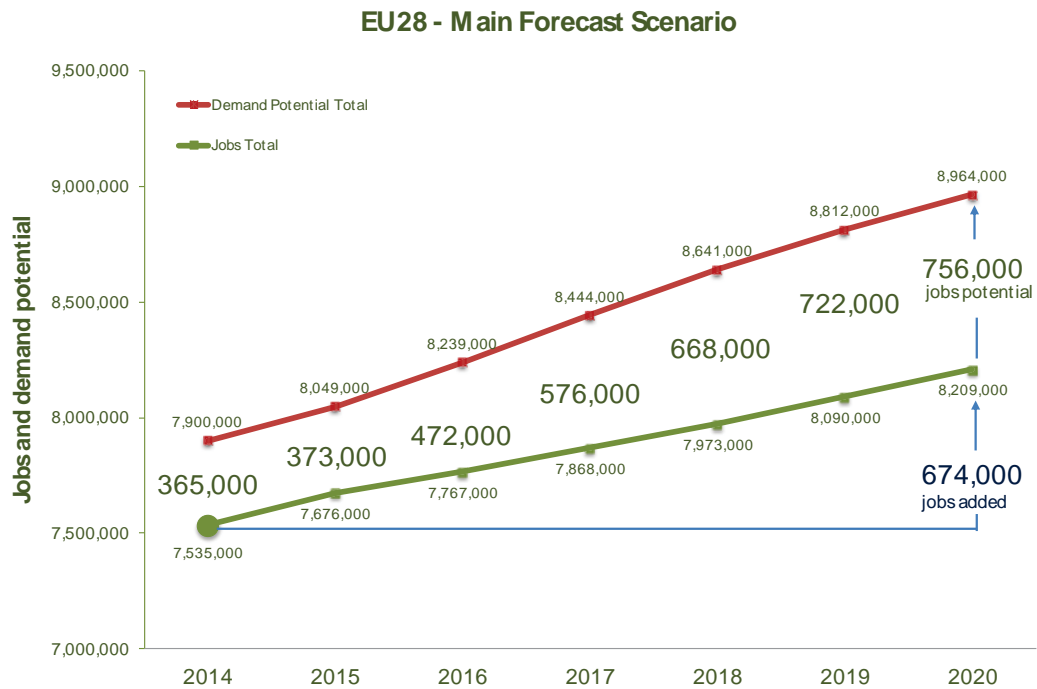
²⁰³ Eurostat, Employment Statistics, 2015

²⁰⁴ Hüsing T., Korte W. B., Dashja E., E-skills in Europe, Trends and Forecasts for the European ICT Professional and Digital Leadership Labour Market (2015-2020), Empirica, 2015

EU27	2014	2015	2016	2017	2018	2019	2020
ICT Management	57,000	58,000	143,000	180,000	203,000	218,000	226,000
ICT Practitioners	307,000	315,000	329,000	396,000	465,000	504,000	530,000
Total	365,000	373,000	472,000	576,000	668,000	722,000	756,000
% Growth	+35.2%*	+2.2%	+26.5%	+22.0%	+16.0%	+8.1%	+4.7%

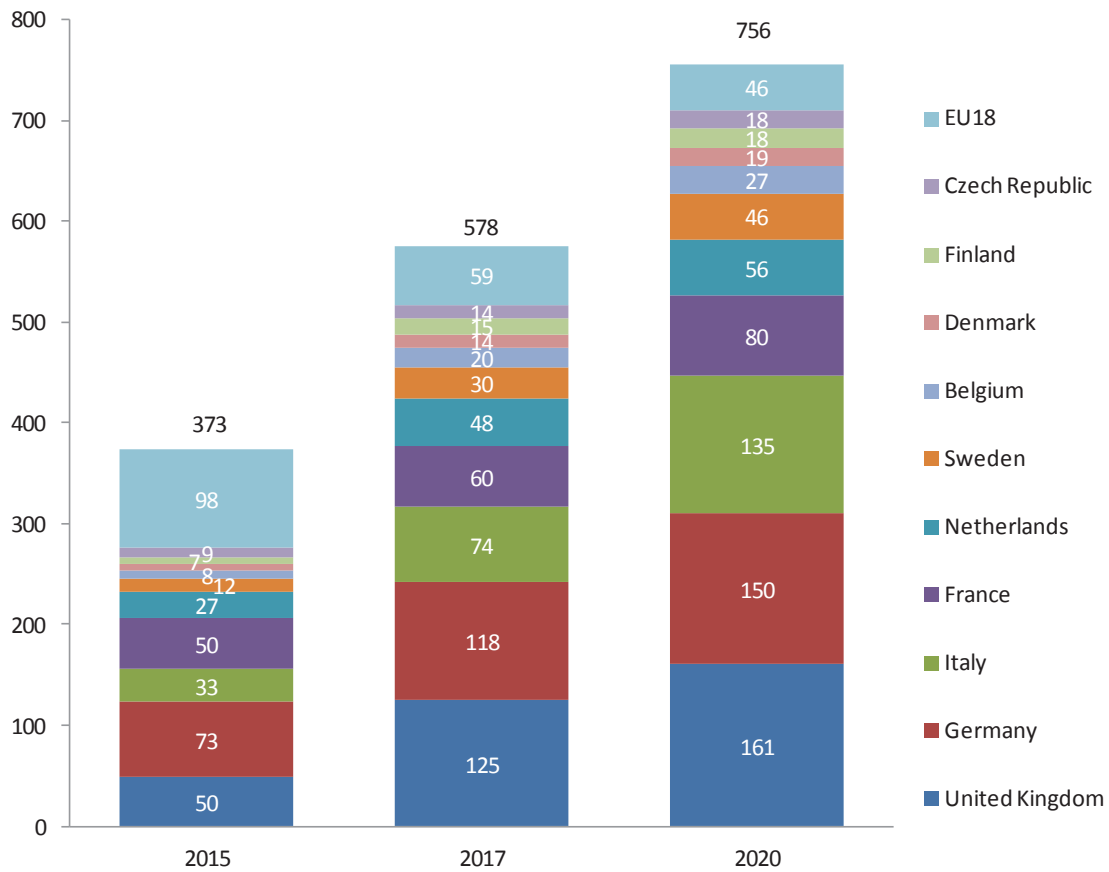
Source: empirica 2015

Figure 21a: Main Forecast Scenario: ICT Professional Jobs and Demand in Europe (EU-27) 2014 – 2020



Source: empirica 2015

Figure 21b: e-Skills Vacancies Estimate- 'Main forecast scenario': Distribution of vacancies per country ('000s)



Source: empirica 2015

Outlook for ICT professionals

Demand for ICT skills keeps growing at a tremendous pace. The trend in core IT jobs has been up to 4% growth p.a., the growth in management jobs up to 8% growth p.a. However, demand for medium level skilled associate and technician jobs is declining. In total, despite the crisis, we have seen new jobs being created in Europe continuously. There is thus a need to continuously increase the quality and the relevance of e-skills. At the same time, although graduate figures seem to stabilise, supply from universities does not seem to keep pace.

Job growth is largest in highly skilled jobs such as management, architecture and analytics positions, and this reinforces the need for more and better e-Leadership skills. The fact that these positions are usually recruited from the pool of seasoned practitioners and other (non-ICT) managers, together with a presumed lack of entry level jobs at medium level skills may evolve into recruitment bottlenecks in the longer term. However, at the same time the pace of change seems to be still increasing in ICT jobs, and new job profiles pop up which naturally cannot yet be fully covered in statistical classification, such as Big Data and Cloud computing specialists. Many of these jobs are not genuinely ICT jobs but will be at a professional level, for instance in finance, marketing, or consulting – helping new business processes be defined and implemented.

This is a huge opportunity for creation of new jobs generated in all industry sectors, beyond the traditional pathway of ICT studies, but with a strong imperative for ICT to permeate other

and new educational trajectories. ICT has traditionally been a field in which outsiders – in terms of formal education or career trajectory – play a crucial role. However, recently increased endeavours are made to reach a higher level of professionalisation of the profession, which increasingly includes formal education requirements. These are not necessarily to be sought in a traditional university or vocational education, but may still be acquired later in the career, a workaround that the ICT profession has maintained like perhaps no other profession for decades. Nevertheless, increasing requirements of formal education make continuous professional education, lifelong learning and executive education even more important. There is an immense opportunity today for new education and research approaches, new modes of delivery, better curricula and learning outcomes, overcoming the current mismatches and contributing to a sustainable market economy.

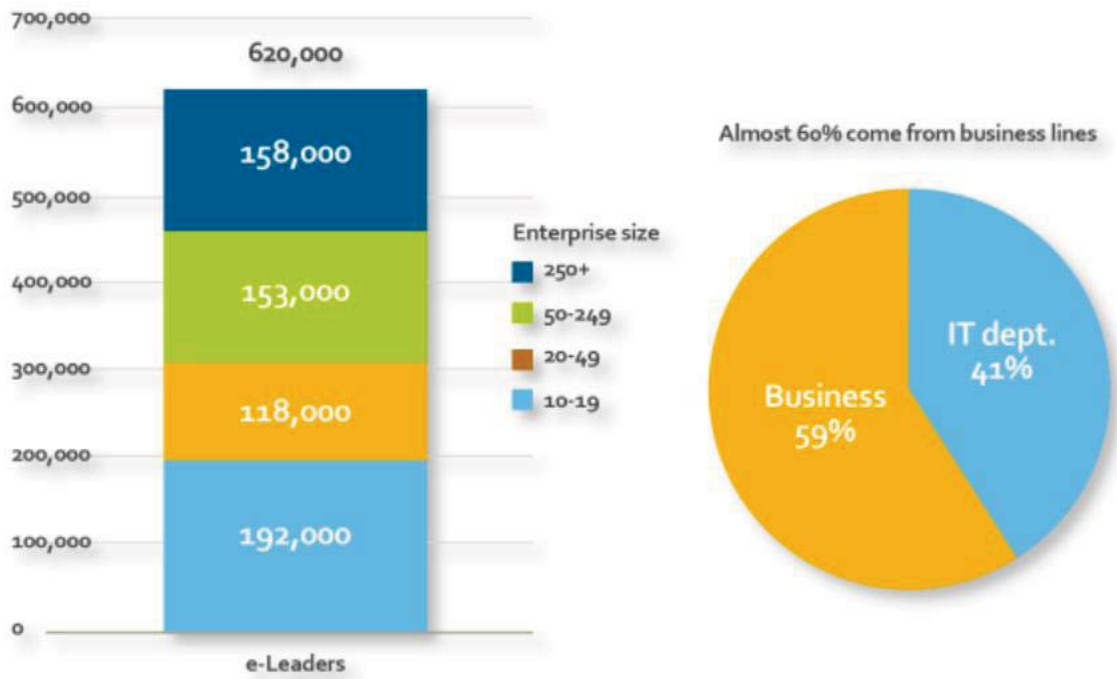
e-Leadership skills shortages

Ensuring ICT-based innovation opportunities are identified, grasped and guided to fruition requires e-leadership at the different stages in the innovation life cycle. It is seen as particularly critical not only to be able to envision an innovation, and to assess its likely success in the organisation, but also to communicate this vision to executive colleagues controlling the resources impacted by the proposed organisational change. This was operationalised as the performance of two key component e-leadership roles.

The first is the role of proposing an innovation project. The success of a proposal was conceptualised as an innovation project resulting from the proposal. Making proposals not leading to a project can be taken as an indicator of failure in e-leadership, having arisen either from inability to assess business outcome appropriately or inability to persuade business colleagues of the probability and value of the business outcome. A second key component of an e-leadership role is seen as that of guiding an innovation project to success. This is not implementation of an IT solution, nor even managing its implementation, but acting as the client for the innovation project - assessing proposals, monitoring conformance to requirements, accepting results etc., including acting as client for delivery of solutions from outside organisations. Both these e-leadership component roles are required ensure that innovative IT applications and services are identified and successfully deployed to improve performance and competitiveness.

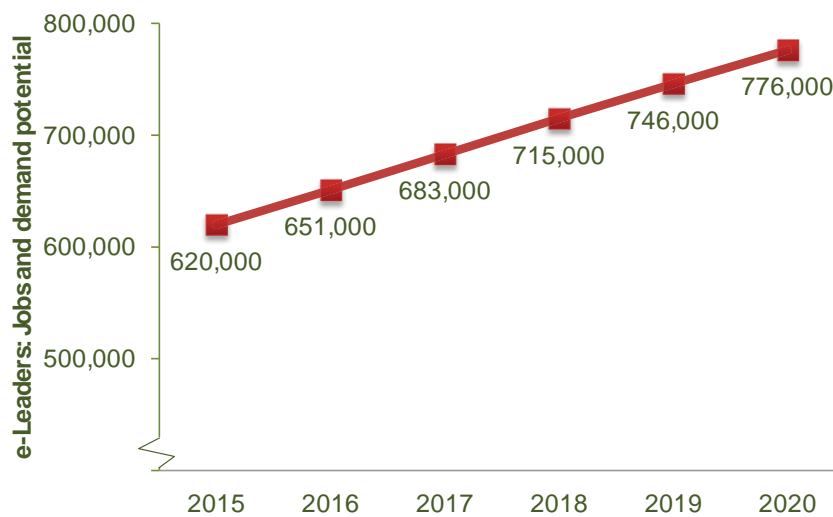
In 2015, it is estimated that there are over 620,000 innovation e-Leaders in Europe. A majority of almost 60% comes from the business units in companies and not from IT departments. 158,000 e-leaders are found in large enterprises (see Figure 22).

Figure 22: e-Leadership quantification 2015



IDC and empirica have forecast demand for highly skilled ICT occupations²⁰⁵ to rise by on average 4.6% until 2020. This would result in a demand potential for 776,000 e-leaders in 2020.

Figure 23: e-Leadership forecast, lower bound and upper bound scenario



²⁰⁵ ICT management, architecture and analysis skills. Demand for these jobs is forecast to rise from 1.94 million (2013) to 2.65 million (2020).

Europe will thus need increase the number of e-leaders by 156,000 until 2020. Taking account of expansion and replacement demand, Europe will so need 200,000 to 250,000 additional innovation e-leaders by 2020, or 40,000 to 50,000 per year.

Outlook for e-Leaders

Recent research demonstrates that there is a significant demand of e-leaders in Europe. First attempts to quantify the existing e-leadership workforce based on company's involvement in ICT based innovation activities result in some 620,000 e-leaders in European enterprises. Around 70% of e-leaders are found in SMEs and interestingly enough, we see 59% of e-leaders outside the IT department, coming from lines of business, and 41% being IT department inhabitants.

Closing this skills gap requires an ecosystem perspective, connecting the demand and supply side stakeholders of e-leadership skills. Responding to the inadequacies in the skills market flagged by stakeholders across the EU, the European Commission has launched the EU e-skills strategy and the "Grand Coalition for Digital Jobs". After responding to requirements for increased professionalism among ICT practitioners, and developing strategies and instruments to bridge the gap between e-skills demand and supply at that level, the new focus is on the skills gap in the e-leadership domain. The first pan-European initiative on e-leadership was launched in 2013 (www.eskills-guide.eu).

A key practical instrument in communicating skills requirements are the new e-leadership curriculum profiles, which specify core skills, learning outcomes, understanding and competences required by e-leaders today, whether they lead innovation teams bringing specialist understanding of topics such as enterprise architecture or take full responsibility for enterprise innovation at C level.

A key element of these curriculum profiles and the guidelines is the requirement for mapping existing programmes onto the skills and competences of the European e-Competence Framework (www.ecompetences.eu). The e-leadership curriculum profiles and guidelines use and applicability has been demonstrated by the universities and business schools directly participating in this initiative in several European countries. Response by the education community is picking up with already more than 20 universities and business schools having evaluated their programmes against the new e-leadership profiles. Further dissemination and substantial stakeholder engagement was achieved through 10 regional cluster events throughout Europe reaching out to more than 1200 stakeholders and experts. The initiative continues to be open to education institutions, industry and associations understanding e-leadership skill requirements in the workplace.

The European Commission launched the complementary e-Leadership Skills for Small and Medium sized Enterprises action in January 2014. This Commission initiative is complementary to the above one on 'New Curricula for e-Leadership' and focusing on entrepreneurs, managers and advanced ICT users in SMEs, start-ups and gazelles (www.eskills-lead.eu). This initiative has developed guidelines for designing e-leadership training and education for SMEs and start-up companies. It has shown the divers pathways to e-leadership for SMEs and demonstrated how five pioneering European universities and business schools have addressed the lack of appropriate e-leadership education through developing and teaching innovative short and longer-term e-leadership courses for this target group.

Focus on Key enabling technologies (KETs)

KETs are a group of six technologies: micro and nanoelectronics, nanotechnology, industrial biotechnology, advanced materials, photonics, and advanced manufacturing technologies. They have applications in multiple industries and help tackle societal challenges. Countries and regions that fully exploit KETs will be at the forefront of creating advanced and sustainable economies. The growth potential of KETs heavily relies on both the quality of skills possessed by the current and future employees, as well as the number of people qualified, available and willing to work in KETs. Therefore, skills imbalances in KETs are likely to significantly diminish KETs growth potential and employment effects. In its report of June 2011, the first HLG recommended that KETs skills should be promoted within the framework of the regional policy through the European Social Fund. In its status Implementation Report, the second HLG invited to put in place a European-wide education and training plan for KETs. The HLG also highlighted the need to ensure a pool of skilled multi-KETs technologists through the Future and Emerging Technologies Programme (FET). The HLG emphasised the need for the EC, Member States and regions to address the current KETs-related skills imbalances in a comprehensive and integrated manner across all technical levels in various KETs domains

To this end in January 2014, the Commission launched an initiative aiming to address the skill requirements for KETs. The report for the “Vision and Sectoral Pilot on Skills for Key Enabling Technologies²⁰⁶” was prepared by Price Waterhouse Cooper (PwC). PwC analysis suggest that the key challenges leading to a mismatch in KETs skills in Europe include: (1) a need for a regular (re-)training of current employees; (2) educational programmes being not fully aligned with industry needs; (3) high replacement needs of employers, or needs to attract new people to replace the outgoing workforce, i.e. both retiring employees and people going to other sectors; (4) low awareness of KETs when students make critical choices; (5) relatively unattractive image of KETs as a field to work in; (6) limited opportunities to study KETs; and (7) ‘brain drain’ of highly qualified people to other countries.

Demand and supply analysis of KETs skills

Due to an absence of comprehensive and harmonised employment data for KETs, the calculations presented below should be considered as approximate estimates.

- Demand for KETs skills in 2013 equalled an estimated total of 2,234,000 technical KETs professionals and associates. Highly-skilled KETs employment accounts for 55% of total employment, 37% medium-skilled employment and 8% low-skilled employment.
- Between 2013 and 2025 an additional 953,000 KETs professionals and associates will be needed to satisfy demand. On average, between 2013 and 2025, there will be an additional demand of 79,000 KETs workers per year (between 2013 and 2025, an increase in demand for KETs skills of 43% is expected).
- A key share of the extra demand is made up by replacement demand (e.g. due to retirement or moving to other sectors) with a total of 772,000 KETs professionals and associates. Expansion demand (i.e. new jobs) is estimated to be a relatively

²⁰⁶ KETs have been defined by the European Commission as knowledge intensive technologies associated with high R&D intensity, rapid innovation cycles, high capital expenditure and highly skilled employment. KETs enable process, goods and service innovation throughout the economy and are of systemic relevance. KETs currently include the following six areas of technology: micro-/nanoelectronics, nanotechnology, photonics, advanced materials, industrial biotechnology and advanced manufacturing technologies.

small share of total additional demand for KETs skills till 2025, with a total of 181,000 KETs jobs.

- Most of jobs related to additional demand (62%) will require highly skilled people, though there is also a relatively strong increase in demand expected for medium skilled people in KETs (30% of additional demand).
- The data show potential for a skills gap, both for high and medium skills: a possible gap in the range of approximately 21,000 to 83,000 highly-skilled KETs employees per year and 10,000 to 44,000 medium-skilled KETs workers per year, depending on how the field develops. Trend analysis shows that medium-level KETs skills potentially face both an increase in demand and a decrease in the number of graduates, which could further aggravate the current situation. Companies facing difficulties in attracting medium-level KETs skills right now are likely to find it increasingly more difficult to attract qualified professionals with these skills in the future.

PwC estimations show that ample supply of STEM graduates is anticipated in the future to satisfy the demand for KETs skills. However, currently, most of these graduates do not flow to KETs, which can partially be explained by a relatively unattractive image of KETs as a field to work in.

In order to reduce the discrepancies between education and industry needs, a European project NanoEIS²⁰⁷ (“Nanotechnology Education for Industry and Society”) has produced model curricula for bachelor, master and doctoral studies that can be used to check contents of existing study offers and to help structure new ones. These model curricula combine the hard core subjects needed in this area with other skills that are in demand by industrial and non-industrial employers. With industry and students both arguing for a stronger consideration of more general topics like health, safety, regulation and environment, it is up to university teachers and administrators to adapt to the needs of industry.

Focus on the shift to a low-carbon economy

Developments in the fields of energy, transport, manufacturing, agriculture and also in land use are key for realising the move towards a sustainable and secure low-carbon economy - meeting the EU climate and energy targets for 2020 and 2030, and addressing the long-term vision towards reducing greenhouse gas emissions to 80-95% below 1990 levels by 2050²⁰⁸. With the international COP21 Paris Agreement governments agreed to limit global temperature rise to "well below 2°C" and make efforts to limit the rise to 1.5°C. These goals are ambitious and achieving them will require decarbonisation of the whole economy. To enable this economic transformation, the workforce across a wide range of sectors would need to adapt to new business models and methods and meet the demand for new green skills.

An innovation driven transition towards a low carbon economy offers opportunities for growth and jobs in Europe as new businesses and job profiles will emerge. In particular, growth sectors such as renewable energy or energy efficient products and services provide opportunities for European technological leadership. The EU has pledged to maintain the first

²⁰⁷ http://cordis.europa.eu/result/rcn/181607_en.html

²⁰⁸ Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee, the Committee of the Regions, a Roadmap for moving to a competitive low carbon economy in 2050, COM(2011) 112 final; Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee, the Committee of the Regions, Energy Roadmap 2050, COM(2011) 885/2

mover advantage, notably in renewable energy and energy efficiency. Under the Energy Union strategy, the objective is to create an environment that allows investors and businesses to fully seize these new opportunities, and consequently be able to generate new jobs and growth. Implementing the EU policy objectives in this field is largely dependent on the development and advancement of efficient and cost-effective low carbon energy solutions, a key objective of the EU's Strategic Energy Technology (SET) Plan²⁰⁹.

An analysis performed for the SET Plan Education and Training Roadmap²¹⁰ reveals that in 2012 the main low-carbon energy fields employed around 9 million people.²¹¹ Considering the 2050 vision, the performed analysis shows a projected doubling of the workforce by 2030.

This transformation also requires restructuring between sectors, with for instance expected negative impacts on traditional fossil fuel extraction industries. Systems of skills formation that foster labour mobility and transfer of existing skills to different sectors, locations and workplaces will facilitate any such transition. A large number of the current workforce in these and adjacent sectors should undergo re-training, making the challenge even more perceptible.

As evolving fields, energy, transport and manufacturing require continuous updating of the knowledge base. Many of the low carbon technology options are not yet mature. Hence, there is a need to systematically update research, education and training programmes at all levels with new research-based and industrial knowledge and to provide adequate interdisciplinary integration of knowledge from relevant fields. This should go in parallel with encouraging and supporting new knowledge creation and basic research developments in universities, including joining efforts along common objectives, as well as developing adequate professional training schemes to provide for shifts in the existing workforce.

Evidence from a number of countries shows that skill shortages have already developed in certain "green" sectors and occupations, which are not well served by traditional training institutions²¹². Such shortages affect, in particular, SMEs, which are often relatively unaware of the technological and operational adaptations required by the low-carbon development. In the manufacturing sector, the shift to greener technologies has generated a significant need for specific engineering skills (e.g. electric engineering of hybrid cars, manipulation of light materials, product design) or for specific occupations (e.g. energy auditors, photovoltaic installers, insulation workers, environmental engineers, sheet metal workers).²¹³

The Circular Economy package adopted by the Commission in December 2015 will generate business opportunities and jobs. This applies both to new and expanding sectors, such as recycling and remanufacturing, as well as to innovative services such as product leasing. As an example, full implementation of current waste legislation, together with the proposed new targets, is estimated to lead to the creation of more than 500,000 new jobs in the EU.

²⁰⁹ European Commission website, "Highlights", Research and Innovation

²¹⁰ <https://setis.ec.europa.eu/setis-output/education-training-roadmap>

²¹¹ Within this figure, around 1.2 million are directly engaged within the value chains of low carbon energy supply technologies (up to 2 million if we consider also the bioenergy agriculture and forestry supply chain); around EUR 6.2 million are engaged on the demand side, energy efficient buildings having the highest share; about 900 thousand are employed in the electricity and thermal networks value chains, including energy storage developments.

²¹² Strietska-Ilina O. et al., Skills for Green Jobs, A Global View, Synthesis Report based on 21 Country Studies, Cedefop, ILO, 2010

²¹³ European Commission, Employment and Social Developments in Europe 2015, Publications Office of the European Union, 2016

2.4.3. Skills intelligence at European level: the Europass framework

Over the years the Commission has launched a range of tools and services on skills and qualifications to offer information and make skills more visible and comparable. These include, i.a.: the Europass framework, a set of documents including a CV, that allows provision of information on people's skills and qualifications in a clear and consistent way²¹⁴; the Learning opportunity and Qualifications Portal (LOQ), which provides information on learning opportunities and qualifications systems; the EU Skills Panorama, which is a central access point for information on skills and jobs intelligence across Europe. Support services at national level are also offered by networks such as the EQF National Coordination Points, the National Europass Centres and the Euroguidance Centres dealing with skills, qualifications and guidance issues. EURES is a network of employment services and a mechanism for an automated matching of people to jobs through the EURES common IT platform, the European Job Mobility.

These services are underpinned by ESCO, the Classification of European Skills, Competences, Qualifications and Occupations, which offers a common language to makes skills more transparent in the European labour market and the education and training sector.

Evaluations have highlighted limitations associated with these tools including the stand-alone nature of a number of these tools and the need to ensure the tools and developed in line with evolving needs. Implementation and development of the tools and services has suffered from a lack of co-ordination at both EU and national level - the existing tools and services have been developed on a case-by-case basis without formal coordination or communication between their respective governance structures at EU level. National centres have their remit limited to single issues such as the European dimension in guidance, the promotion of Europass documentation tools or the implementation of the EQF, and as such do not reflect the strong inter-dependence of the different tools in how they operate.

To respond to this issue efforts are required to both modernise and ensure the relevance of the available tools but also to ensure they are offered in a more comprehensive, streamlined way. One effect of this would be to offer tools and services for skills documentation (e.g. Europass) and skills needs anticipation (e.g. Skills Panorama) through a single tool. Connecting such instruments with information on cross-border qualification recognition practices, links between national qualifications with the European Qualifications Framework (EQF), learning and career opportunities (both at home and abroad) and current job vacancies (EURES) would provide a valuable integrated bundle of information services on skills and qualifications that citizens can access at any point when making career or employment decisions.

2.5. EU funding opportunities for skills

The most competitive economies invest a higher share of their GDP in education and register a higher propensity of employee training by the private sector²¹⁵. The workforce that possesses the right skills and is able to acquire the necessary new ones quickly and easily is a strategically important asset of the EU. To this end, a number of funding resources have been

²¹⁴ In the case of Europass, around 65 million CVs have been created over a period of 10 years.

²¹⁵ European Commission, Employment and Social Developments in Europe 2014, Publications Office of the European Union, 2015

set up at the EU level to help Member States and social and economic actors to invest in human capital development. These include (see Appendix 1 for more details):

- The European Structural and Investment Funds:
 - The European Social Fund (ESF)
 - The European Regional Development Fund (ERDF)
 - The Youth Employment Initiative (YEI)
 - The European Agricultural Fund for Rural Development
 - The European Maritime and Fisheries Fund (EMFF)
- Erasmus+
- Horizon2020
- The European Fund for Strategic Investment (EFSI)
- Other:
 - The EU Programme for Employment and Social innovation (EaSI)
 - The European Investment Bank's "Skills and Jobs' loan programme"
 - COSME – Europe's Programme for SMEs
 - The European Globalisation Fund (EGF)
 - The LIFE Programme

The ESF in particular remains the major EU fund supporting investment in skills, education, training and lifelong learning, by investing over EUR 27 billion in these areas during the 2014-20 programming period. In addition, over 34 billion of ESF 2014-20 support go towards promoting sustainable and quality employment and labour mobility, measures largely based on upskilling and the acquisition of qualifications.

Some of the above funds provide innovative ways to finance human capital development (e.g. financial engineering via the ESF or the EFSI), which may not be immediately taken up by the beneficiaries used to a more traditional "grant-type" financing.

In the light of the current economic situation, financial instruments are expected to play a stronger role in cohesion policy in the 2014-2020 programming period as a mechanism to deliver e.g. ESIF actions on the ground.

3. What is the view of stakeholders?

In December 2013, the Commission launched a public consultation on the possible launch and development of a European Area of Skills and Qualifications (EASQ) to collect the views of stakeholders on the problems faced by Europeans with regard to the transparency and recognition of their skills and qualifications when moving within and between EU Member States, on the adequacy of the related European policies and instruments and on the potential benefits of developing a “European area of skills and Qualifications. The consultation remained open until 15 April 2014. Overall, the consultation respondents confirmed that an EASQ should support mobility for both work and education, employability and quality education and modernisation of the education systems. More specifically, it was concluded that it should:

- Pursue coherence, simplification, ease of use, transparency and understanding of the current tools, including by ensuring that the same terminology is used. The relationship and synergies between the tools should be clear and where necessary the governance of the single tools should be reviewed, ensuring representation of all stakeholders.
- Focus on the individual and on the end-users of the tools (e.g. employers, teachers, assessors, practitioners, education providers, etc.). This means also effective communication, availability of information, guidance and training.
- Promote permeability within different sectors of education and training and forms of learning, while respecting sector specificities, thus support flexible learning pathways tailored on the individual.
- Support the development of relevant skills.
- Pursue full implementation of the learning outcomes approach across all tools and policies.
- Firmly anchor the EASQ within the Europe 2020 strategy, the European Semester and the Education and Training 2020 strategy.

As most of the results of this EASQ consultation are relevant to the skills agenda, we have taken them into account.

Subsequently, in late 2015 and early 2016, a series of in-depth stakeholder consultations were run on the overall EU Skills Agenda and concrete actions. The aim of these consultations was to hear the views of as many of the representative stakeholder groups as possible: Social partners²¹⁶, European civil society organisations²¹⁷, national Public Employment Services²¹⁸, European Social Fund Managing Authorities²¹⁹, policy networks (EQF, Europass, Euroguidance)²²⁰, European cities²²¹, education and training providers²²², national education and training policy makers²²³ voiced their views on the upcoming Skills Agenda. Welcoming

²¹⁶ ETUC, ETUCE, CESI, HOTREC, EFEE, CEEP, EUROCHAMBRES, UEAPME, BUSINESSSEUROPE, EFIP, Uni Europa and ETNO.

²¹⁷ Lifelong Learning Platform, European Youth Forum, EPA, ESN, EFIL, ECSWE, EARLALL, EAEA, EADTU, SOLIDAR, WOSM, EucA, Telecentre Europe, Reading and Writing Foundation, European Schoolnet, SALTO TIC RC/JUGEND fur Europa.

²¹⁸ National Public Employment Services of AT, BE, BG, HR, CZ, DE, HU, IT, LV, NL, PL, PT, SI, SE.

²¹⁹ ESF managing authorities of CZ, DK, EE, EL, FI, IT, LV, MT, NL, SI, SE.

²²⁰ Policy networks from CZ, EE, ES, FR, IT, LU, SE and EU level.

²²¹ Gent, Antwerp, Göteborg, Jonava, Pécs, Turku, Cork, Cádiz, Dubrovnik which attended a Territorial Impact Assessment Workshop in Brussels in March 2016 to collect their views on the urban and territorial dimension of the Skills Agenda. The workshop followed the ESPON TIA Quick Check tool to assess potential territorial impacts of the various proposals.

²²² EUproVET, ECVET, Association of VET providers, Neth-ER.

²²³ EQF AGS (AT, BE (Wallonia-Brussels), IE, LU, NL, NO + ESU, ETF, EUA), BFUG

the European Commission's initiative to take action to tackle low skills and the skills mismatch in Europe, they offered suggestions to ensure the most effective outcomes at local, national and European levels. Main results of the public consultation on the EU's modernisation agenda for higher education have fed into the Skills Agenda and are summarised in a separate document (cf. Annex II).

In addition, two policy debates were organised by the Dutch presidency in 2016, in the EYCS (Education, Youth, Culture and Sport) Council on 24 February and in the EPSCO (Employment, Social Policy, Health and Consumer Affairs) Council on 7 March. The Presidency's aim was to facilitate a debate as a basis for timely input by ministers to the Skills Agenda. Secondly, the aim was to raise awareness, too underline the urgency of the issues regarding skills and to encourage an exchange about national policy developments in the area.

Moreover, in their Resolution of 24 February 2016 on "promoting socio-economic development and inclusiveness in the EU through education: the contribution of education and training to the European Semester 2016", the Council and the Representatives of the Governments of the Member States, invited the Commission to present a proposal for a new skills agenda for Europe supporting Member States, which could consider, inter alia, ways of boosting skills development and knowledge acquisition in a lifelong learning perspective.

1. Increasing educational attainment levels, acknowledging that completing upper secondary level or equivalent tends to be considered as the minimum requirement for ensuring a successful transition from education to the labour market and for gaining access to further learning;
2. Improving the provision of key competences which are crucial for lifelong learning, employability and active participation in society and democratic life;
3. Enhancing Europe's capacity to anticipate future skills requirements and tackling skills gaps as well as skills mismatches, underlining the shared responsibility of the worlds of education and work, and building on initiatives from both sectors;
4. Promoting better transparency and use of available skills and qualifications of mobile EU workers and learners;
5. Renewing the process of modernising higher education in Europe.

3.1 Views on the overall Skills Agenda

The scope of the Skills Agenda was very much discussed. Some stakeholders, such as national ministries and civil society, argue that the scope of the Skills Agenda should not be limited to fostering employability. In the light of the Paris Declaration of March 2015 promoting citizenship and the common values of freedom, tolerance and non-discrimination through education and of the ET2020 Strategy, some feel that education and training outputs for personal development and social inclusion should also be key messages of the upcoming Skills Agenda. Others, such as the employers, argue that given the recent economic crisis and today's and tomorrow's technological and economic trends and challenges, it is essential to tackle Europe's skills mismatch to foster employability and growth.

Stakeholders call for a focus on transversal and digital skills and for promoting 21st century learning methods. Stakeholders agree that in addition to ensuring a minimum level of literacy and numeracy for all, education and training curricula and providers should focus on developing 21st century sustainable skills, including transversal skills (entrepreneurship, social and civil responsibility, cultural awareness, critical thinking, creativity, etc.) and digital skills (ICT skills, media literacy, etc.). In this regard, civil society organisations insist on the

relevance of the Key Competences Framework and that its revision should ensure its broader implementation and not undermine its purpose. Stakeholders also insist on the importance of innovative learning and assessment methods from early childhood education and care to adult education (team-work, learner-centred classrooms, etc.) and suggest fostering cooperation between formal and non-formal education and training providers. This plea goes hand in hand with a call for a learner-centred approach to education and training, including targeted outreach policies (including migrants and refugees), fostering learning communities, developing guidance services and supporting transitions to enable flexible learning pathways. Moreover, the European cities also consider it important to develop entrepreneurial skills from a very early age as well as effective communication with the companies. Overall, the Skills Agenda could provide a framework for better understanding of the skills required in the labour market and support the cooperation between the private sector and local policy makers.

Improving the image and ensuring the quality of VET and work-place learning is supported by all (cf. European Quality Charter for Internships and Apprenticeships of the European Youth Forum). There is more debate on the financing of VET. Trade unions, for example, are against any system of financing solely based on performance stating that it may foster inequality between schools and students. There is also a lack of consensus on this topic among VET providers themselves.

Opinions converge on the need to include a broad spectrum of stakeholders (social partners, NGOs, public employment services, education and training providers, private sector, etc.) in the elaboration of national Skills Strategies. Their long-standing experience and solid understanding of the issues at stake make them key players not only in designing, but also in implementing targeted education and training policies on the ground. Moreover building stakeholders' platforms at local and national level is crucial in identifying real skills needs, ensuring the involvement of each actor in the provision of these skills and developing successful and recognised validation of non-formal and informal learning practices.

Stakeholders expect the Skills Agenda priorities to be integrated into EU tools and policies. For instance, ESF managing authorities call for the new Country Specific Recommendations to be aligned with the Skills Agenda since ESIF Operational Programmes support the policy priorities set out in the CSRs.

3.2 Views on the revision of Europass

Stakeholders welcome the revision of EUROPASS. Stakeholders consider that the tool is today technologically outdated and faces difficulties in coping with changing educational, training and labour market conditions (e.g. it has no means to record non-formal learning outcomes). In this regard, civil society calls for the European Commission to stress the value of self-assessment and Open Badges. Also, stakeholders call for more coherence and interoperability between EUROPASS and other EU initiatives (Erasmus+ documentation, ESCO, EQF, etc.).

Concerning governance and the streamlining of services, stakeholders express concerns. Many believe that every network has developed its specific competence depending on the activities carried out. Some policy networks state that they have long-standing experiences of regular cooperation between each other (organising promotional events, sharing information and materials, peer group work, etc.) and do not believe that modifying their structural organisation would be necessary or beneficial. Moreover, they point out that their cooperation activities go beyond the three policy networks and also include ECVET, EQAVET, ESCO,

EURES, Eurodesk, ENIC/NARIC, and other instruments that are not included in the Revision proposal. Finally, the policy networks foresee difficulties in writing joint working plans since their activities, target groups and working partners differ. In order to reduce the administrative work-load and to set long term strategic objectives, policy networks suggest the introduction of multi-year contracts.

3.3 Views on the revision of the EQF

Many stakeholders call for an increased permeability between educational and research sectors and hence increased synergies between the existing tools (EQF, ECVET, ESCO, validation tools, etc.). Nevertheless, stakeholders underline that the EQF is not a recognition, but a transparency and reference tool. Also, stakeholders consider that the existing tools and mechanisms for validation should be better implemented before developing new ones.

There is no consensus on the issue of the extension of the EQF to third countries. On the whole, social partners and the EQF national authorities state that the EQF is not mature enough and that Commission's efforts should first focus on ensuring that the EQF is a functioning tool for comparability and transparency of qualifications in the EU. Civil society and cities defend an opposite view and call for enhanced cooperation in this area. It is suggested to improve the promotion of the EQF through the Lisbon Recognition Convention Committee and the ENIC-NARIC network.

Stakeholders' views also diverge on the proposal of referencing international sectorial qualifications to the EQF. While employers strongly welcome the proposal, national authorities in charge of the EQF believe that these qualifications must first be referenced to National Qualification Frameworks in order to ensure transparency and trust. This view is supported by civil society organisations, who believe the EQF is not ready to be opened up to such qualifications.

EQF national authorities consider that a further conceptualisation of quality assurance to that covered in Annex III in the EQF recommendation is necessary. They argue that quality assurance should go beyond the quality of education and training and also cover the quality of referencing processes, levelling procedures, monitoring and review of referencing over time.

3.4. Views on the Skills Guarantee

Stakeholders welcome an initiative for tackling the low skills gap for people of working age and many emphasised the importance of digital skills in this context. They call for a balanced approach between improving the basic skills for the low-skilled and providing labour market relevant skills ensuring that workers stay competitive and keep pace with labour market needs.

Stakeholders underlined that validation of non-formal and informal learning was crucial to give more visibility to individuals' competences and knowledge, and should be applied consistently to support the upskilling of the low-skilled (learning happens all the time).

The need to combine preventive and repair measures was emphasised. Initial education and training systems have the duty to equip people with skills for a lifetime, but at the same time the current stock of low skilled individuals which have been failed by the system needs to be catered for.

The challenge of motivating adults to engage in upskilling and reskilling was emphasised, as was the need to overcome it by greater flexibility of the education and training provision and support measures such as tailored approach and guidance.

Social partner organisation on both sides expressed broad support for the initiative and a willingness to work together to tackle the challenge of low skilled adults, without ignoring the need also to focus on middle- and high- end skills.

Trade Unions stress that they perceive basic skills as a fundamental right and would wish to see the establishment of a guarantee to this effect. They argue, however, that Member States should have flexibility over the precise level of each of the basic skills that would be the minimum required. They consider that skills should not be seen in isolation but rather set in the context of the individual's life, in which important choices may have to be made. They believed that employers need more encouragement (possibly in national legislation) to allow workers time off for training. They underline the importance of guidance for all.

Employer organisations are more cautious about a "skills guarantee", in particular if the burden is to be put on companies to compensate for the basic skills not achieved in compulsory education. They note that the acquisition of basic skills is a Member State responsibility, and believe that costs must be covered by Member States.

Some see the issue in a wider perspective and believe that the initiative should focus on all skills, whilst others consider that the results of PIAAC are sufficiently worrying to merit a focus specifically on low-skilled adults. They see digitalisation as a key challenge and that therefore digital skills must be considered one of the basic skills. The relevance of skills to companies' needs should guide the process.

3.5. Key messages from stakeholder groups

Social Partners

- The European Qualifications Framework is not yet mature for being upgraded into a recognition tool or for cross-referencing with third countries. However, employers welcome the opportunity to reference international sectorial qualifications to the EQF.
- Trade Unions are against any system of financing vocational education and training based solely on performance (because it may foster inequality between schools and students) and propose the need-based funding for VET schools.
- Employers strongly believe that basic skills training for the workforce falls within the responsibility of the governments, while trade unions call for the establishment of a Professional Skills Guarantee to ensure effective access to training for low-skilled workers and unemployed people and for a greater emphasis of the right to paid training leave
- The Skills Agenda should target migrants' and refugees' integration into the labour market, focusing *inter alia* on auditing and validating their skills and on language and citizenship/civic training.

Civil Society Organisations

- The Skills Agenda needs to insist on the learner-centred approach. This involves: fostering a strong learning culture within the communities and the work-places and

motivation among the learners, ensuring the outreach of the policies in order to include people from disadvantaged groups and migrants and refugees, supporting transitions to make flexible pathways a reality, developing innovative learning and assessment methods and new learning provisions (e.g. short online modules in HE).

- The Skills Agenda should aim to prepare citizens to adapt to the needs of the future and not only to giving them the skills needed at a certain place and time in order to have a long-term effect and avoid the obsolescence of skills. This puts the emphasis on transversal skills (in curricula and teacher-training)

European Social Fund Managing Authorities

- The Skills Agenda should focus on streamlining and simplifying the existing EU tools and services on skills and qualifications. In doing so, it is essential to link tools aimed at improving the transparency of qualifications (EQF, Europass and validation tools) with those aimed at the development/improvement of competences (incl. on basic and transversal skills).
- For the Skills Agenda's ambitions to be realised, long-term national reforms of the educational systems need to be implemented while improving linkages with employment and social service planning and delivery. The ESF can support both short-term and longer-term reforms and challenges; in reality not all reforms have a financial impact. There is a need for comprehensive reforms across the education/learning cycle
- The new Country Specific Recommendations (CSRs) should be aligned with the Skills Agenda since ESIF Operational Programmes support the policy priorities set out in the CSRs.

European cities and local authorities

- The priorities identified in the Skills Agenda are relevant for the regional and local level. A clear focus demanded by cities is on enhancing transversal and digital skills, and entrepreneurship. On the other hand cities can play an important role in better linking the skills available and local business` needs, particularly in fast evolving sectors. Partnerships should be promoted (between local authorities, educational institutions and companies). Skills development should start already in kindergarten and school systems should be more responsive to labour market needs. Issues to tackle are also the low motivation, limiting conditions or lack of knowledge of citizens to improve their own skills.
- There is a need to develop and use data and forecast systems on labour market needs for future vocational trainings can be very useful but due to incomparability of databases and privacy rules quantitative data can be often fragmentary and incomplete, and information surveys do not assess effectively the needs of local SMEs.
- A more comprehensive EU framework for qualifications is needed, for example by introducing an integrated skills system to create the possibility for third-country nationals to measure their skills within an European framework and to help local authorities with tools facilitating the comparison of foreign and national qualifications.

Public Employment Services

- The focus of the Skills Agenda should be on the low skilled in order to increase their employability on the labour market.
- More priority should be given to workplace learning as a pillar of lifelong learning in order to ensure the employees' adaptation to new challenges and technologies.
- Tailor-made education and training is essential for adult education to be efficient. Education and training should depend on the learner's skills (importance of skills audit and validation) and on the specific needs of a labour market sector at a given moment.

VET Providers

- There is a need to better reference VET to the EQF. VET providers ask NQFs to better reference higher VET at levels 5 and 6 because there is still some resistance from the traditional university systems. This will allow for more flexible pathways and permeability between Education and Training sectors.
- There is a lack of consensus on performance based financing systems in VET. Moreover, it may not be applicable in countries that do not depend on public financing (e.g. German dual system that relies on companies and chambers contributions).
- To improve **VET attractiveness** it is important to showcase its **social utility** and to ensure high quality and good return on investment, VET providers should monitor the outcomes and impact of their provision by looking at some key indicators.

Networks implementing policy

- Welcomed a European initiative addressing the low skilled people and stressed that guidance, outreach, awareness raising as well as effective policy coordination are key in successful delivery of such an initiative.
- The idea of one centre at national level to implement EQF, Europass and guidance policies is inspirational but might be difficult to implement at national level if countries are not given the appropriate flexibility. Although many agree that the audiences of Europass, EQF and Euroguidance are similar, which often results in overlapping promotional activities at national level, they believe that every network has developed its specific competence depending on the activities carried out.
- In the case of a common budget for the 3 policy networks, stakeholders ask for the grants to be earmarked for each network (with specific work plans).
- Multi-year contracts should be introduced. This would enable the setting of long term strategic objectives and give more time for discussions between stakeholders.

EQF Advisory Group

- Priority should not be given to international actors (third-country qualifications and private sectorial qualifications). Furthermore, the principle of subsidiarity makes it impossible for international sectorial bodies to be directly linked to the EQF through a "European Qualifications body" and that it should be demonstrated

in the SWD how all these proposals comply with the EU guidelines on Better Regulation.

- While the EQF can facilitate recognition, it cannot become a recognition tool or support credit accumulation across different types of education and training.
- Tackling the remaining strong challenges for the development of National Qualification Frameworks such as the lack of trust between the stakeholders, the very theoretical image it has and of its shortcomings for including non-formal qualifications and supporting recognition, should be a priority. They suggest a better linkage with academic recognition, to systematically describe programmes in terms of learning outcomes and developing methods for horizontal comparisons.

Think-tanks

- It is essential to internationalise and regionalise VET. More should be done to enable regions/countries to share information about their skills needs and demands and to reduce administrative practicalities between border regions.
- Lifelong learning should be at the heart of the Skills Agenda. It is the only way for employees to keep up-to-date with the latest research and technological developments of their sector.

Table 1. Overview of consultations with key stakeholders on the overall EU Skills Agenda and the proposed concrete actions

Type of partner	Type of consultation
EYCS Council, 24 February	Policy debate
EPSCO Council, 7 March	Policy debate
Social partners	Dedicated hearing (20-21/01/2016), written contributions
Civil society organisations	Event (15/03/2016), written contributions
EQF Advisory Group (+ EQF National Coordination Points and education attaches)	Meeting (19/01/2016), written contributions
Public Employment Services	Written contributions
ESF Technical Working Group	Written contributions
Cities (via Eurocities)	Online survey
National Europass Centres, EQF National Contact Points, Euroguidance Centres	Meeting (29/02/2016), written contributions
Expert group on VET providers	Meeting (24/02/2016), written contributions
Advisory Committee on Vocational Training	Meeting (12/2015), written contributions
Directors General of Vocational Education and Training	Meeting (17/02/2016)
ECVET Users Group	Meeting (25/02/2016)

National coordinators for adult learning	Meeting (7 April 2016), written contributions
BFUG (Bologna Follow-up Group)	Written contributions
Think-tanks (Neth-er)	Written contribution

APPENDICES

Appendix 1. Skills glossary

For the purpose of this Communication and accompanying Staff Working Document, the term "skills" is used in a broad sense and refers to what a person knows, understands and is capable of doing. However, under this broad definition, in the vast literature on skills, many different and more precise definitions and concepts are used to describe different kinds of skills.

BASIC SKILLS;	
Skills that form the foundation for further learning, working and living in contemporary society. (Fundamental skills in Literacy, Numeracy, Science and Technology and fundamental Digital Competences).	
Sources:	
Cedefop	The skills needed to live in contemporary society, such as listening, speaking, reading, writing and mathematics.
Recommendation on key competences for lifelong learning	Fundamental basic skills of language, literacy, numeracy and in information and communication technologies
Skills Guarantee	For the purposes of the Skills Guarantee, basic skills are defined as literacy, numeracy and basic digital skills

TRANSVERSAL SKILLS	
Skills which have been learned in one context or to master a special situation or problem but apply to more contexts in daily life, study or work environment.	
Sources:	
ET 2020 Working Group on Transversal Skills	Skills such as the ability to think critically, take initiative, problem solving and work collaboratively, skills which are relevant for individuals as citizens and in employment in today's varied and unpredictable career paths.
Cedefop	The skills individuals have which are relevant to jobs and occupations other than the ones they currently have or have recently had. These skills may also have been acquired through non-work or leisure activities or through participation in education or training. More generally, these are skills which have been learned in one context or to master a special situation/problem and can be transferred to another context.
ESCO	Skills and competences relevant to a broad range of occupations and sectors. They are often referred to as core skills, basic skills or soft skills, the cornerstone for the personal development of a person. Transversal skills and competences are the building blocks for the development of the "hard" skills and competences required to succeed on the labour market. ESCO has developed a classification for transversal skills with the following skills groups: Thinking (e.g. Evaluate information), Language (Mother Tongue, Foreign language), Health and safety (e.g. Follow hygienic work practices); Information and communications technology (e.g. Create electronic content); Numeracy/mathematics (e.g. Carry out work-related calculations); Working environment (e.g. Apply quality standards); Social interaction (e.g. Accept constructive criticism); Attitudes (e.g. Demonstrate willingness to learn) and Values (e.g. Follow ethical code of conduct)
Rethinking Education	Ability to think critically, take initiative, solve problems and work collaboratively, entrepreneurial initiative, digital skills and foreign languages

KEY COMPETENCES

Those competences which all individuals need for personal fulfilment and development, active citizenship, social inclusion and employment :

1) Communication in the mother tongue; 2) Communication in foreign languages; 3) Mathematical competence and basic competences in science and technology; 4) Digital competence; 5) Learning to learn; 6) Social and civic competences; 7) Sense of initiative and entrepreneurship; and 8) Cultural awareness and expression.

Sources:

Recommendation on key competences for lifelong learning	Those competences which all individuals need for personal fulfilment and development, active citizenship, social inclusion and employment : 1) Communication in the mother tongue; 2) Communication in foreign languages; 3) Mathematical competence and basic competences in science and technology; 4) Digital competence; 5) Learning to learn; 6) Social and civic competences; 7) Sense of initiative and entrepreneurship; and 8) Cultural awareness and expression
Cedefop	Sum of skills (basic and new basic skills) needed to live in contemporary knowledge society.
Transversal Working Group Key Competences	The competences identified as necessary for personal fulfilment, active citizenship, social cohesion and employability through lifelong learning in a knowledge society. OJEU (2006)

KNOWLEDGE

The outcome of the assimilation of information through learning. Knowledge is the body of facts, principles, theories and practices that is related to a field of work or study. In the context of the European Qualifications Framework, knowledge is described as theoretical and/or factual.

Sources:

EQF	The outcome of the assimilation of information through learning. Knowledge is the body of facts, principles, theories and practices that is related to a field of work or study. In the context of the European Qualifications Framework, knowledge is described as theoretical and/or factual;
ESCO	The outcome of the assimilation of information through learning. Knowledge is the body of facts, principles, theories and practices that is related to a field of work or study." Both skills and competences rely on factual and theoretical knowledge, the difference lies in the way this knowledge is applied and put into use

SKILLS

The ability to apply knowledge and use know-how to complete tasks and solve problems. In the context of the European Qualifications Framework, skills are described as cognitive (involving the use of logical, intuitive and creative thinking) or practical (involving manual dexterity and the use of methods, materials, tools and instruments).

Sources:

EQF	The ability to apply knowledge and use know-how to complete tasks and solve problems. In the context of the European Qualifications Framework, skills are described as cognitive (involving the use of logical, intuitive and creative thinking) or practical (involving manual dexterity and the use of methods, materials, tools and instruments);
ESCO	The ability to apply knowledge and use know-how to complete tasks and solve problems". They can be described as cognitive (involving the use of logical, intuitive and creative thinking) or practical (involving manual dexterity and the use of methods, materials, tools and instruments). The term skill refers typically to the use of methods or instruments in a

	particular setting and in relation to defined tasks.
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COMPETENCE	
The proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development.	
Sources:	
EQF Recommendation	The proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development.
ESCO	The proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development. The term competence refers typically to the ability of a person - facing new situations and unforeseen challenges - to use and apply knowledge and skills in an independent and self-directed way.
TWG Key Competences	A combination of knowledge, skills and attitudes applied appropriately to a context in order to achieve a desired outcome. OJEU (2006)
Recommendation on key competences for lifelong learning	Combination of knowledge, skills and attitudes appropriate to the context

LEARNING OUTCOMES	
Statements of what a learner knows, understands and is able to do on completion of a learning process, which are defined in terms of knowledge, skills and competence.	
Sources:	
EQF	Statements of what a learner knows, understands and is able to do on completion of a learning process, which are defined in terms of knowledge, skills and competence;

QUALIFICATION	
A formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards.	
Sources:	
EQF	A formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards;
Cedefop	<p>Qualification covers different aspects:</p> <ul style="list-style-type: none"> • Formal qualification: the formal outcome (certificate, diploma or title) of an assessment process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards and/or possesses the necessary competence to do a job in a specific area of work. A qualification confers official recognition of the value of learning outcomes in the labour market and in education and training. a qualification can be a legal entitlement to practise a trade (OECD); • Job requirements: knowledge, aptitudes and skills required to perform specific tasks attached to a particular work position (ILO).

SKILL GAP

Situation where an individual does not have the level of skills required to perform his or her job adequately. Skill gaps can be analysed at individual level (using a skills audit), at company/sector level, or at regional, national or international levels; Skill gaps can be linked to an insufficient level of qualification; They may also refer to situations where the workforce has the right level of qualification but lacks specific types of skills (such as management skills) or experience required to perform a task or a job adequately.

Sources:

Cedefop

Situation where an individual does not have the level of skills required to perform his or her job adequately. Skill gaps can be analysed at individual level (using a skills audit), at company/sector level, or at regional, national or international levels; Skill gaps can be linked to an insufficient level of qualification; They may also refer to situations where the workforce has the right level of qualification but lacks specific types of skills (such as management skills) or experience required to perform a task or a job adequately.

SKILL MISMATCH

Situation of imbalance in which the level or type of skills available does not correspond to labour market needs. Skills mismatch can be a surplus or a lack of knowledge, abilities and competences; skill mismatch can be analysed at different levels (individual, enterprise, sectoral, economy); experts distinguish between vertical mismatch (the level of education/skills is higher or lower than required) and horizontal mismatch (the level of education/skills matches job requirements, but the type of education/skills is inappropriate for the current job).

Sources:

Cedefop

Situation of imbalance in which the level or type of skills available does not correspond to labour market needs. Skills mismatch can be a surplus or a lack of knowledge, abilities and competences; skill mismatch can be analysed at different levels (individual, enterprise, sectoral, economy); experts distinguish between vertical mismatch (the level of education/skills is higher or lower than required) and horizontal mismatch (the level of education/skills matches job requirements, but the type of education/skills is inappropriate for the current job).

Appendix 2. Overview of EU funding instruments for skills

1. European Structural and Investment Funds (ESIF)

During the 2014-2020 programming period²²⁴, the ESIF will provide substantial support investment in education and training by Member States. Funding will be concentrated on i) preventing early school leaving and promoting equal access to good quality early childhood, primary and secondary education. (ii) improving both the relevance of education and training systems and the transition from education to work and life-long learning; (iii) modernising higher education; (iv) developing vocational education and training, apprenticeships and traineeships; (v) upgrading education infrastructures. It is expected that:

- 4.1 million young people will benefit;
- 2.9 million people will gain a qualification;
- 400 000 people will start education or training after receiving support;
- 6.8 million young people will be able to use new or improved childcare or education facilities in 15 Member States.

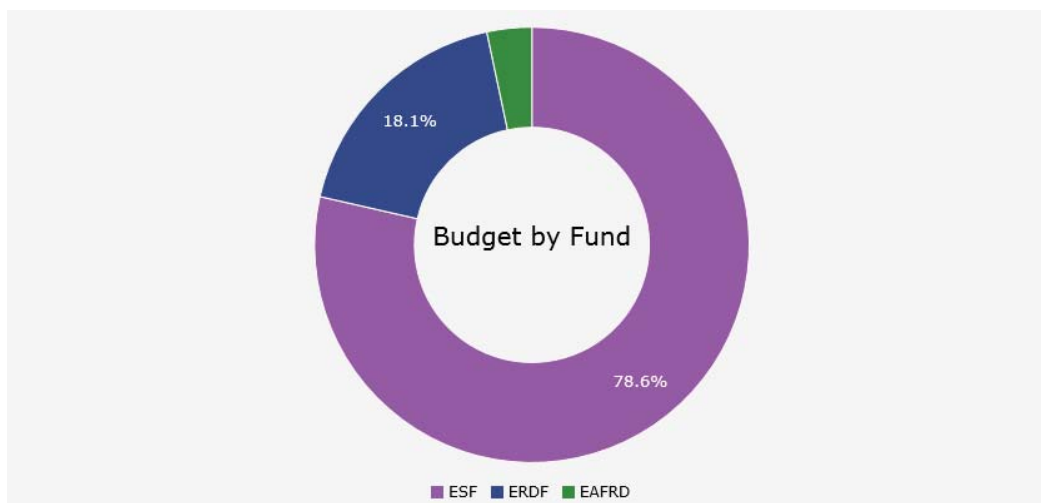
In addition, investment in education infrastructure is aimed at improving access to high-quality education and to a decrease in early school leaving, as well as improved and modernised education and training systems needed for updating skills and qualifications, upskilling of the labour force, and the creation of new jobs.

The main source of investment in human capital is provided by the European Social Fund (ESF) and for education infrastructure by the European Regional Development Fund (ERDF).

Investment in training, retraining and upskilling is also provided through the European Agriculture and Rural development Fund (EAFRD). As regards specifically investment in education and training in the 2014-20 period the ESF allocations amount to over €27 billion. ERDF support for education infrastructure comes up to over €6 billion, and EAFRD investment in training is just over €1 billion.

Figure 24: 2014-2020 ESIF budget for education and training, by Fund

²²⁴ http://ec.europa.eu/contracts_grants/pdf/esif/invest-progr-investing-job-growth-report_en.pdf



2. The European Social Fund (ESF)

Results of the ex-post evaluation 2007-2013

Preliminary results of the ex-post evaluation of the ESF 2007-2013 programming period show that in the area of human capital, generally, all Member States addressed both the strategic objectives of improving the quality of education and training systems and increasing the participation in education and training.

The strong targeting allowed a significant proportion of the population in key priority groups to be reached, with a clear focus on young people, employed workers and people with lower educational attainment levels

In the area of human capital, the ESF investment involved substantial additional resource leading to a significant increase in the number of participants in human capital interventions (49.7 million, equally split between men and women and with few gender-based differences in results). This investment proved particularly important in the context of the economic crisis as it effectively reached new groups of learners. In addition the ESF human capital investment has contributed significantly to promoting new measures, approaches and innovative teaching methodologies, including improvements in the quality of and participation in measures to improve teacher training development of new curriculum and the introduction of new management and evaluation methods in initial education. This included the establishment of successful partnerships. When it comes to the net effects of vocational training measures under evaluation, the employment rate of ESF participants increased between 4 to 11 percentage points in one country, and between 10 and 20 percentage points around one to two years after the start of the training in another country.

During the current programming period 2014-20, significant funding is allocated to each of the education and training-related investment priorities under Thematic Objective 10 as illustrated by the table below. Yet, it should be noted that ESF-relevant investment priorities such as those related to access to employment, integration of young people on the labour market and active inclusion also directly support basic education (e.g. for young early school leavers or adults without the necessary qualification levels allowing for direct labour market integration support) and dual learning, notably through apprenticeships. This is of direct

importance to the Skills Agenda initiatives, in particular those linked to improving basic skills and literacy.

Furthermore, the 2014-20 cycle is marked by an increased use of financial instruments in the delivery of ESIF. As regards mobilisation of ESF specifically through financial instruments, the Commission's initial estimates indicate that approximately EUR 865 million of the ESF overall allocations are expected to be channelled via financial instruments in at least 12 Member States. Out of this total, the share of investment in education, training and vocational training for skills and lifelong learning is estimated at around EUR 24 million, while around EUR 432 million would go towards promoting sustainable and quality employment and supporting labour mobility – measures largely based on upskilling and the acquisition of qualifications.

ESF programming 2014-2020²²⁵

Priority	Budget allocation (€)
Reducing and preventing early school-leaving and promoting equal access to good quality early-childhood, primary and secondary education including formal, non-formal and informal learning pathways for reintegrating into education and training;	7,982,377,964
Improving the quality and efficiency of, and access to, tertiary and equivalent education with a view to increasing participation and attainment levels, especially for disadvantaged groups;	5,111,014,282
Enhancing equal access to lifelong learning for all age groups in formal, non-formal and informal settings, upgrading the knowledge, skills and competences of the workforce, and promoting flexible learning pathways including through career guidance and validation of acquired competences;	7,235,336,265
Improving the labour market relevance of education and training systems, facilitating the transition from education to work, and strengthening vocational education and training systems and their quality, including through mechanisms for skills anticipation, adaptation of curricula and the establishment and development of work-based learning systems, including dual learning systems and apprenticeship schemes	6,757,070,578
TOTAL Education and training ESF:	27,085,799,090

In addition, the ESF also supports transnational cooperation on areas such as youth employment, learning and skills.

Box. ESF 2014-20 Transnational cooperation on learning and skills

Transnational cooperation (TNC) in the ESF helps develop better and more effective employment and social policies and improve the delivery of reforms, essentially by enabling people to learn from experiences and good practice in other countries. In the 2014-2020 period the TNC implementation framework is based on common themes, including learning and skills. Cooperation is aimed towards further sub-themes, namely combating early school leaving, vocational education and training, accreditation (of prior learning) lifelong learning,

²²⁵ Open Data Platform, <https://cohesiondata.ec.europa.eu/themes/10>

transitions within and between school and work. Currently, 12 member States are involved in the dedicated 2014-20 TNC network on learning and skills.

3. European Regional Development Fund (ERDF)

The ERDF supports the objectives of the skills agenda in various ways, mainly by funding education infrastructure investments which help the modernisation of education and training systems, reduce early school leaving, promote better access to good quality education, enhance access to lifelong learning, strengthen vocational education and training systems, and improve the labour market relevance of education. These measures are meant to upskill the workforce across Europe and build better links between educational systems and the labour market, in order to ensure that skills match companies' needs, today and in the future. To fully develop the labour market relevance of education and training, a more integrated approach between ESF (with employment, training, social inclusion issues) and ERDF (innovation, SME, circular economy, digital growth and entrepreneurship) should be developed. Smart specialisation strategies can provide a strategic setting for this. Smart Specialisation strategies set out the agendas for economic transformation in the Member States and regions. These strategies were developed following an entrepreneurial discovery processes involving not only business and research, but also other societal actors, to identify a limited number of future fields for growth and competitiveness specific for each region of country. ERDF innovation funding will be concentrated on these fields. Many Smart Specialisation Strategies stress the need for investing in specific skills related to their priority fields and plan to draw also on ESF funding for this purpose. The Commission is setting up thematic Smart Specialisation Platforms in European strategic priority areas, such as energy transition, digital agenda, industrial modernisations or circular economy, bringing together national and regional innovation actors from different countries along new European value chains. These thematic platforms may result in the identification of needs for joint skills development, staff mobility, etc.

It is estimated that current ERDF funding to support infrastructure and equipment for education and training comes to €8.3 billion²²⁶. However, there are more "hidden" ERDF skills investments under Article 98(2) of the Common Provisions Regulation that are linked to e-government, SME support, research and innovation activities, eco-innovation, circular economy projects etc, but the programmes did not have to specify that these were skills-related investments.

4. The Youth Employment Initiative (YEI)

The YEI was launched in 2013 and was budgeted in 2014 and 2015 to help achieve targeted results in responding to high youth unemployment in the EU regions which at the time were affected the worst by youth unemployment. The current budget runs until the end of 2018. 20 Member States are eligible for the YEI, which has been integrated into 34 ESF mono- or multi-fund programmes.

Member States will use funding allocated to the YEI to invest in quality apprenticeships, traineeships and jobs that could help bring about lasting labour market integration and increase the employability of young people. This will support a key EU policy objective in this area, set out in the Council recommendation on Establishing a Youth Guarantee (2013).

²²⁶ DG REGIO estimate

The peak of YEI implementation, i.e. in terms of both financial progress and results in relation to the participants, is expected to take place in 2016-18.

Implementing the YEI is expected to:

- help 2.3 million unemployed or inactive participants complete a YEI project.
- help 1.1 million unemployed or inactive participants receive an offer of employment, continued education, apprenticeship or traineeship once the YEI support has ended;
- support 1.1 million unemployed or inactive participants to take part in education/training, gain a qualification, or find employment, including self-employment.

Despite the early eligibility of expenditure under the YEI (1 September 2013), most Member States started implementation in 2014 and 2015. Financial liquidity was identified as a problem and was addressed by an increase to 30% pre-financing from the YEI budget line in 2015.

First results of YEI implementation show that across countries the YEI is implemented using the range of measures supported under the YEI, yet there is a strong focus on the provision of traineeships and apprenticeships, as well as first job experience, which is implemented by 75% of MAs who have started implementation. Other frequently implemented measures include VET courses (69%), job and training mobility measures (56%) and start-up support for young entrepreneurs (56%). The vast majority of MAs implement three or more types of measures under the YEI, offering a menu of support for young people.

5. The European Agricultural Fund for Rural Development (EAFRD)

The EAFRD supports employment, competitiveness and economic development through a number of actions in the fields of lifelong learning, vocational training, skills development, social inclusion and job creation.

EAFRD-funded 2014-2020 rural development programmes are supporting knowledge transfer and information actions, demonstration activities, innovation projects, training of advisors, start up support and training of young farmers to achieve generational renewals and knowledge transfer and information actions benefitting migrants. The development of ICT infrastructure in rural areas will enhance digital learning, improving skills and promote jobs.

In addition to contributing to the skills agenda, the EAFRD targets in particular in 2014-2020 3.9 million training places and ensures that around 18 million citizens in rural areas would benefit from improved ICT infrastructure and services. Furthermore, 3.9% of total EAFRD expenditure is planned to be spent on knowledge transfer, advice and cooperation support.

6. The European Maritime and Fisheries Fund (EMFF)

The EMFF finances the Common Fisheries Policy and the Integrated Maritime Policy for 2014-2020 either directly or in the context of shared management with Member States²²⁷. The objective of the fund includes the support and financing of projects that create new jobs and improve quality of life along European coasts. In order to support job creation and social

²²⁷ EMFF Regulation No 1303/2013

dialogue, the EMFF may support activities such as professional training, lifelong learning, joint projects and the acquisition of new professional skills. Under the EMFF Work Programme 2016 (direct management), €3.4 million have been allocated to launch call for proposals on "Blue Careers in Europe". These grants aim at strengthening the collaboration between educational providers and business of the maritime and marine sectors at local and regional level in order to better reply to the labour market needs.

7. Erasmus+

Under Key Action 1, mobility is encouraged for apprentices, as well as teachers and trainers in VET. Up to 650.000 VET students are set to benefit from a learning mobility experience abroad in the period of 2014-2020.

In addition, Key Action 2 addresses exchange of good practice and innovation. The Strategic Partnership action aim to reinforce the cooperation between educational institutions, youth organisations, enterprises and other organisations to develop, transfer and implement innovative practices to improve quality and relevance in all fields of education, training and youth, as well as to make them more inclusive. The Sector Skills Alliances specifically aim to address skills gaps in the VET field by developing vocational skills in line with labour market needs through enhanced cooperation between education and employment. Previously Sector Skills Alliances (SSAs) addressed only curricula development but the new SSA instrument has now integrated the activity of the previous Sector Skills Councils (previously funded the EaSI programme) namely the identification of skills gaps and needs. Knowledge Alliances foster innovation in higher education by stimulating entrepreneurship, equipping students and higher education staff with entrepreneurial skills, and by facilitating the exchange, flow and co-creation of knowledge between higher education institutions and enterprises.

With regard to Key Action 3 to support policy reform, the Commission has launched two specific calls, one for national authorities in 2014, and one in 2015 to set up support structures for SMEs, and in particular those SMEs that have not trained apprentices before. Key Action 3 also supports Forward-looking Cooperation Projects and Policy Experimentations by Member States aiming to develop, test and implement innovative policies in all fields of Education, Training and Youth.

The Thematic Network on Work-based learning (NetWBL) involving 29 National Agencies is continuing to work on an online tool to promote work-based learning, including apprenticeships, at all levels.

Under Key Action 3 to support policy reform, the Commission has launched specific call encouraging policy makers to assessment the effectiveness of adult learning policies. The final outcome should be thorough evaluation of national policies and how they are implemented in systems; provide evidence on what works and shortcomings/gaps for further policy development.

8. Horizon2020

The 2014-2015 Horizon 2020 Work Programme - **Europe in a changing world: inclusive, innovative and reflective societies** funded research actions (EUR 2.5) in the field of Lifelong learning for young adults (YOUNG-3-2015 call). The aim was to review the situation of adult education in Europe and look for ways to take the most out of the numerous initiatives taken by a large number of often isolated actors. The policy and programme learning will address

young people, in particular those with low levels of basic and functional literacy, those not in education or training or those in situations of near social exclusion, who could be helped much more effectively if adequate adult education policies were designed. Similarly, the 2016-2017²²⁸ Work Programme will fund research in the field of education and skills in connection to young innovators (Co-Creation-1-2017, EUR 2.5 million). The goal is to improve learning and teaching in innovation-related skills for young boys and girls at the age of primary and secondary education through the design and piloting of new innovative ways of skills education, including technologies, processes and relations.

Horizon 2020 has an opportunity to encourage closer links between innovation and educational systems. For example, under the Horizon 2020 Societal Challenge 'Secure, Clean and Efficient Energy', topics concerning demonstration projects encourage opening up the project's test sites, pilot and demonstration facilities, or research infrastructures for practice oriented education, training or knowledge exchange. The objective is to build joint education and training programmes, projects and exchanges among research infrastructures/industrial installations and relevant education and training providers, ensuring quality education, providing a platform for practice oriented education on all levels (students, engineers, researchers, etc.) and speeding up the process of technology development, market uptake and replication, providing the respective technology field with additional attractiveness for creative and entrepreneurial scientists, researchers, engineers and other professionals.

H2020 is also funding projects applying the latest digital technologies to learning and skills development. Moreover, some PPPs and specific support projects are exploring which skills are necessary for new technologies and how to boost learning and training possibilities to acquire these skills²²⁹

9. European Fund for Strategic Investment (EFSI)

The EFSI Regulation was adopted in June 2015. The Commission, together with the EIB, has set guidelines to help implementing the new Fund. The Investment Plan for Europe, that will be supported by the EFSI, aims to mobilise at least €315 in additional investment over the next 3 years to finance infrastructure and innovation projects as well as SMEs. Investments in intangible assets as human capital, social innovation and administrative capacity are strategic investments for the growth of the economy as a whole. Mobilisation of private capital is a key feature of EFSI and currently represents about 80% of the total expected investment value.

An essential step to ensure jobs and growth creation is the EFSI's strategic orientation towards sector diversification. According to the ILO, if EUR 15 billion, i.e. less than 5% of the overall funds mobilised by EFSI supported the improvement of skills, were reallocated towards measures to support improvement in skills, this would increase the job creation impact to 2.1 million.

The EFSI also offers an opportunity to support promising projects for universities and education, including educational infrastructures, student loan schemes, and the financing of the "knowledge triangle": Innovation, Business and Higher education.

²²⁹ For instance, the European Data Science Academy (EDSA) designs curricula for data science training and education; <http://edsa-project.eu/>

Under the EFSI, universities can potentially benefit from the EU guarantee for revenue generating projects which they carry out or promote. For instance, technology transfer initiatives where the technology is conceived and developed in the university premises and subsequently passed on to a private operator could be eligible for EIB financing under the EFSI. In addition, projects for research labs that would be used by the private sector, and thus generating revenues, might be considered for EFSI supported financing. This of course, concerns only universities that can take debt.

10. Other EU funding opportunities for skills development

10.1. The EU Programme for Employment and Social Innovation (EaSI)

The objective of one of the three axes of the Commission-managed programme EaSI, namely the PROGRESS axis, is to provide support to the policy-making and implementation process through production of policy evidence, organisation of information sharing and mutual learning activities, funding social policy experimentation projects and providing capacity-building support to EU and national organisations.

In 2014²³⁰, in the area of employment of the PROGRESS axis, the largest investment through EaSI was put into improving anticipation of skills needs, analysis of skills supply and labour market needs. Under this thematic section, the largest amount of funding (EUR 7 073 611) in 2014 was committed to develop the Classification of European Skills, Competences, Qualifications and Occupations (ESCO). This was also the largest overall analytical output funded by EaSI in 2014. The ESCO classification was judged by stakeholders as the most helpful analytical output in the policy area of employment.²³¹

Box. Classification of European Skills, Competences, Qualifications and Occupations (ESCO)

ESCO is a multilingual classification of European Skills, Competences, Qualifications and Occupations and is part of the Europe 2020 strategy. ESCO was launched by the Commission in 2010. DG EMPL, DG EAC and Cedefop jointly coordinate its development. ESCO classification identifies and categorises skills, competences, qualifications and occupations relevant for the EU labour market as well as education and training. It systematically shows the relationships between the different concepts. ESCO, which has been developed in an open IT format, is available for use free of charge by everyone and can be accessed via the ESCO portal. The first version of ESCO was published on 23 October 2013. This release marked the beginning of the pilot and testing phase, including the ESCO mapping pilot. The classification will be completely revised by 2017. The final product will be launched as ESCO v1.

EaSI has also funded the Sector Skills Councils, is a sector-driven initiative, bringing together in a network the existing bodies producing labour market intelligence on employment and skills at sectoral level. The ultimate aim is to reduce the skills gap faced by companies and jobseekers and allow them to be in possession of more and better information on the evolution of their sector in terms of skills and employment. This means above all to collect and analyse the information – data- about the skills needs, gaps and mismatches in the sector.

²³⁰ <http://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=7824&type=2&furtherPubs=yes>

²³¹ As from 2015, the European Sectoral Skills Council instrument (under Progress 2007-13) has been integrated into the new Sector Skills Alliances instrument and is now funded under Erasmus +. In 2016 EaSI still finances the ESCO IT project and ESCO technical assistance.

10.2. The EIB's "Skills and Job's loan programme"

The European Investment Bank (EIB) offers the 'Skills and Jobs – Investing for Youth'²³² programme since 2013. It consists of two pillars:

1. **'Investing in Skills'** - aimed at investments into human capital (e.g. job-related skills and on-the-job-training, as well as vocational training, student loans and mobility programmes),
2. **'Jobs for Youth'** - provides access to finance linked to the employment of young people in SMEs and midcaps.

The Commission should also aim to ensure sufficient visibility to the initiative, potentially developing it as a joint COM/EIF programme. The Commission should also clarify with EIB to the extent they are obliged in their programme to target only young people or a broader target group for the programme could be envisaged.

The Jobs for Youth pillar of the EIB's programme has had two phases. In its first phase (from July 2013 and still running), the programme targeted loans to firms located in EU regions with youth unemployment rates of 25% or more. In the second phase (from January 2014 and still running), final Beneficiaries (FBs) of EIB funding can be located anywhere in the EU but FBs in regions with youth unemployment rates below 25% need to comply with stricter conditionality regarding youth employment or training, i.e.:

- have hired a number of young persons in the last six months or plan to do so in the coming six months, or
- offer vocational training or internships/training programmes for young people and demonstrate a recent track record of young people benefiting from these trainings, or
- have an active cooperation agreement with a technical school or university to employ young persons (e.g. during summer internships) and demonstrate a recent track record of young people benefiting from these cooperation agreements.

Between July 2013 and December 2015, over **EUR 26 bn** has been allocated to beneficiary SMEs, with **EUR 1.2 bn** earmarked for this second phase.

During the 2013-2014 period, the EIB signed almost **EUR 5 bn** via the 'Investing in Skills' pillar of the EIB programme. In 2015 a further **EUR 1.9 bn** in signatures was added.

The EIB is planning to extend the 'Jobs for Youth' part through a third 'sustainable recruitment' phase. It would consist of risk sharing with financial intermediaries on the loans to SMEs. The current proposal for the third phase is to make the conditionality stronger by requiring firms to recruit a minimum number of employees. This minimum would depend on the size of the company. The specific instrument under discussion with the EIB would combine a first loss piece structured finance instrument, which would allow relaxing the risk threshold of loans provided to SME's, thus increasing the number of eligible companies that could receive EIB provided loan and/or more attractive loan conditions. Those loans in addition could also be combined with certain performance/selection criteria in line with the Commission skills policy priorities.

²³² http://www.eib.org/projects/priorities/skills_and_jobs/index.htm

The EIB aims at blending its own resources with those of the EU and Member States. In its own proposal, the EIB estimates that with the EU contribution of EUR 100m in a first loss piece, it could create a leverage of 4-5 and then double this leverage at the level of intermediaries (banks). This would result into an estimated EUR 1bn of new loans (for each EUR 100m of first loss piece).

10.3. COSME

COSME²³³ is the EU programme for the Competitiveness of Enterprises and Small and Medium-sized Enterprises running from 2014 - 2020 with a planned budget of EUR 2.3 billion. In addition to Improving access to markets for SMEs (notably through the services provided by the Enterprise Europe Network, COSME supports SMEs in three areas which include investment in skills development:

- Facilitate access to finance in all phases of the SMEs lifecycle – creation, expansion, or business transfer. Thanks to EU support, businesses have easier access to guarantees, loans and equity capital.
- Improving framework conditions for the competitiveness and sustainability of Enterprises. Inter alia, COSME supports businesses to be competitive by encouraging them to adopt new business models and innovative practices. This complements actions in areas with high growth potential such as the Tourism sector. For example, capacity building schemes for destination managers and entrepreneurs in the area of accessible tourism were funded through a COSME call for proposals in 2014²³⁴
- promoting entrepreneurship (also through the Erasmus for Young entrepreneurs Scheme) education, mentoring, guidance and other support services. Actions support specific groups who may find it difficult to reach their full potential, such as young people, women and senior entrepreneurs. The programme also aims to help businesses access opportunities offered by digital technologies.

Moreover, the COSME programme also funds the Erasmus for Young Entrepreneurs²³⁵ programme. This cross-border exchange action gives new or aspiring entrepreneurs the chance to learn from experienced entrepreneurs running small businesses in another European country. The exchange of experience takes place during a stay with the host entrepreneur, which helps the new entrepreneur acquire the skills needed to run a small firm or to strengthen a new business. The host benefits from fresh perspectives on his/her business and gets the opportunities to cooperate with foreign partners or learn about new markets.

WORTH project

WORTH Pilot Project (2013-2015), launched in 2013 under the CIP Programme (Competitiveness and Innovation Framework Programme), tested a range of soft measures to support the integration of skills and competences in consumer goods sectors (e.g. textile, footwear, accessories, furniture, etc.). The measures tested were the following:

²³³ <http://ec.europa.eu/growth/smes/cosme/>

²³⁴ http://ec.europa.eu/growth/tools-databases/newsroom/cf/itemdetail.cfm?item_id=7700&lang=en&tpa_id=0&displayType=fo&fosubtype=p&nl_id=1039

²³⁵ <http://www.erasmus-entrepreneurs.eu/>

- exchange of skills and knowledge for companies (SMEs) - design, technical skills, crafts, and specialised skills
- upgrading and creating higher value-added design-based products and processes
- promotion of design, various crafts and professions.

The Worth Pilot Project turned out to be very successful and it was decided it will be continued as Worth Project under the COSME Programme.

One of the pillars of the COSME Programme is to encourage entrepreneurship. The entrepreneurship mind-set is relatively underdeveloped in Europe, lagging behind the United States for example: latest figures from the 2012 Eurobarometer on Entrepreneurship showed that in Europe 37% of citizens prefer to be self-employed, while in the USA this proportion is 51%. Against this background, the COSME Regulation specifies that an indicative 2.5% of the total budget has to be devoted to promote entrepreneurship and entrepreneurial culture.

To this purpose, COSME backs the implementation of the Entrepreneurship 2020 Action Plan through a wide range of activities. These include mobility exchanges, research, best practices diffusion and pilot projects in areas such as entrepreneurship education, mentoring or the development of guidance and support services for new and potential entrepreneurs, including young, women and senior entrepreneurs. A special focus is given to digital entrepreneurship and e-skills to help European businesses drive their digital transformation and reap the benefits of digital technologies. Also, the European mobility programme *Erasmus for Young Entrepreneurs* helps new entrepreneurs acquire and build entrepreneurial skills and knowledge and to further develop their business activity by learning from experienced entrepreneurs. This mobility programme started in 2009 as a pilot but it generated a lot of interest and positive feedback. Today, more than 1,700 exchanges have been supported. Under COSME, it should reach more than 2,000 exchanges per year. Next to this COSME is also supporting SMEs to "*go international*", by helping developing skills and gather know how that will make their international activities sustainable in time.

10.4. European Globalisation Adjustment Fund (EGF)

The EGF was established in 2006 to show solidarity with, and provide support to, workers who had lost their jobs in large scale redundancies resulting from changes in global trade patterns. The rules were amended in 2009 to respond more effectively to the global financial and economic crisis. The EGF co-finances projects including, inter alia, measures such as education, training and retraining. In the 2014-2020 period, a derogation clause allows Member States to include support to young people not in employment, education or training (NEET) in EGF measures in the affected regions. This derogation clause is running out at the end of 2017.

The implementation of EGF cases takes the form of coordinated packages of active labour policy measures aimed to support the final beneficiaries, the dismissed workers. Possible support measures include a range of services to dismissed workers, such as information, advice and guidance through individual case management; specific training measures; employment and recruitment incentives; including, to a certain extent, mobility and subsistence allowances (while undergoing training). The majority of outputs are used on individual case management and training and retraining.

The EGF supplements national labour market measures in situations where sudden collective redundancy processes - due to their large scale and their impact on the local economy - put the

public employment services under extraordinary pressure and can provide a more personalised and targeted approach to the most vulnerable redundant workers. These interventions help increase the re-employment rates achieved in the short and medium term.

10.5. The LIFE programme

Since 1992, LIFE has co-financed thousands of targeted innovative environmental and climate-related projects with an impact on jobs and skills. LIFE projects have created many "green jobs", with most of these meaning a topping up of skills or 'greening' existing knowledge. In addition, LIFE has contributed to greening the EU job market through the dissemination of green skills by means of training courses and practical guidelines.

10.6. The Health Programme

Health Programme 2014-2020 complements, adds value and supports the policies of Member States aimed at improving the health of Europe's citizens. A key objective is to contribute to innovative, efficient and sustainable health systems and to provide support to the sustainability of the EU health workforce by promoting effective forecasting and efficient recruitment and retention strategies. The Health Programme has co-financed the EU Joint Action on health workforce planning and forecasting, including innovative "horizon scanning" methodologies and co-funds OECD studies on skills mismatches and skills needs in the health sector.

ANNEXES

ANNEX I – TACKLING LOW SKILLS: THE SKILLS GUARANTEE

**ANNEX II – RESULTS OF THE PUBLIC CONSULTATION ON THE EU'S
MODERNISATION AGENDA FOR HIGHER EDUCATION**

**ANNEX III - ENHANCING THE TRANSPARENCY OF QUALIFICATIONS: THE
EUROPEAN QUALIFICATIONS FRAMEWORK (EQF)**



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PART 2/4

COMMISSION STAFF WORKING DOCUMENT

ANNEX I

Tackling low skills: The Skills Guarantee

Accompanying the document

Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of Regions

A NEW SKILLS AGENDA FOR EUROPE

Working together to strengthen human capital, employability and competitiveness

{COM(2016) 381 final}

Tackling low skills: the Skills Guarantee

Technical Annex I

Contents

1. Background and State of Play.....	6
1.1. Existing education and training provision targeting low skilled adults	6
1.2. Skills validation.....	8
1.3. Guidance.....	9
1.4. Outreach.....	10
2. Challenges and options considered	11
2.1. Limitations of current provision	11
2.2. Objectives	14
2.3. Correlation between skills and qualifications.....	15
2.4. EQF level 4 (or equivalent)	16
2.5. Options considered.....	19
3. The Proposed Skills Guarantee in Practice	22
3.1. The three steps of the proposed Skills Guarantee	22
3.1.1. Skills assessment.....	22
3.1.2. A tailored and flexible learning offer.....	24
3.1.2.1. Content of the offer	24
3.1.2.2. A tailored and flexible offer	26
3.1.2.3. Quality offer	27
3.1.3. Validation and recognition.....	28
3.2. Enablers.....	28
3.2.1. Coordination and partnerships.....	29
3.2.1.1. Coordination	29
3.2.1.2. Partnerships	30
3.2.2. Outreach, guidance and support measures	31
3.2.2.1. Outreach.....	31
3.2.2.2. Guidance.....	32
3.2.2.3. Financial support measures	33
3.2.2.4. Non-financial support measures.....	35
3.2.2.5. European Funds projects on upskilling adults	36
3.3. Target groups.....	37
3.3.1. Unemployed people	37
3.3.2. People in employment.....	39

- 3.3.3. Economically inactive people..... 40
- 3.3.4. Early School Leavers and NEETs 41
- 3.3.5. Migrants 41
- 3.4. Expected impact and costs – an investment approach..... 42
- 3.4.1. Potential costs of a Skills Guarantee..... 43
- 3.4.1.1. Defining the costs 43
- 3.4.1.2. Estimating costs..... 44
- 3.4.2. Potential Benefits 51

Executive Summary

64 million people between the age of 25 and 64 years have left education prematurely without acquiring a robust set of skills needed for life and work in today's and tomorrow's knowledge-intensive, technology-driven world. Because of this, they are at a much higher risk than others of unemployment, exclusion from the labour market and from participation in society, lower individual wage returns and health problems.

Good basis to build upon

Member States have an array of programmes and initiatives that target low-qualified or low-skilled people: programmes linked to formal initial education, dedicated basic skills programmes that provide literacy, numeracy and digital skills as single subjects, in combination or as part of other offers of life skills, and basic skills training embedded in vocational education and training (VET) programmes leading to a vocational qualification or as part of continuing vocational training offered by employers to their workforce. In many countries these programmes exist in parallel but with little or no flexibility for the learner to move between them.

A drop in the ocean

In EU28 in 2015, only 2.9 million low-qualified adults (4.3%) took part in education and training (in the previous 4 weeks); 0.6 million of them (1% of the total) took part in formal education, and 2.2 million of them (3.5% of the total) took part in non-formal education. 61.2 million low-qualified adults (95.7%) in need of upskilling did not take part in education and training. The situation could be improved by coordinating existing offers at national, regional and local levels, and matching them to defined groups who should then be enticed back into learning through targeted outreach campaigns and supported by strong guidance services and practical support. This needs the buy-in of all relevant stakeholders, who are essential to ensure a seamless pathway to success: outreach, assessment, tailored provision and validation of outcomes, as well as constant monitoring.

A Skills Guarantee

The aim of the Skills Guarantee is to improve people's life chances by giving low qualified adults access to flexible learning pathways tailored to their individual learning needs by means of a thorough skills assessment, guidance and support at every step on the way towards:

- acquiring a minimum level of literacy, numeracy and digital skills; and/or
- progress towards a qualification at EQF level 4 or equivalent, acquiring a wider set of skills.

To facilitate access to and progression in the upskilling endeavour, prior experience, and learning outcomes acquired through formal, non-formal and informal learning as part of the guarantee, would be validated, recognised and credited towards a qualification in the national framework.

The Guarantee would be delivered in three steps. As a first step, it will identify skills needs among low-qualified adults and help put them on track to a flexible upskilling pathway that builds on their existing skills. The second step will cover the design and delivery of an education and training offer tailored to the specific situation of each individual. The offer would relate to the provision of literacy, numeracy or digital skills and/or progression to a

qualification at EQF level 4. The third step will consist of validation and recognition of the skills acquired through the personalised upskilling pathway.

To make the Skills Guarantee a reality, some key enablers need to be in place. Research shows that many adults are not aware of the benefits of raising their skills levels or of opportunities for upskilling that do not require going back to a formal school setting. Carefully targeted outreach strategies are needed to encourage people to contact the relevant services. The design of such outreach measures needs to be based upon an adequate mapping of the many different sub-groups, each of which may need a slightly different approach. Guidance is another pre-requisite in providing advice and information throughout all stages of the upskilling pathway.

The diversity of the target group and the fragmentation and complexity of the policy interventions in this area often result in a lack of systematic approaches to upskilling the workforce and a lack of awareness of the socio-economic benefits of doing so. Therefore, coherent policy intervention is needed, based on effective coordination and partnerships across policy fields, notably education and training, employment and social policies, but also between different sets of actors, public authorities, social partners, education and training providers, intermediary and sectorial organisations, local and regional economic actors, employment, social and community services, libraries, civil society organisations etc. These can all play a key role in the delivery of the different steps of the proposed Guarantee, but also in ensuring outreach and guidance throughout the whole process.

Chapter 3 of this annex provides guidance on how the different elements of the Skills Guarantee could be put in place based on concrete examples of practices across the Member States.

Targeting the measures

To implement the Skills Guarantee, Member States would need to put in place policy provisions tailored to different sub-groups of people who have not yet attained a minimum level of basic skills, and who are not covered by the Youth Guarantee, addressing them on the basis of nationally defined priorities: jobless adults, employed adults, economically inactive adults, etc.

This technical annex provides the analytical basis for the proposal. It should be read in connection with the core text of the Staff Working Document¹, notably chapter 2, highlighting the challenges that this initiative aims to address. This annex shows firstly that in addressing the low skilled challenge, there is a good basis to build upon in Member States. Subsequently, it attempts to provide effective solutions by proposing a number of policy options for which the envisaged impacts are analysed. And last but not least, it explains how this policy initiative could work, based upon concrete examples from Member States and beyond.

¹ Commission Staff Working Document: Analytical underpinning for a New Skills Agenda for Europe, SWD(2016) 195 Part 1/4, accompanying the document Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, A new Skills Agenda for Europe: Working together to strengthen human capital, employability and competitiveness, (COM(2016) 381)

1. Background and State of Play

The Commission put forward a proposal recommending that Member States set up a Skills Guarantee allowing those who have left initial education or training without completing upper secondary education or equivalent (EQF 4), and who are not eligible for support under the Youth Guarantee, to access upskilling pathways which enable them to: acquire a minimum level of literacy, numeracy and digital skills, and/or progress towards a qualification at EQF level 4 or equivalent, acquiring a wider set of skills, building upon the Recommendation on key competences for lifelong learning.

The proposed Recommendation aims to reach a challenging and heterogeneous group of people who have fundamental weaknesses in their basic skills in order to support their sustainable employment or re-integration into the labour market.

The Recommendation sets out a coherent ‘pathway’ consisting of a linked series of targeted interventions that would reinforce and strengthen the personalised support targeted at low-qualified people and lead to the development of the necessary skills and qualifications. Actions already in place should be complemented to ensure that those who need support can access it and to reinforce the effectiveness of such support.

These measures are part of a more comprehensive set of policy actions, the Skills Agenda that tackle the broader skills challenges: raising the level of skills in the EU overall, making better use of existing skills and anticipating skills needs.

Support for adults with low basic skills or low level qualifications is now commonly integrated into Member States' policy agendas, often as a part of education and training policies. Other policy areas, including active labour market policies, also target provision at low-skilled people. These different policy measures are not always well-coordinated. Across Europe a wide range of education and training programmes (financed or co-financed by the state) is provided in a variety of ways. In few cases those programmes are accompanied by skills validation schemes (including skills assessment), guidance support and outreach campaigns.² This section presents existing support provided to low-skilled or low-qualified adults in Member States. It focuses on different elements that are part of the support given to low skilled adults, namely the actual education or training, but also the validation of competences acquired outside formal systems, guidance and outreach. This section shows that many good practices exist on which to build a coherent provision of support.

1.1. Existing education and training provision targeting low skilled adults³

Low-skilled or low-qualified adults can be the focus of dedicated programmes, which make explicit reference to improving their basic skills or they may be provided with programmes that contribute to the same objective without specifically mentioning basic skills. Moreover, basic skills can be delivered in a range of environments, from education and training institutions to workplace or community settings (see Figure 1).

² European Adult Education and Training in Europe: Widening Access to Learning Opportunities. Eurydice Report, Commission/EACEA/Eurydice, 2015, Luxembourg: Publications Office of the European Union.

³ Based largely on Adult Education and Training in Europe: Widening Access to Learning Opportunities. Eurydice Report, European Commission/EACEA/Eurydice, 2015, Luxembourg: Publications Office of the European Union.

Figure 1: Delivering basic skills in adult education and training⁴

	Basic skills addressed explicitly	Basic skills addressed implicitly
Education and training institutions	Programmes designated as 'literacy', 'basic skills', 'key competences', etc. delivered in education and training institutions	Programmes embedding basic skills in various ways delivered in education and training institutions (e.g. preparatory programmes for further studies that include the revision of different curricular areas) <i>Potentially any learning activity provided in education and training institutions</i>
Settings outside education and training institutions	Programmes designated as 'literacy', 'basic skills', 'key competences', etc. delivered e.g. in workplace or community settings	Programmes embedding basic skills in various ways delivered e.g. in workplace or community settings <i>Potentially any learning activity outside settings devised for education and training</i>

Source: Eurydice.

Explanatory notes

The figure has been inspired by a Cedefop model describing possible ways of integrating key competences in work-based learning (WBL) programmes (Cedefop 2013, p. 26). However, the main dimensions of the Cedefop model have been adjusted.

The borders between different categories are permeable, meaning that a programme can be situated between different categories or easily move from one category to another (e.g. a literacy programme delivered in school settings as well as in libraries or other community settings).

Source: European Adult Education and Training in Europe: Widening Access to Learning Opportunities. Eurydice Report, Commission/EACEA/Eurydice, 2015, Luxembourg: Publications Office of the European Union

Programmes for adult learners linked to initial education often target skills in different areas, including reading, writing, numeracy and ICT. Depending on the country, they may also include vocational elements. In most countries these programmes include a number of curriculum areas taken by all students. However, some countries organise them on a subject basis, allowing learners to take shorter courses in distinct subject areas (e.g. ICT, mathematics, languages, etc.). Overall, the extent of provision seems to follow the context of individual countries. Outside the programmes linked to the system of initial education, some countries have developed dedicated basic skills programmes or programme frameworks. These represent a very diverse field, ranging from programmes with clearly defined providers, curricula and standards, to programmes or programme frameworks where most of these aspects are defined locally. Dedicated basic skills programmes are not necessarily non-formal in character; they are sometimes recognised by countries' qualification frameworks and structures.

Acting as a bridge to programmes for gaining a qualification, preparatory programmes are established in a series of countries (Belgium, Sweden, Denmark, Spain, Austria and Germany). Such programmes may be targeting unemployed low-qualified people with a view to assist individuals in gaining the skills needed to follow a programme leading to a qualification.

Beyond basic skills programmes, obtaining an upper secondary qualification later in life is possible in all European countries, but the way the provision is organised may differ

⁴ European Adult Education and Training in Europe: Widening Access to Learning Opportunities. Eurydice Report, Commission/EACEA/Eurydice, 2015, Luxembourg: Publications Office of the European Union

significantly. Some Member States have developed dedicated programme frameworks referring specifically to 'adult upper secondary education', in other cases provision for adults is delivered within the mainstream upper secondary framework, but in most countries there is a combination of the two models. Even when the two options co-exist, one of them may be more common. Some countries (France, Luxembourg and Hungary) have also developed specific programmes within upper secondary education for early school leavers setting an upper age limit.

There are also examples of large-scale national initiatives the aim of which was to support the development of basic skills and to increase the level of qualification among low-skilled and low-qualified adults.

For example, in **Sweden**, the Adult Education Initiative (1997-2002), which targeted adults without an upper secondary qualification who were eligible for unemployment insurance, offered them a year of full-time studies at compulsory or upper secondary levels. Provision included orientation courses, guidance, counselling and validation of prior knowledge. It operated in all municipalities within the existing framework for municipal adult education. In **Portugal**, the New Opportunities Initiative (2005-2010) targeted adults who had not completed upper secondary education; it focussed primarily on unemployed or economically inactive people, but courses were also available for employed people. It aimed to increase levels of basic skills through a skills diagnosis, the recognition and validation of competences and the provision of education and training equivalent to upper secondary education. By December 2010, over 360,000 people had obtained the recognition of their skills and 59,000 had completed courses. In the **UK**, the Skills for Life initiative (2004-2007) offered training in basic skills (literacy, numeracy and English as a second language) to unemployed adults, low-skilled employees, and other groups at risk of exclusion. The initiative engaged 5.7 million learners on 12 million courses.⁵

Beyond EU, Norway has in place for a number of years a programme Basic Skills Competences in Working Life aiming to give adults the opportunity to acquire the basic skills they need to keep up with the demands and changes in modern working life and civil society. Funding and participation have increased every year since the programme was established in 2006, the number of participants who have received training exceeding 30 000. Norway is currently developing a national skills strategy for joint efforts and improved skills systems effectiveness. One of the four priority areas to be pursued with the Strategy is strengthening the skills of adults with poor skills.

In United States, a recent initiative, following the release of the PIAAC results, Upskill America is focused on training and education strategies to help front-line workers realize their full potential and advance into higher paying jobs, without having to leave their jobs and go back to school full-time.

1.2. Skills validation⁶

The European Inventory on Validation of non-formal and informal learning (NFIL) has monitored development in this field since 2005. The latest update of the European Inventory (2014) shows significant progress in certain areas such as creation of national validation

⁵ Advice about the financial implications for initiatives to upskill low-skilled adults (VT/2016/007)

⁶ Based on European Inventory on Validation of Non-formal and Informal Learning and its thematic reports, European Commission, Cedefop, ICF International, <http://www.cedefop.europa.eu/en/events-and-projects/projects/validation-non-formal-and-informal-learning/european-inventory>.

strategies, legal frameworks, links to credit systems and, to a lesser degree, increased take-up since the previous edition in 2010. The allocation of responsibilities in relation to validation is clear in most countries, and stakeholder involvement has increased over the past years, partly as a result of the work on national strategies and policies. Implementation has been reinforced by the 2012 Council Recommendation on validation of NFIL⁷, which Member States have agreed to implement by 2018.

One essential element of validation is the identification of one person's existing skills through skills assessment or skills audits. The European Inventory on validation of NFIL (2014) shows that Member States are making progress towards the establishment of validation strategies and the provision of skills audits or skills assessments. More work is needed to make these important elements of provision available to low-skilled people.

In some countries the concept of a skills audit is well developed and established (e.g. France, Belgium –Wallonia, Luxembourg); in others even if they are not defined as such, they are part of the validation process. In general, skills audits are part of active labour market policies and are mainly regulated by public administration and specifically by public employment services (PES). This also implies that a skills audit is primarily directed at those who are unemployed, jobseekers and employees. There are few initiatives that target all groups, including for example, young people or specific disadvantaged groups (low-qualified people, immigrants, women, etc.). However, in parallel with the skills audits undertaken by public authorities, private sector employers are also involved in competence assessment mostly as part of their recruitment process or for evaluating employees' performance.

1.3. Guidance⁸

The Council Resolution on better integrating lifelong guidance into lifelong learning strategies of 21 November 2008 invites Member States to strengthen the role of lifelong guidance within national lifelong learning strategies, by facilitating citizens' access to information about training opportunities and their links to the professions, and about the skills needs anticipated, enabling people to benefit from support in obtaining validation and recognition on the labour market of their formal, non-formal and informal learning outcomes. A review of progress in 2011⁹ reported increasing cooperation among the key players aims at creating better synergies between the different sectors (education, training, employment), levels (European, national, regional, local) and guidance service providers (educational institutions, public employment services, guidance centres, etc.), however the movement from reactive sector-based policy-making towards proactive cross-sectoral and multi-stakeholder guidance policy collaboration required to be further strengthened.

In most Member States, the main publicly subsidised career guidance services open to adults are located within public employment services. They may include individual assistance (e.g. vocational guidance and counselling programmes), group activities (e.g. job clubs and workshops) and self-help provision. While in most countries, PES are theoretically open to all adults, in reality, the provision they ensure – including guidance services – is often restricted to unemployed jobseekers. This applies, in particular, to individual face-to-face services. It follows that education and training guidance provided in the context of PES, and subsequent

⁷ OJ C 398, 22.12.2012. [http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32012H1222\(01\)&from=EN](http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32012H1222(01)&from=EN).

⁸ Based on Adult Education and Training in Europe: Widening Access to Learning Opportunities. Eurydice Report, European Commission/EACEA/Eurydice, 2015, Luxembourg: Publications Office of the European Union.

⁹ Lifelong guidance across Europe: reviewing policy progress and future prospects, Cedefop, 2011, Luxembourg: Publications Office of the European Union

provision of education and training programmes, target mainly the labour market integration or re-integration of unemployed individuals.

Moreover, PES may also provide reinforced guidance support to specific categories of unemployed persons, including the long-term unemployed, women returnees, people with disabilities, ethnic minorities, young people with no formal qualifications and work experience, etc. Despite the fact that PES concentrate on unemployed jobseekers, they often provide tools and support that can be used by a wider public. This has been facilitated by a shift to on-line guidance services and the development of self-guidance and self-assessment tools. A few countries have made significant investments in developing, adapting or adopting ICT and software that facilitate access to career, labour market and further education and training information and guidance in self-help mode.

1.4. Outreach¹⁰

Virtually all Member States report (2009-2014) the existence of major publicly subsidised activities to raise awareness of adult education and training. Awareness-raising and outreach activities take a variety of forms and use different approaches. They range from general national campaigns to promote adult learning or adult/lifelong learning days or weeks, to specific initiatives or campaigns that have a targeted character, concentrating on specific skills, groups of the population or stakeholders. Several countries have put in place major one-off events or campaigns that took place during a limited period of time and used e.g. TV, radio, press and banners as the main means of communication. They can include the distribution of postcards, the introduction of a free number to call to get advice and information about courses on offer, and the launch of a website providing information through text, pictures and audio messages or constituting a central place for everyone looking for information or help on upskilling. Free phone lines or websites used for outreach and information purposes generally have a longer life, which outlives any such campaigns (e.g. Austria, Germany, Luxembourg and Romania).

¹⁰ idem

2. Challenges and options considered

The challenges identified in the Commission Staff Working Document related to the low skilled population can only be overcome through the upskilling of those individuals which, because of their low skills levels, are at risk of social exclusion, unemployment and poverty. Despite the existence of a wide range of programmes aimed at raising the skills or qualifications levels of adult population, the existing provision has certain limitations as detailed in this section.

2.1. Limitations of current provision¹¹

Despite concrete activities to engage low-skilled adults in further learning which, in many cases, show results and provide inspiration for policy development in the field, 3.6 % of adults in the EU (some 11 million) completed an upper secondary programme later in life, i.e. aged 25 or above, with substantial differences between countries.

Table 1: Adults (25-64) who acquired their medium-level qualification, usually upper secondary education, during adulthood (aged 25 or above) as a percentage of all adults (25-64), 2013

%	EU-28	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	HR	IT	CY	LV	LT	LU
ISCED 3	3.6	1.2	0.6	1.3	9.3	4.5	1.6	0.3	0.3	1.8	3.2	0.8	1.3	0.6	2.1	1.0	2.9
ISCED 4	0.7	0.2	0.1	0.5	0.0	2.0	0.7	3.8	0.7	0.0	0.1	:	0.4	0.2	1.4	1.6	1.2
	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK		IS	LI	NO	TR
ISCED 3	3.1	0.5	9.3	3.1	2.6	5.4	0.6	4.7	1.1	12.1	2.8	8.2		11.4	:	:	0.9
ISCED 4	0.9	0.6	0.3	1.2	0.6	0.2	0.8	:	:	0.9	3.5	0.1		4.2	:	:	:

Source: Eurostat (EU LFS). Data extracted and calculated by Eurostat.

Explanatory notes

The figure refers to adults who gained their medium-level qualification (ISCED 3 or ISCED 4) during adulthood and currently hold it as their highest level of qualification. The figure does not capture situations where people gain more than one qualification during adulthood, in particular, in cases where adults move from a medium-level qualification to a higher education qualification (e.g. finishing upper secondary education at the age of 27 and higher education at the age of 32). This is because the EU LFS only enquires about the highest qualification and the age at which it was awarded.

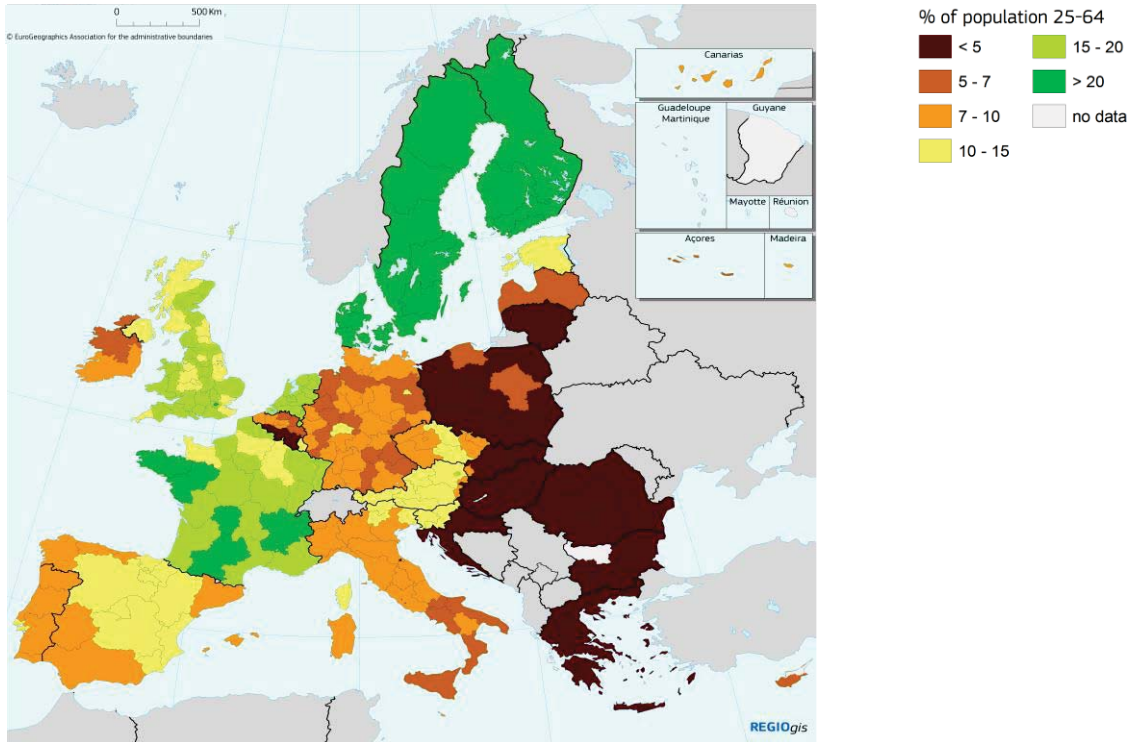
Source: Adult Education and Training in Europe: Widening Access to Learning Opportunities. Eurydice Report, European Commission/EACEA/Eurydice, 2015, Luxembourg: Publications Office of the European Union

In around half of all European countries, less than 2% of adults gained an upper secondary qualification during adulthood, whereas in a few countries (Finland, Iceland, Denmark, the Netherlands and the United Kingdom) a significant share of the adult population gained such a qualification aged 25 or above.

A similar uneven situation is observed when looking at progress towards the 15% EU benchmark on adults' participation in education and training (in the 4 weeks prior the survey). On average, only 10.7% of adult Europeans participated in any education and training in 2014, again with significant variation between countries.

¹¹ Based on Adult Education and Training in Europe: Widening Access to Learning Opportunities. Eurydice Report, European Commission/EACEA/Eurydice, 2015, Luxembourg: Publications Office of the European Union.

Map 1: Adults (25-64) participation in education and training (4 weeks prior survey), 2014

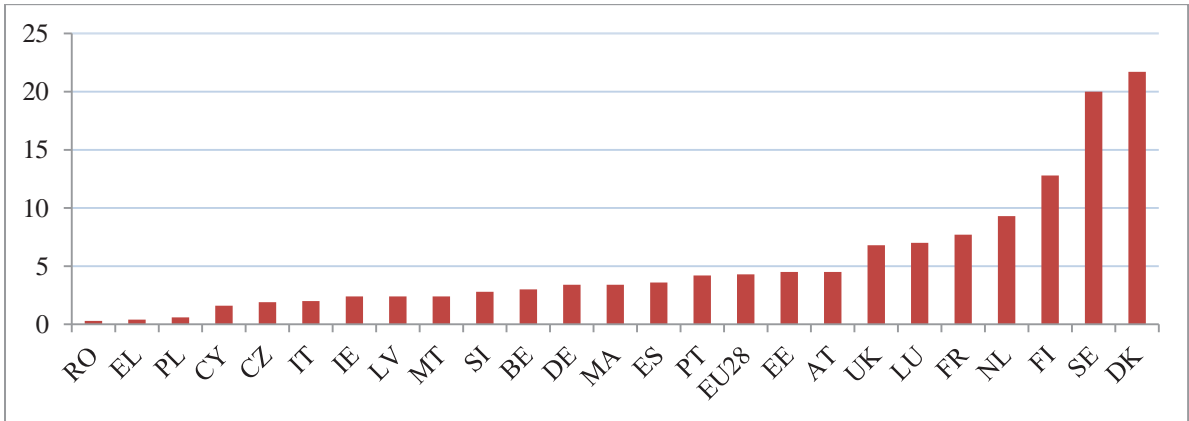


Source: Eurostat

Map 1 also clearly underlines regional disparities, even within countries.

Analysis of the participation of low-qualified adults in education and training, as presented in Figure 2, shows even lower participation rates, varying from below 1% in Romania, Greece and Poland to 13% in Finland, 20% in Sweden and 22% in Denmark. On average in the EU only 4.3% of low-qualified adults, that is, the group most in need of learning, participate in education and training.

Figure 2 - Low-qualified adults (25-64) participation in education and training (4 weeks prior survey), 2015



Explanatory note: For BG, HR, LT, SK there is no available information for 2015
 Source: Eurostat

In the Adult Education Survey 2011, up to half of adults surveyed indicated that they were not interested and /or willing to undertake learning activities. The first Unesco Global Report on Adult Learning (GRALE 1)¹² finds relevance to be the most important dimension of quality adult learning; provision must represent an effective route to, and support for, personal and social change and must engender and sustain motivation to participate and support persistence in learning to achieve individual goals. This analysis of policies substantiates the view of andragogy experts that adults will learn what is to them relevant and practical (“adults find motivation to learn within the demands and desires of their lives, in providing for themselves and their families, and in satisfying personal dreams and ambitions”).¹³ In addition to the relevant learning offer, a wide range of outreach activities is essential to reach individuals with distinct profiles, close to where they live and work.

Based on available research¹⁴, there are several aspects that could be considered when reviewing possible reasons for low participation rates of adults in education and training, as detailed further below.

Although all Member States incorporated measures for low-skilled or low-qualified adults into wider strategies on education or training the policy documents rarely refer to measurable objectives or targets to be reached. Those countries that have comprehensive lifelong learning strategies in place (e.g. Denmark, Sweden, Finland and the Netherlands) have a lower instance of low skills in the population and have higher overall rates of participation in lifelong learning.

Most European countries offer at least some modular programmes for adults with low level or no qualifications and many countries have recently made progress in this field. However, still in many cases, these programmes do not reach low-qualified adults and do not meet their needs. For example, while credit-based programmes are common in the field of higher education, only around half of all European countries offer credit-based programmes at lower levels of education. Overall, the lower the educational level, the fewer credit-based qualifications exist. When it comes to basic skills programmes, almost none have credits attached, which means that people who are the most educationally disadvantaged benefit the least from this facility. Moreover, only few countries allow a certain degree of flexibility for candidates who want to access a particular level of formal education but who do not hold the normal entry qualifications such as allowing access to upper secondary education on the basis of learning outcomes achieved without having completed lower secondary education.

Although all Member States are progressing in the implementation of procedures for the validation of NFIL, challenges persist, such as trust, awareness and recognition of validation outcomes; access; financial sustainability and data collection, which still need to be addressed. Moreover, only a minority of countries prioritise disadvantaged groups (including

¹² Prepared for the CONFITEA VI Conference (December 2009) <http://www.unesco.org/en/confinteavi/grale/>

¹³ Fisher, C., (2006). Asynchronous learning and adult motivation: catching fog in a gauze bag. Retrieved from Learning Solutions Magazine website: <http://www.learningsolutionsmag.com/articles/233/asynchronous-learning-and-adult-motivation-catching-fog-in-a-gauze-bag>.

¹⁴ Adult Education and Training in Europe: Widening Access to Learning Opportunities. Eurydice Report, European Commission/EACEA/Eurydice, 2015, Luxembourg: Publications Office of the European Union; European inventory on validation of non-formal and informal learning 2014, Final synthesis, European Commission/ Cedefop/ICF International, 2014, report <http://libserver.Cedefop.europa.eu/vetelib/2014/87244.pdf>; Report of the ET2020 Working Group on Adult Learning 2014 – 2015; Thematic Review Synthesis: Upskilling Unemployed Adults (Aged 25 To 64). The organisation, profiling and targeting of training provision. <http://ec.europa.eu/social/main.jsp?langId=en&catId=89&newsId=2265&furtherNews=yes>; Cedefop: 2011, Lifelong guidance across Europe: reviewing policy progress and future prospects, Luxembourg: Publications Office of the European Union.

low-qualified adults), or provide and adjust skills assessments for different target groups, and fewer than ten of the 2014 country reports indicate that low-qualified adults are among the main user groups of validation procedures.

Publicly subsidised career guidance services generally focus on helping unemployed jobseekers get back into work. Consequently, evaluations tend to assess their impact on the unemployment figures rather than on the numbers participating in education and training. Beyond the services provided by PES, publicly subsidised guidance open to adults is limited in most countries and scarce.

Member States implement a range of outreach activities, from general national campaigns to promote adult learning, to specific initiatives designed to reach adults with low basic skills or low-qualified people. However, most countries do not evaluate the impact of outreach activities on the participation of specific groups (in particular low-qualified people) in education and training, whereas further research in this area could provide Member States with better understanding of available methods and approaches to evaluating outreach work.

Taking into account the situation of low-skilled and low-qualified adults, the degree to which Member States provide learning opportunities to support this group and their effects, a need has been identified for concerted action at European level to increase overall levels of basic skills and qualifications in Europe.

2.2. Objectives

Despite the size and persistence of the low skills challenge among adults in the EU, policy makers have paid much less attention to low-skilled adults than to other groups at risk of social and labour market exclusion (for example, young people). In view of future labour market needs and skills forecasts, as well as demographic trends, the proposed Skills Guarantee responds to an urgent need for policy makers to design and implement policies tailored to this particular group. This initiative will help to integrate untapped human capital to the labour market especially, to increase the employment rate, increase the productivity of the workforce and retain keep older generations in work for longer.

By raising the skills and educational attainment level of low qualified adults, the initiative aims to improve people's life chances and employability, leading therefore to a more resilient human capital base and higher and more inclusive growth across the EU.

The Skills Guarantee being proposed by the Commission will support adults who have left school without completing upper secondary education (or an equivalent at EQF level 4), and who are not eligible for support under the Youth Guarantee, to access similar upskilling pathways.

These pathways would take into account the different skills levels and training needs within the very wide group of low-qualified individuals. They would lead to training in literacy, numeracy or digital skills for those who need them. For those who are ready to engage in further learning, the pathways could lead further: to a qualification at EQF level 4 or equivalent certifying the acquisition of a broader set of key competences.

The Guarantee will contribute to helping people with the weakest skills and educational background to develop the skills they need to access and progress in quality work and actively take part in society, as well as to boost employability, competitiveness and support fair and balanced growth, reaping the full potential of digital and technological advancements. By addressing the needs of this wide target group, the proposed Skills Guarantee would support

policies aimed at overcoming social inequalities faced by people with low skills and give them a fair chance to improve their lives and avoid poverty and social exclusion.

2.3. Correlation between skills and qualifications

There are different ways to measure human capital. The most commonly used is to measure educational attainment (i.e. educational qualifications). Data on educational attainment are available from a large number of social surveys for a large number of countries globally. Qualifications are an important indication of skills in the labour market and they provide a wide range of information about the knowledge, skills, competences or even personal attributes of the individuals to whom they have been awarded. They can also provide information on the specificity or generality of skills and knowledge, e.g. by specifying the vocational or general education nature of qualifications. Thus they can be regarded as relatively comprehensive measures of human capital¹⁵. Nevertheless, educational attainment also has a number of limitations as a measure of human capital, in as far it may not necessarily give a complete picture of the skills proficiency of a person¹⁶.

Another possible measure of human capital is measuring the skills available in the population; skills can be defined as an “ability to apply knowledge and use know-how to complete tasks and solve problems”¹⁷. The OECD Survey of Adult Skills (PIAAC) is a direct assessment of the skills of a representative sample of adults aged 16 to 65 years. PIAAC is the only international survey which tests adults’ skills and allows cross-country comparison. Currently, data are only available for 17 EU Member States; data for three more countries will be released in June 2016. However, due to the complexity and cost of carrying out the individual assessments, such surveys cannot be carried out frequently and the next PIAAC survey will take place provisionally in 2022.

On the other hand, the Eurostat Labour Force Survey (LSF) provides annual data on educational attainment and related issues, such as socio-economic background and employment status, for all Member States. Because of its frequency and wide coverage, LSF could represent an important data source for the proposed Skills Guarantee.

Map 2 below shows the uneven distribution of the problem across the Union, with extremely high levels of low-qualified individuals in some countries (age group 25-65), while in others the level of low educational attainment among the adult population (dark green shading =<13%) is almost equal to the EU average for 18-24 year olds (11%, Eurostat – LSF 2015). Regional differences within countries are also striking.

This large section of the European population is very heterogeneous comprising employed, unemployed and economically inactive people, many of whom may have a migrant background. Some may face multiple disadvantages or problems including low incomes, disabilities, ill-health or addictions; many are at risk of poverty or homelessness and there is a high percentage of low-skilled people within particular groups, e.g. in prisons or among the Roma population. People who live in disadvantaged communities with particular access difficulties, e.g. rural areas (which represent half of the EU territory) face specific challenges

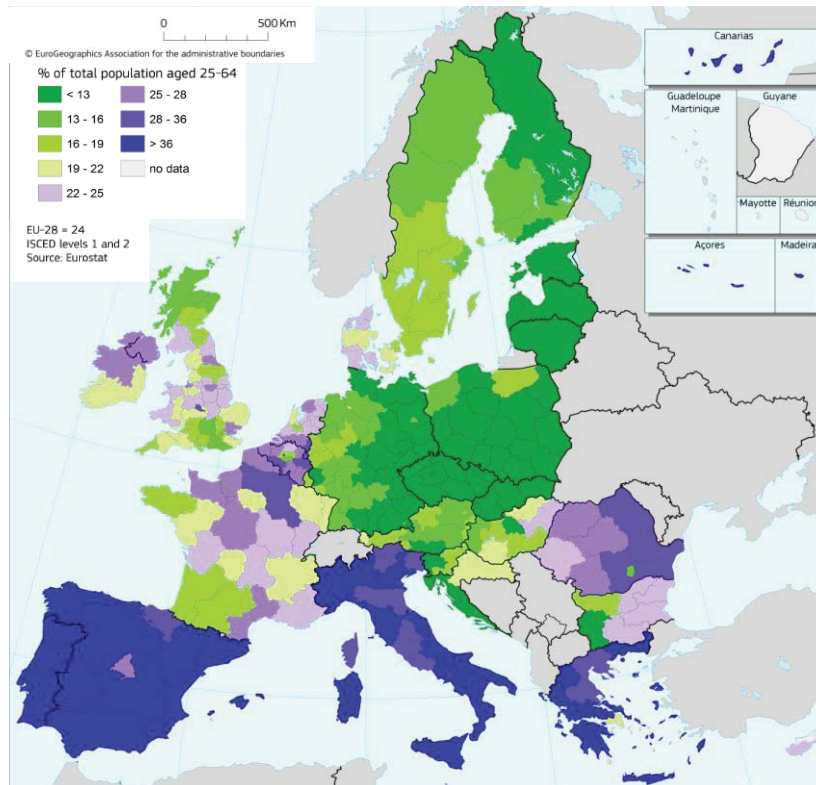
¹⁵ OECD Skills Outlook 2013: First Results from the Survey of Adult Learning, OECD Publishing, 2013. DOI: <http://dx.doi.org/10.1787/9789264204256-en>

¹⁶ idem

¹⁷ Terminology of European education and training policy, Second Edition, A selection of 130 key terms, Cedefop, Luxembourg: Publications office of the European Union, 2014.

in accessing learning opportunities. Their learning needs should therefore not be seen in isolation, but rather as part of a more holistic approach to improving their situation in life.

Map 2: Population aged 25-65 with low educational attainment level, 2014



Source: Eurostat, LSF data 2014

It is acknowledged that there is not a precise match between the group of people with low levels of skills and the group of people without an upper secondary qualification, even though the PIAAC study revealed a correlation between the two.

In the light of the data availability, for the purposes of the proposed Skills Guarantee, it is proposed that data about levels of qualification (educational attainment) be used as the reference data, as a proxy for data about skills. These data are used both to define the proposed target group and to define the objective of upskilling.

2.4. EQF level 4 (or equivalent)

The European Qualifications Framework (EQF) provides a common reference point allowing EU Member States and their educational and training institutions, employers and individuals to compare and better understand the level and orientation of qualifications across the EU's diverse education and training systems.

The EQF helps to compare national qualifications systems and enable communication among them. The core of the EQF consists of eight reference levels describing what a learner knows, understands and is able to do. For example, level 1 (basic general knowledge), would apply to someone with little training or education, while level 8 (most advanced knowledge) would apply to someone with a Doctorate-level degree. Each of the 8 levels is defined by a set of

descriptors indicating the learning outcomes relevant to qualifications at that level in any system of qualifications. The main reference level descriptors are: skills (the ability to apply knowledge to complete tasks and solve problems), competences (the ability to use knowledge or skills in work or study situations), and knowledge. The EQF aims to build bridges between formal and informal and non-formal learning; it provides that each of its levels of qualification can be attained by way of a variety of educational and careers paths.

Most of the learning undertaken by the individual from the time he or she leaves formal education is non-formal or informal and often has a vocational or labour market orientation related to work and career. The EQF learning outcomes-based approach enables the validation of skills acquired through non-formal and informal learning as part of the progress towards attaining a qualification. Therefore, the EQF framework is wide-encompassing and includes qualifications based on learning acquired through general or vocational formal routes, and facilitates the acquisition of qualifications based on learning in non-formal or informal settings¹⁸.

EQF 4 is the level at which most countries¹⁹ place their upper secondary school level qualifications and equivalents that give the learner access to further education at tertiary level and improved access to the labour market (see Figure 4) and progression to further education and training. The EQF 4 descriptor is as follows:

Knowledge	Skills	Competence
factual and theoretical knowledge in broad contexts within a field of work or study	a range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study	exercise self-management within the guidelines of work or study contexts that are usually predictable, but are subject to change supervise the routine work of others, taking some responsibility for the evaluation and improvement of work or study activities

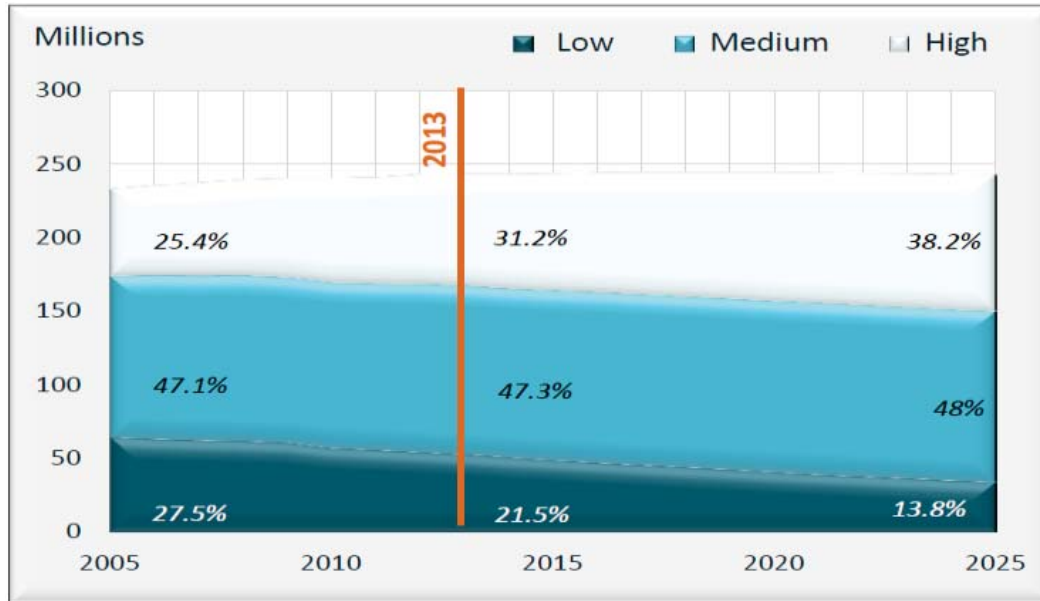
EQF levels 4 and 5 (equivalent to ISCED levels 3-4 which are used for statistical purposes) are medium level qualifications that mirror the qualification level required by over 47% of the EU workforce²⁰ in 2015. Labour market demand for qualifications below this level is dramatically decreasing as illustrated in the following figure. Furthermore, employment rates for people without an upper secondary education are substantially lower than for people with medium or high educational attainment (Figure 3).

¹⁸ EQF is used in preference to the Unesco International Standard Classification of Education (ISCED), which was designed to serve ‘as an instrument suitable for assembling, compiling and presenting statistics of education both within individual countries and internationally’, and revised in 1997 to increase the international comparability of education statistics

¹⁹ Apart from PT which has referenced upper secondary education at EQF 3. CZ, FI, EL, RO, SK are in the process of referencing qualifications to the EQF. DE did not include general upper secondary education in their initial referencing to EQF in 2012; a decision to reference the ‘Abitur’ to EQF 4 has now been reached. In France, the NQF only covers vocational qualifications, so general education has so far been omitted from EQF referencing. A similar situation exists in the UK. EQF 3 has limited use in most Member States, and almost all the programmes at this level are vocational certificates. Sweden has no qualifications at level 3.

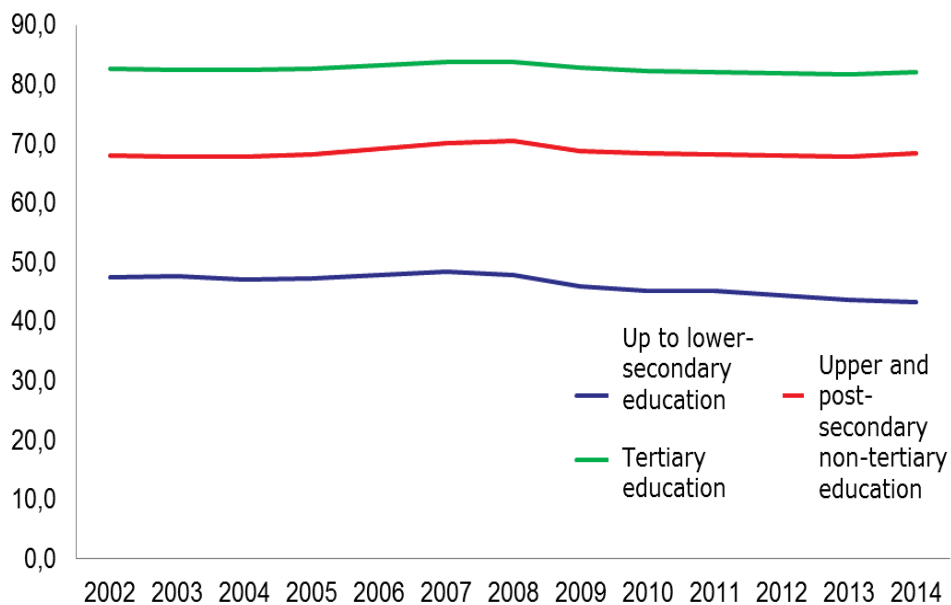
²⁰ Skills, qualifications and jobs in the EU: the making of a perfect match? Evidence from Cedefop’s European skills and jobs survey, Cedefop, 2015, Luxembourg: Publications Office of the European Union.

Figure 3: Labour force trends by qualification, 2005-25



Source: Cedefop (2015). Briefing Note: Europe’s Uneven Return to Job Growth
www.cedefop.europa.eu/files/9098_en.pdf

Figure 4: Employment rates by educational attainment (EU- 28)



Source: Eurostat

The 2015 Joint Report of the Council and the Commission on the implementation of the ET2020 strategic framework sets as a priority for action the provision of sufficient second-chance opportunities leading to a recognised EQF qualification for those without EQF level 4 qualifications.

Taking into account all the above, it is proposed that the Skills Guarantee is made available to those without an upper secondary education allowing them to improve literacy, numeracy or digital skills and/or to progress towards a qualification at EQF level 4 or equivalent.

2.5. Options considered

In investigating ways to improve the situation of low-qualified adults and possible support to Member States in organising provision for their upskilling, the following three main options were considered.

A first baseline scenario was based on the assumption that no new EU activities or measures would be developed; the existing instruments would continue as they are, such as the European Agenda for Adult Learning and the existing ET2020 benchmark that measures the degree of adult participation in learning, as well as reforms pursued by Member States in the context of the European Semester. This benchmark indicates stagnation in 2014-15 and shows very weak participation of low qualified people.

A second option would involve further strengthening the existing EU instruments concerning low-skilled adults, including by the adoption of a new EU benchmark that would measure progress on raising levels of adult educational attainment and stronger focus on this challenge in the context of the EU semester, the ET 2020 cooperation process and in the orientation of the available EU funding.

A third option analysed focused on developing a specific targeted approach for upskilling adults without an upper secondary education, through the adoption of a new proposal for a Council Recommendation establishing a Skills Guarantee. The proposal would recommend Member States to enable adults who have left initial education or training without completing upper secondary education or equivalent (EQF 4) and who are not subject to the Youth Guarantee to access upskilling pathways which enable them to acquire a minimum level of literacy, numeracy and digital skills; those who have attained proficiency could then progress to attain a wider set of skills, up to and including a qualification at EQF level.

The social, economic and other impacts of the three options considered have been examined using all available data. The results of this analysis are briefly described below.

The assessment revealed that, under the Baseline scenario – keeping the status quo - the current situation (as outlined in section 2) could be expected to persist, leading to a deterioration in the social and economic circumstances of low-skilled or low-qualified people, taking into account the demographic trends, technological change and the trend towards higher skills demands on the labour market, which would squeeze this group out of jobs and do nothing to improve their social inclusion and personal development. Thus, Member States' uneven performance in basic and digital skills, in particular the large gaps in basic skills proficiency between countries but also within countries, would continue to be a problem. Investment in upskilling programmes would continue as at present: patchy and of variable relevance to the very heterogeneous needs of low-skilled people; so it would be unlikely to deliver the required quality of support and training and its impact would be limited. Therefore, this option was deemed unlikely to address the key challenges in a sufficiently targeted manner and to trigger the systemic changes that are needed for addressing the problem.

Under the second scenario, the adopting of a new benchmark measuring progress over time in the level of adults' educational attainment at EQF level 4, would have the advantage of

focusing policy attention at European level on the challenges posed by high share of low-qualified adults in Europe. However, it may not necessarily lead to high quality outcomes, as in the absence of a set of common principles to be followed to reach this benchmark. Only weak progress has been made towards achieving the current ET 2020 benchmark on adult participation in learning. This modest benchmark aims, by 2020, for 15% of the adult population (25-64 years) to have taken part in some form of education or training during the four week preceding the survey. The EU average stood at 10.7% in 2014, with progress unevenly distributed across countries: only six Member States have reached the benchmark. While the trend in most countries shows an increase over the last decade, the average EU increase in this period is only 1.6% and the reverse is true in Belgium, Cyprus, Hungary, Latvia, Lithuania, Poland, Slovakia, Slovenia and the United Kingdom.²¹ The situation is particularly disappointing in relation to people with low levels of educational attainment.

Furthermore, this option would not necessarily address the challenges faced by people with very low levels of basic skills who would need to acquire as a first step a minimum level of proficiency in literacy, numeracy and digital skills before considering pursuing further their learning towards gaining a qualification. This being the case, it was therefore considered unlikely that a new – and more demanding- benchmark would have greater impact.

Under the third option, a specific policy instrument establishing a Skills Guarantee would be proposed by the Commission building on the good practice examples across the Member States and defining a coherent approach for targeting low skilled adults. The basic idea of this option was to ensure that low-qualified people receive a real opportunity to raise their literacy, numeracy and digital skills or progress towards an upper secondary qualification; In order to tackle obstacles to participation, the proposal would define a set of factors that need to be in place to allow increased participation into education and training. Thus, the training provision should be tailored to their individual learning needs – which means that their current skills levels would need to be assessed; it should make the most of the skills they already have acquired – which means that their existing skills should be validated and certified; and it should take account of the very varied needs for information, support and accompaniment amongst this target group – which means that outreach and guidance should be integral parts of the provision; finally, it should allow the learners who have improved their basic skills to go further and acquire a qualification recognised on the labour market and in the education sector. In addition, applied together with the Recommendations on early school leaving²² and the Youth Guarantee²³ it would ensure that the entire eligible population that has low levels of basic skills and has not achieved a qualification equivalent to upper secondary or equivalent in a VET track would receive the opportunity to upskill.

This option proposes concrete practical measures in the Member States; as a legal instrument, it signals the commitment of Member States to the measures set out, most of which will require implementation at national level and adaptation to the national context; it will form a new and stronger political basis for cooperation in the field. Under a Council Recommendation, Member States make a formal commitment to action, so this option would

²¹ Eurostat 2016

²² The Council Recommendation²² (2011) on policies to reduce early school -leaving provides a framework for comprehensive strategies including prevention, intervention and compensation measures, the latter being aimed at re-engaging people who have left education and training with only lower secondary education or less. Compensatory routes e.g. second -chance education or non-formal learning accompanied by validation of prior learning and opportunities to re-enter education and training help young people to complete their education.

²³ The 2013 Council Recommendation on establishing a Youth Guarantee²³ provides that all young people under 25 — whether registered with employment services or not — get a good-quality, concrete offer within four months of leaving formal education or becoming unemployed. The offer should be for a job, apprenticeship, traineeship or continued education and be adapted to each individual need and situation.

have the advantage of generating European commitment but also stimulating action at national level, based on a strong political commitment to address the low skills challenge for people of working age, by setting out a comprehensive and systematic framework for raising the level of basic numeracy, literacy and digital skills and of educational attainment in Europe. Given the scale of the problem and the need for a systematic approach in addressing it, it is expected that impact can only be achieved if there is strong political commitment.

This option also has the advantage of building upon much existing policy and provision; thus, not all of the provision referred to, nor the allied costs, will be new; Member States already have in place systems or elements of the systems needed to successfully deliver the upskilling objective. The option would encourage efforts to better target these financial and human resources, ensure more efficiencies in the system and better synergies between different policy interventions, especially between education and labour market actors. This option was therefore selected.

The Commission proposal for establishing a Skills Guarantee draws on best practices identified through research, analysis and reports and it defines a concrete action to turn into reality the ambition defined by Member States in the 2015 ET 2020 Joint Report of enhancing the provision of literacy, numeracy and digital skills, and providing sufficient second-chance opportunities leading to a recognised EQF qualification for those without level 4 qualifications.

The proposed elements of the Skills Guarantee mirrors the conclusions of the European Employment Policy Observatory 2015 review²⁴ on the organisation, profiling and targeting of training provision for upskilling unemployed adults (aged 25 to 64) with low levels of qualifications or inadequate basic skills. Its conclusions summarise many of the factors which have proved successful in developing flexible and effective, tailored upskilling pathways for this target group.

The proposed Skills Guarantee should be delivered in three steps and its delivery should be underpinned by a set of support measures and key principles. Concrete guidance on how to take these forward as well as examples from practices across member States and beyond are provided in the following sections.

²⁴ Thematic Review Synthesis: Upskilling Unemployed Adults (Aged 25 To 64). The organisation, profiling and targeting of training provision. <http://ec.europa.eu/social/main.jsp?langId=en&catId=89&newsId=2265&furtherNews=yes>.

3. The Proposed Skills Guarantee in Practice

This section provides an overview of the key elements that would define the Skills Guarantee, highlighting policy and practice examples from Member States for putting these in place.

3.1. The three steps of the proposed Skills Guarantee

The Skills Guarantee will be delivered to people who have left school without an upper secondary education and who are not eligible for support under the Youth Guarantee in accordance with national implementing arrangements. Taking into account national circumstances and available resources, Member States may decide to prioritise the delivery of the Skills Guarantee to certain sub-groups.

The Skills Guarantee would be delivered in three steps:

1. skills assessment,
2. tailored, flexible and quality learning offer, and
3. validation and recognition.

3.1.1. Skills assessment

Even though low-qualified adults have left school without gaining a formal qualification that would allow an easier access to the labour market, they have usually acquired through initial schooling or through work and life experience a certain set of skills. These have not necessarily been validated by a formal qualification. Initial assessment of an individual's skills already acquired and any skills deficits, and the development of a learning plan that tailors the training received to the needs of the individual provide a sound basis for the provision.

A blueprint for a skills audit is presented the 2012 Council Recommendation on validation of non-formal and informal learning: a process aimed at identifying and analysing the knowledge, skills and competences of an individual, including his/her aptitudes and motivations in order to define a career project, plan a training project and/or prepare for the validation of non-formal or informal learning outcomes. The steps identified in the 2012 Council Recommendation and developed in the guidelines on validation of non-formal and informal learning provide concrete guidance as to how to put in place skills assessment/skills audit systems and measures.

The results of an audit can be a document/portfolio that states the competences, skills and aptitudes of the individual, in many cases including a “next steps” plan regarding training and sometimes recommending the involvement in the process of validation of non-formal and informal learning. This does not always have to be a physical document; it can be an online tool.²⁵

In **France**, *bilans de compétences* are used mostly for workers, but also for jobseekers. The objective is to allow individuals to analyse their professional and personal competences, their aptitudes and motivation, with a view to defining a professional project or plan for re-training. This skills audit is personalised and is not related to a specific qualification or standard. The skills audit includes interviews taking place over a period of time with a trained counsellor.

²⁵ European inventory on validation of non-formal and informal learning 2014. Thematic report: current approaches to skills audits in the public sector. European Commission/ Cedefop/ ICF International. 2014, <http://libserver.Cedefop.europa.eu/vetelib/2014/87235.pdf>.

The skills audit results in a synthesis document drawn up by the counsellor. It includes proposals for career development as well as an action plan. Advice is given on necessary steps to achieve the plan.²⁶ Unemployed individuals can be offered by the PES a slightly different type of skills audit in order to support their job search.²⁷

Skills audits carried out as part of active labour market policies in **Belgium-Wallonia**, **Luxembourg** or **Switzerland** are targeted especially at unemployed people.²⁸ Some countries, e.g. France, the Netherlands and Norway, use simple screening tools that can immediately give an indication of skills weaknesses.²⁹ A literacy online screening tool³⁰ developed in the Netherlands and translated by ELINET (European literacy policy network) indicates simply and quickly whether somebody may have reading difficulties. The test takes no more than 12 minutes. In the **Netherlands** the test has been used over 32,000 times by municipalities, social services and social employment facilities.

The OECD ‘Skills and Education Online’ is an assessment tool designed to provide individual-level results that are linked to the OECD Survey of Adult Skills (PIAAC) measures of literacy, numeracy and problem solving in technology-rich environments. All results are comparable to the measures used in PIAAC and can be benchmarked against the national and international results available for the participating countries. In addition, the assessment contains self-reported information on skill use, career interest, health and well-being, and behavioural competences. Such a tool could be easily deployed through PES as part of the skills audit to quickly identify those individuals that need, as a first step to labour market integration, to be trained in basic skills to acquire a minimum level of proficiency.

Skills audits may be undertaken through self-assessment or one-to-one assessment, or a combination of the two.

The self-assessments can constitute a good documentation tool for self-reflection. However some individuals need the support of an adviser to help them to understand and identify their own skills and competences, and to present and describe them. Moreover, self-assessments alone do not seem sufficient for the documentation to be seen as reliable; in this case one-to-one assessment is preferable. These face to face consultations are usually provided by PES professional counsellors, skills auditors and in some cases by school professional counsellors and/or the psychological and pedagogical guidance services of adult learning institutions/schools. In **Hungary** and **United Kingdom**, both self-assessment and one-to-one audits take place. **Norway** has just announced a new web tool to let refugees register their own expertise, work experience and education, to speed up their integration into the labour market; refugees will themselves map their skills on a PC or smartphone, which will guide the educational and vocational guidance they will be offered.

In **Iceland** the skills assessment and validation is delivered through lifelong learning centres, rather than formal education and training providers. Individuals who have dropped out of formal education in the past find it easier to go to a centre that offers non-formal education and training. It is probable that they would be less willing to access validation if it was

²⁶ <http://cnfpt.fr/content/lutte-contre-lillettrisme-2?gl=NjliOGJkMzI>.

²⁷ European inventory on validation of non-formal and informal learning 2014. Thematic report: current approaches to skills audits in the public sector. European Commission/Cedefop/ICF International. 2014, <http://libserver.Cedefop.europa.eu/vetelib/2014/87235.pdf>.

²⁸ idem

²⁹ Based on information provided by National Coordinators for implementing the European Agenda for Adult Learning.

³⁰ <http://literacyscreener.eu/informatie.php>.

delivered by a formal education and training provider, because in many cases they have negative perceptions due to their previous experiences.³¹

Skills assessments are performed also at company level and various human resource tools exist in this respect, such as career development plans and portfolios which could also be used to capture the results of experiential learning at work.³² In some countries, specific guidance materials have been developed for employers to enable the tracking of employees facing difficulties with basic and digital skills.

Key features of effective practice in skills assessment include:

- initial assessment and diagnosis of an individual's basic skills (and any needs related to broader issues of learning) as a first step to identifying education and training needs.
- a document/portfolio that states the level of the individual's skills and "next steps" plan regarding development.
- availability of screening tools for authorities dealing with unemployed.
- availability of skills assessment tools online for self-administration.
- support of an advisor/counsellor (when needed).
- delivery of skills assessments in the environment most suited to the needs of the target group.
- convincing both practitioners and managers in companies of the value of the existing tools, and developing trust in them and their outcomes.

3.1.2. A tailored and flexible learning offer

Under the proposed Skills Guarantee, the offer can be in two stages but from the outset it should be open to progression to a qualification at EQF level 4 or equivalent. Based on the findings of the skills assessment, and where appropriate taking account of all the skills acquired outside formal education and training that have been validated, the next step is to provide learners with a tailor-made offer of education or training, that is designed to complement existing skills and bring literacy, numeracy and digital skills to the level ensuring his/her employability and full participation in society. For those individuals that have the necessary skills, they could be offered training leading to a qualification equivalent to EQF level 4.

3.1.2.1. Content of the offer

There are already many examples of good practice³³ in providing opportunities for adults to acquire and develop their basic skills from which lessons can be drawn.

In **Denmark**, general adult education comprises subject-based courses that may be completed by taking an examination corresponding to the leaving examinations of the *folkeskole*. These courses generally are divided into three levels of proficiency. It is also possible to complete a general examination with a certificate in 5 subjects: Danish, mathematics, English, natural science, and either French, German, history or social science. This qualifies a person for entering a higher preparatory programme or higher preparatory single-subject courses (i.e.

³¹ Funding Validation. A thematic report for the 2016 Update to the European Inventory on Validation of Non-formal and Informal Learning, European Commission, Cedefop, ICF International, forthcoming/ 2016.

³² Use of validation by enterprises for human resource and career development purpose, Cedefop, 2014, Luxembourg: Publications Office of the European Union. Cedefop reference Series No. 96. <http://www.Cedefop.europa.eu/en/publications-and-resources/publications/3065>.

³³ European Commission/ICF, 2015, Support for the work on policy guidance on basic skills for adults Report of findings from further literature search and analysis,

upper secondary education) in a relevant field of study.³⁴ This approach shows sensitivity to the challenges that low-skilled individuals frequently face; it provides them with appropriate learning opportunities and with methods, curricula and materials adjusted to their needs.

When addressing the delivery of learning for low-skilled people, it is essential that programmes concentrate first on building up their essential literacy, numeracy and digital skills, providing them with a solid foundation for progression to further learning and the acquisition of qualifications. For example in **United Kingdom** in the case of migrants from third countries, the learning offer includes opportunities for language training and preparation for training, where language development is a part of the process of integration. It uses a structured technique to empower learners to be more open and have more input into their own learning.³⁵

Many people who have dropped out of education and training prematurely have problems with abstract learning; these can be resolved by setting their learning in the context of their real life and work situations. The literature indicates that retention rates and success rates are higher in vocational programmes where literacy and numeracy learning is embedded in job-specific training, as compared with non-embedded programmes.³⁶ Analyses of programmes for the reintegration of low-qualified unemployed adults into the labour market have unveiled a specific role for work-based continuing vocational education (CVET) and training in that process. Learning activities can be located off-the-job only (such as the **Danish** vocational basic education for adults programme – Grunduddannelse for voksne, GVU); off-the-job locations sometimes consist in simulated work environments; learning activities can also be located only at the workplace (such as the **French** integration workshops and worksites programme – Ateliers et chantiers d’insertion, ACI); or they can be performed by alternating these types of learning location (such as the **Estonian** labour market training programme). This approach integrates content under the umbrella of the work objective, thus both extending the scope and making the training more meaningful.³⁷

For unemployed people, apprenticeship, work-based learning or an internship during training make a difference, because they improve not only the effects of the training, but also the job-search process; for employees, building the learning plan around their current jobs, e.g. through adult apprenticeships, helps them achieve a qualification in their field of work. Training of a practical nature reduces the gap between what is learned during the training and what is needed for a job.

Adults who have had negative experiences of education in the past are motivated by seeing that they are making progress; this can be achieved by structuring the education and training provision into manageable units of learning outcomes which can be documented, assessed and validated individually. It allows the progress of learners to be recorded at different stages on their pathway so that they can accumulate credit towards a qualification or part qualification in the national qualifications framework.

More specifically, practice shows that, to boost learners’ motivation and support their successful take-up of the offer, learning provision needs to be tailored, flexible and of good quality. Each of these aspects is illustrated in the following sections.

³⁴ Adult Education and Training in Europe: Widening Access to Learning Opportunities, Eurydice Report. European Commission/EACEA/Eurydice, 2015, Luxembourg: Publications Office of the European Union.

³⁵ EPALÉ: <https://ec.europa.eu/epale/en/blog/how-support-integration-migrants-refugees-and-asylum-seekers>

³⁶ Adult Education and Training in Europe: Widening Access to Learning Opportunities, Eurydice Report. European Commission/EACEA/Eurydice, 2015, Luxembourg: Publications Office of the European Union.

³⁷ CVET in Europe: the way ahead, Cedefop reference series 101, 2015, Luxembourg: Publications Office of the European Union.

3.1.2.2. A tailored and flexible offer

A tailored offer of education and training is a package of education or training that is designed specifically to develop only those skills that the individual needs to develop. It would take as its starting point the learner's current level of skill in each topic, and not oblige the learner to start again from scratch.

Adult learners, especially those with low levels of basic skills or qualifications, face various barriers and difficulties when re-engaging in learning. Evidence collected from countries shows that the adoption of certain practices in the way programmes are organised and delivered can facilitate participation in learning.

Offering **modular** adult education programmes and/or **credit based qualifications** is one of the ways to meet the specific needs of adult learners and to remove barriers to their participation. Programmes divided into building blocks allow adult learners to progress at their own pace and complete qualifications progressively. In **Portugal** the programme known as 'basic skills training' consists of a minimum of three modules, each lasting 50 hours and can have an overall duration of 150 and 300 hours, depending on the number of modules the learner decides to follow. In **Denmark**, 'preparatory adult education' consists of several 'steps' lasting between 30 and 60 hours, each completed by a test. The overall programme duration is between 120 and 240 hours. The modular nature of these programmes, in general, offers autonomy to the provider in designing courses and flexibility to the learner to tailor a course to his or her needs, which makes them eminently suited to the needs of adult learners. They also allow the learner to register his/her own progress in learning.³⁸

One of the solutions to overcome time constraints whether due to family responsibilities or to the work schedule and the lack of the 'prerequisites' (e.g. appropriate entry qualifications) could be distance learning provision which is both comprehensive and institutionalised. In **Germany** distance learning, within the programme 'ich-will-lernen.de' is organised as open and free online learning portal.³⁹

The literature shows that learners following basic skills courses are more likely to withdraw from the course at an earlier rather than a later stage. For that reason persistence can be supported by regular monitoring and recognition of learners' progression. What is important is that these breaks from learning are supported, principally by distance and blended learning, so that learners are not penalised and do not have the door to learning closed on them.⁴⁰

Proximity of the place where training is provided is also essential to ensure a wider participation into training. In **Denmark**, basic education classes at the workplace are organised in close cooperation with companies. For example in Southern Jutland the department of education owns two mobile classrooms in expandable lorries. Each classroom is fully equipped for teaching; the classes are a part of the working day, and employees come directly from their work and do not bother to change clothes. Providing basic skills training at the company site is a flexible solution, as employees need no transport and can quickly return to their work. Workers are more easily motivated to participate in basic skills courses when they can see their colleagues going to class in their work clothes and hear them talking about

³⁸ Adult Education and Training in Europe: Widening Access to Learning Opportunities. Eurydice Report, European Commission/EACEA/Eurydice, 2015, Luxembourg: Publications Office of the European Union.

³⁹ idem

⁴⁰ Vorhaus J. et al., 2011. Review of research and evaluation on improving adult literacy and numeracy skills. London: Department for Business, Innovation and Skills (BIS).

class during lunch breaks.⁴¹ In **Slovenia**, a mobile unit is used to bring learning to Roma communities; learning takes place in an intergenerational setting. A bus is used to reach rural areas in Estonia.

3.1.2.3. Quality offer

A review of academic literature suggests that substantial learning progression in basic skills requires at least 100 hours of tuition⁴². It is therefore important that the training that is offered has a certain level of intensity in order to bear results.

The training delivered in close cooperation with local stakeholders, in particular social partners and local and regional economic actors proves to be effective in that it can be aligned to local and regional labour market needs. In **Nordic countries** provision is often the responsibility of the municipalities. The **Netherlands** has regional colleges for the delivery of VET and adult learning and **Ireland** has recently created 16 regional Education and Training Boards responsible for vocational and further education and training.

A 2013 study on Quality in the Adult Learning⁴³ sector found that most countries that have in place quality assurance systems at a macro level, for adult learning, formal as well non-formal learning, are also the better performing countries in terms of participation in adult learning and have higher educational attainment levels. It also found that in most countries, quality assurance systems, especially for the non-formal adult learning sector, can be improved. Such improvements could be based on a high number of interesting practices which can serve as inspiration for improving and setting of quality assurance systems. While existing quality instruments may not be able to cope with the diversity and cross-sectoral nature of basic skills learners, they do, nevertheless, provide a basis for further development. In particular, building on the EQAVET model and experience is considered to be worth exploring.

As part of quality arrangements, it is important to ensure that teachers and trainers responsible for delivering education and training for this target group are trained in adult pedagogies, and that literacy and numeracy skills teachers are especially trained for this purpose.

Key features of effective practice are:

- learning content, structure of the learning, schedule, teaching/learning methods and learning supports adjusted to the needs and circumstances of the target group.
- programmes concentrating first on building up basic skills to provide solid foundation for lifelong learning.
- programmes connecting practical and inspired by the learning-by-doing approach.
- programmes divided into modules or smaller stepping-stones.
- modes of delivery adjusted to the needs of the target group (e.g. distance learning).
- programmes aligned to local and regional labour market needs and develop in the cooperation with stakeholders.
- quality assurance systems.
- experienced and qualified training staff.

⁴¹ EU Lifelong Learning Programme (n.d.), Literacy needs for vocational purposes in Europe. A documentation: facts, information and examples, Literacy and Vocation project, Zukunftsbau GmbH, Berlin.

⁴² Adult Education and Training in Europe: Widening Access to Learning Opportunities. Eurydice Report, European Commission/EACEA/Eurydice, 2015, Luxembourg: Publications Office of the European Union.

⁴³ Thematic Working Group on Quality in Adult Learning, Final Report, 24th October 2013, https://www.hm.ee/sites/default/files/thematic_wg_quality_report.pdf

3.1.3. Validation and recognition

Validation⁴⁴ makes visible and values the rich learning that frequently takes place outside formal education and training – at home, at work, during leisure-time, etc. While most commonly found within education and training, validation is carried out by several other types of institution and stakeholder: labour market authorities, economic sectors, enterprises and voluntary organisations. The multiple outcomes of validation range from formal qualifications to enterprises' internal review of acquired competences.

When implemented correctly, participation in a validation process can increase the learner's self-esteem and self-confidence and awareness of his or her capabilities; it can empower the learner and provide the opportunity to embark on professional and personal development. Validation can: lead to formal recognition of learning outcomes not already certified; stimulate engagement in formal learning and further non-formal learning; reduce costs through exemptions which eliminate or reduce the need to spend time and money re-learning what has already been learned. Benefits for employers include a reduction in the time away from the job required by an employee to achieve a qualification.

Assessment approaches and qualifications are pivotal in the development and recognition of adult basic skills. Assessment can serve a range of purposes, namely: to sum up learners' achievement at the end of a programme (summative assessment) and to help the learning process of individuals by identifying specific learning needs and adapting teaching accordingly (formative assessment). These different purposes are not mutually exclusive.

In the field of adult learning 'assessment for learning' in addition to 'assessment of learning' is gaining momentum as an effective learner-centred approach. Tests can be intimidating for those individuals who have experienced failure in formal education or have poor verbal/writing skills⁴⁵. The formative assessment tools (conversational or interview methods, observation and simulation) developed for the validation of non-formal and informal learning are suitable for low-skilled learners. In particular, the two final stages of a validation procedure are relevant here: 'assessment' and 'certification' of the results of the assessment of an individual's learning outcomes, regardless of how they are acquired, in the form of a qualification, or credits leading to a qualification which is recognised within the national system or framework, or in another form, as appropriate.

Key features of effective practice are:

- small, clear, transparent steps (credits embedded in the qualifications framework/system) to measure achievement and progress.
- formative assessment procedures encouraging learners and helping them persevere towards results.

3.2. Enablers

In order to make the proposed Skills Guarantee a success, certain support measures have to be in place and delivery should be underpinned by a strong partnership approach between actors at all levels and all sectors.

⁴⁴ European guidelines for validating non-formal and informal learning, 2015, <http://www.cedefop.europa.eu/en/publications-and-resources/publications/3073>

⁴⁵ Action plan on Adult Learning. Basic skills provision for adults: policy and practice guidelines <http://adultlearning.isfol.it/adult-learning-2012-2014/risorse/basic-skills-for-adults-rapporto-2011>

3.2.1. Coordination and partnerships

3.2.1.1. Coordination

A multitude of organisations is involved at national level in addressing the needs of low-skilled people. The Skills Guarantee proposal would enhance synergies between these to maximise their impact and ensure a coherent intervention. Cooperation and engagement of these stakeholders is essential at many stages in the learning pathway and across a range of steps: in publicising the initiative, recruiting and motivating the learners; providing information and guidance; skills assessment and validation; providing individual learning opportunities, supporting learners in various ways throughout the process and helping them to persist and reach the desired outcomes; testing, certification and qualification.

Depending upon national circumstances it is envisaged that the following would have a decisive role:

- Relevant ministries and public agencies, especially regional and local authorities.
- Companies, social partner organisations, chambers of commerce, sector institutions.
- Public employment and career guidance services.
- Education and training institutions and providers, national authorities responsible for education and training, curricula, assessment, etc.
- Local authorities and community institutions, such as schools, VET centres, libraries, social service, community centres available locally.
- NGOs and community organisations, including religious bodies
- Existing European networks and contact points dealing with adult education and training, second chance education and specific groups, such as National Coordinators for Adult Learning, European Basic Skills Network, ELINET, European Lifelong Guidance Network.

Effective coordination of policy and provision is one of the key factors proven to help ensure that public policy interventions on adult learning achieve their goals. In the majority of countries, more than one body shares the responsibility for the management and implementation of training even for unemployed people. Therefore, there is room to improve coordination between bodies, which include: national training bodies, PES, education and vocational institutions, private training companies, employers, voluntary and community organisations and increasingly social partners involved in providing work-based opportunities. In particular, there will need to be coordination between provision for unemployed people and economically inactive people, linking support provided by employers and public adult and vocational education and training programmes for people in employment who need upskilling in order to maintain their jobs, further their careers and manage occupational transitions.

To efficiently and effectively meet the challenges regarding low-skilled people, a holistic approach proves most valuable. This approach also helps avoid issues of stigmatisation or taboo attached to having problems with literacy or numeracy, or attending basic education courses. By treating all of the issues together, a Skills Guarantee can be embedded, e.g. under the guise of improving health, helping children's education, or dealing with personal finances; other services can contribute to raising awareness of a learning need, developing interest or motivation to learn.

Developing an integrated approach to the governance and planning of skills development for low-skilled adults would, ideally, mean ensuring that a whole-of-government approach is in place spanning all the relevant ministries and public authorities (which could include:

education and training, employment, social, economic, welfare, justice, migration, family, health and related policy areas) to improve coherence and accessibility of the offer to the learner, as well as effectiveness and quality.

Coordination of relevant education and training providers spanning initial and further education and training, private sector providers, employment services, apprenticeships and chambers of commerce and industry, community and civil society bodies is crucial to give the learners access to opportunities in the setting most appropriate and to enable transfer as learning progression requires.

3.2.1.2. Partnerships

It is important to engage and actively involve all actors that play a key role in the delivery of the three stages of the proposed Skills Guarantee.

A recent example of an initiative endorsed at national level, but being developed and implemented by private actors, comes from **France** with the setting up of a nation-wide cross-sectoral certification on basic professional skills “Cléa”.⁴⁶

The involvement of all key stakeholders to implement policy and provide learning opportunities should take place close to the learner, which means a key role for local authorities and community bodies. Innovative use should be made of already existing infrastructure such as **public libraries**. Europe's 65,000 public libraries are the first place to which people of all ages and abilities can go to gain minimum levels of literacy, numeracy, digital and foreign languages. In 2013, 24 million adults in the EU participated in training organised by libraries and 2.3 million people attended digital literacy courses in libraries⁴⁷.

But equally, the workplace has a privileged role in the learning of over half the target group who is employed, and this argues for the close involvement of social partners with the group of stakeholders that implement the initiative. One approach to this complex situation is to coordinate within economic sectors, which is common in the **Netherlands**, e.g. in VET and validation.

The employers' role in encouraging, funding and facilitating learning by their employees is crucial, because so much is job-related and employer-sponsored. Encouraging employers – especially smaller and medium-sized employers – to enrich the workplace with learning opportunities is a key approach to consider, especially in countries where employers are not engaged in training their employees. In countries where smaller companies are at a large disadvantage, measures could include skills needs and skills fit analyses or audits as well as training and career plans. Any enterprise in **Norway**, private or public, can apply for funding to support employees with low levels of basic education through tailor-made courses. The programme emphasises the following criteria: (1) learning activities should be combined with work and basic skills training should preferably be linked to other job-relevant training, and (2) the courses should increase participants' motivation to participate in additional learning.

Schools and the education sector generally can also play an important role in increasing the level of basic skills in Europe. The evaluation of an intergenerational family literacy programme in **Germany** shows that promoting linkages between the kindergarten or school and home-based learning can increase adult participants' communication skills, self-esteem,

⁴⁶ <http://certificat-clea.info>.

⁴⁷ Reading & Writing Foundation (2015) *Libraries Change Lives*

and integration into society.⁴⁸ **Luxembourg** has included family learning in its 2016 Government programme in an effort to break the ‘vicious cycle of intergenerational transmission of poor literacy and academic failure’.

Ensuring cohesion in all of these stages may mean that countries identify and provide a sufficient mandate to a body or bodies responsible for implementation of the 'skills pathways', if such a structure is not already in operation.

3.2.2. Outreach, guidance and support measures

3.2.2.1. Outreach

Since many low-skilled or low-qualified people are not actively seeking learning opportunities or are unaware of their learning needs, the proposed first step would be to find them, inform them about the opportunities available within the Skills Guarantee and get them engaged in the upskilling process. Data suggest that as many as 83.5% of low-qualified adults who do not engage in learning do not want to participate in education and training⁴⁹. Research shows that many adults accept their low level of skills either because they have had previous negative experiences of learning (often at school) or because they are simply unaware of the benefits of raising their skills levels. Reluctance to engage in further learning could also be explained by a lack of motivation; often, adults are unwilling to submit themselves to further distress, especially in societies where ‘going back to school’ carries severe social stigma. Motivating these people to learn poses a particular challenge for outreach activities.

Adequate identification of the many different sub-groups (including their needs, motivations, attitude to learning, status in society, socio-demographic features, etc.), each of which may need a different approach, is essential for designing effective outreach measures. This mapping needs to be done at national and even regional levels to allow public authorities target better the outreach measures. Following the release of the PIAAC results, Nordic countries have initiated such an analysis with a view to identifying the specific sub-groups that make up the low-skilled adult population and in which region they are located.

The range of outreach activities is very wide and may include: TV and radio campaigns; distribution of printed materials at places frequented by the target group(s), e.g., in schools attended by their children, at the workplace for those in employment, in local amenities such as libraries, community centres, sports centres, in social services and unemployment offices, etc.); and the use of modern social media with messages adapted to the target group (attractive web-based campaigns, mobile applications etc.). Further developing the use social media such as Facebook offers a promising way of reaching out to some of the target groups.

A successful example of a wide media campaign was carried out in UK by BBC. The BBC First Click campaign to promote computer and Internet literacy in the **UK** primarily targeted adults above the age of 55 with no access to the Internet. It encouraged them to overcome their fear of technology and lack of skills, by engaging them in non-formal computer and web learning courses available nationally, free of charge. Members of the public could ring a free advisory telephone line, which directed them to the most suitable local computer and web literacy course providers. Courses were run by a wide range of partners including learning

⁴⁸ www.unesco.org/uii/litbase/?menu=4&programme=67.

⁴⁹ Reasons for not participating in lifelong learning by educational attainment level [trng_aes_197]. Adult Education Survey 2011. Eurostat 2015.

centres, adult learning organisations, community associations, libraries, schools and charities.⁵⁰

Effective outreach work includes bringing the message to the learner and a more direct approach involves contacting people directly, perhaps visiting them in their homes or talking to them at the supermarket. Learning “ambassadors” who act in the workplace and/or the community can be important motivators of low-skilled and low-qualified people. In the workplace, HR departments and union representatives could fulfil this role and in the community parents could be reached through their children. Leisure activities could also be used as entry points. Third sector organisations with strong community links play a key role in reaching low-skilled individuals. Unemployed individuals may be best supported through employment services in the context of job-related guidance. Immigrants may be reached initially by members of their own communities. The direct approach requires highly competent practitioners; it is essentially about forming relationships that build trust and enable the possibility of structured learning to be introduced to the individual and acted upon by him/her.

3.2.2.2. Guidance

Among countries that have established education or career guidance services open to all adults, some have developed services putting specific emphasis on education and training guidance. For example, in 2010, **Denmark** established a network of 13 career guidance centres to act as a 'one-stop shop' for adult education and training. Alongside individual guidance for adults, they also provide counselling services to businesses (especially SMEs) regarding the provision of continuing training services⁵¹. In **Slovenia** a network of adult education guidance centres staffed by well-trained, professional counsellors was established. This network seeks to connect as many local adult education and guidance providers as possible into a network focused on increasing quality and harmonising activities. The guidance centres in the network provide adults with free, impartial, confidential information and guidance about learning and education.⁵² **Norway** has developed a network of 36 career centres at county level offering free career guidance to all those aged 19 and above. Many of these centres cooperate with local enterprises and are also involved in organising the validation of non-formal and informal learning.⁵³ In **Finland** a Study Path service has been created. It provides citizens with comprehensive information on studies, application instructions, counselling and career planning services based upon the principle of lifelong learning. It aims to create a customer-driven, uniform and cost efficient on-line service package that supports the development of work across sectoral boundaries.⁵⁴

In all these examples the guidance services accompany and support learners throughout all stages of the upskilling process. Their aim is to support clients to set learning and progression goals, to identify ways and means of achieving them within the existing provision, to develop individual learning plans and to identify any learning support needed to achieve a successful learning experience and worthwhile outcomes adjusted to the needs of the labour market.

⁵⁰ A wide range of examples for awareness campaigns, lessons learned and good practices concerning outreach actions can be found in the 2012 EU publication *Strategies for improving participation in and awareness of adult learning*.

⁵¹ Guidance in Education – the educational guidance system in Denmark, Published by Euroguidance Denmark, The Danish Agency for Higher Education, 2014, http://ufm.dk/en/publications/2014/files-2014-1/guidance_in_education_pdfa.pdf

⁵² <http://www.projectgoal.eu/index.php/slovenia/slovenian-institute-for-adult-education>

⁵³ Adult Education and Training in Europe: Widening Access to Learning Opportunities. Eurydice Report, European Commission/EACEA/Eurydice, 2015, Luxembourg: Publications Office of the European Union.

⁵⁴ ET 2020 National Report of Finland, Ministry of Education and Culture of Finland, 30 June 2014, http://ec.europa.eu/education/policy/strategic-framework/doc/et2020-national-report-fi_en.pdf

The induction and orientation stages of access are critical for a prospective basic skills learner. Guidance as a one-to-one activity is an essential support at the access stage. In collaboration with the basic skills practitioner(s), the guidance practitioner guides the potential participant through needs analysis, assists him/her to identify the learning programme s/he wishes to follow and helps to clarify the requirements of that programme.

Guidance services can use ICT tools. In this context, **the United Kingdom** launched the National Careers Service in 2012, replacing and building on the former 'Next Step' service. The National Careers Service provides information and guidance on learning, training and work opportunities via its website, by email and over the telephone. **Greece** has also developed an interactive career guidance portal⁵⁵, which targets adults of all ages and provides services for career development as well as mobility information (e.g. digitized career tests, e-counselling, etc.).

Germany has carried out several research projects to evaluate the impact of guidance services provided within public employment services on the integration of unemployed people into the labour market. The outcomes of one of these projects indicate that frequent contacts between the placement officer and the unemployed person tend to have a positive impact on reducing unemployment.

3.2.2.3. Financial support measures

There are several types of costs that could be considered as affecting the individual's choice of engaging in learning, on the one hand costs directly associated with the service provided, be it in the form of skills assessment, training etc., such as fees for accessing these services, or costs indirectly linked to the provision, such as travel costs, materials, salary foregone etc. These may also determine whether an individual can participate. There is some evidence that financial assistance helps overcome this. For unemployed people possibilities to keep receiving unemployment benefits while learning, and to have access to travel allowances where necessary, could be considered. By the same token, Member States could dismantle disincentives to invest in skills and achieve higher earnings in their tax-benefit systems. The Thematic Working Group on Financing in Adult Learning⁵⁶ made the following recommendations in this respect:

- Effective planning and funding of literacy, numeracy and digital skills provision and education towards a qualification, which should be free of charge to disadvantaged groups, will require management of all the above stakeholders in terms of the flow of resources: the input they make; the resources they require; the synergies to avoid overlaps, etc.
- While the overall level of participation in adult learning is important, both public and private investment should focus on priorities for stable and sustainable development and on the achievement of high quality outcomes. Government-backed quality assurance systems provide consumer protection for learners as well as ensuring efficient use of investment. The use of cost benefit analysis techniques, recognising both economic and social benefits, can improve the efficiency of investment. Good practice and innovation from short term projects should be sustained through mainstream funding mechanisms.

⁵⁵ e-stadiodromia.eoppep.gr

⁵⁶ Thematic Working Group on Financing in Adult Learning, Final Report, October 2013, https://www.hm.ec/sites/default/files/thematic_wg_financing_report.pdf

- The responsibility for funding should be balanced between government, employers, individuals and other stakeholders – such as civil society organisations – to ensure there is sufficient investment in the development of basic skills. Government plays an important role in funding for disadvantaged groups and correcting market imperfections. Employers and individuals make investments based on their own perceived costs and benefits. Cost sharing, reflecting those who benefit, can bring about a more stable and sustainable funding environment. The involvement of social partnerships and civil society organisations can ensure equity in cost sharing arrangements and bring funding from new sources (such as foundations).

When developing financial support for the proposed Skills Guarantee, it is important to identify already existing instruments, and on this basis assess whether the new instruments are needed or existing ones should be reshaped. Although there are many different funding instruments in use across Europe, the majority of public funding is generally distributed through a limited range of instruments; each of which has potential advantages and disadvantages, depending on the needs of the target group and circumstances in the country or region (see Table 2).⁵⁷

⁵⁷ idem

Table 2: Summary of Advantages and Disadvantages of funding instruments

Funding Instrument	Advantages	Disadvantages
Funding formula	<ul style="list-style-type: none"> • Simplicity of application • Adjustable to meet policy priorities • Transparency • equity 	<ul style="list-style-type: none"> • complexity if used for multiple types of course • inflexible to local variations • variability in application
Programme funding	<ul style="list-style-type: none"> • provides continuity • facilitates system developments • ease of understanding 	<ul style="list-style-type: none"> • inflexibility • standardised coverage • lack of transparency
Project funding	<ul style="list-style-type: none"> • address short term needs • tailored to specialist circumstances • low risk experimentation 	<ul style="list-style-type: none"> • lack of continuity • replication and scalability • delay in starting
Direct grants	<ul style="list-style-type: none"> • explicit intervention • targeting towards end users • encourages cost sharing 	<ul style="list-style-type: none"> • deadweight risk • accountability may be poor
Tax incentives	<ul style="list-style-type: none"> • low cost of administration • automatic matched funding • simplicity for non-professionals 	<ul style="list-style-type: none"> • Only available to tax payers – individuals or organisations • Universal rather than targeted • retrospective
Levy Grant	<ul style="list-style-type: none"> • mobilise employer resources • cost sharing between training and non-training companies • tri-partite governance 	<ul style="list-style-type: none"> • Generally large companies receive levy funding • Potential for ineffective and expensive administrative costs
Training Leave	<ul style="list-style-type: none"> • shared cost between individual and other stakeholders • encourages personal responsibility 	<ul style="list-style-type: none"> • Difficult to implement for smaller organisations • Perceived costly by employers fearing learner leaving
Vouchers/ILA	<ul style="list-style-type: none"> • Targeted at specified individuals • Can be linked to guidance, job search and other supporting activities • Positive motivation for Individuals 	<ul style="list-style-type: none"> • Administrative costs in reaching target group only • Need to be of significant value to motivate
Loans	<ul style="list-style-type: none"> • overcomes short term financial barriers • beneficiary ultimately pays • encourages self-investment in learning 	<ul style="list-style-type: none"> • risk of delayed or non-repayment of loans • discourages those not used to paying for learning • administrative burden

Source: Thematic Working Group on Financing Adult Learning, Final Report, October 2013, https://www.hm.ee/sites/default/files/thematic_wg_financing_report.pdf

3.2.2.4. Non-financial support measures

The participation in education and training of low-skilled individuals can be boosted if complementing measures are in place to address non-financial obstacles to participation. To support employees' participation in training, training leave enables individuals to take time to attend adult learning of their own choosing. Generally the employer has the discretion to agree or disagree with a particular request; though in many countries there is legislation which

provides a legal framework setting out general entitlements. This framework may be based on agreements between social partners at national or local level.

As regards training leave, a Cedefop study⁵⁸ shows that quality target-group-specific paid training leave is the most effective type of training leave. However it should be integrated with other policy measures aimed at disadvantaged employees. Member States should play an active but mostly non-financial role by guaranteeing a favourable legal environment for universal training leave instruments (e.g. by providing a well-defined legal framework for payback clauses and underpinning the link with training leave instruments). Eligibility and preferential treatment criteria should be defined in a way that enables those groups of employees who need training leave most to benefit from it. Examples of such efforts are the **Hungarian**⁵⁹ preventive training instrument, under which low-qualified and ageing employees were entitled to longer periods of training leave, while disabled employees were eligible for both longer periods of leave and a higher level of funding. Training-leave-specific guidance and information services targeted at disadvantaged employees could be provided. For example, national governments could improve the use of training leave by providing model training leave contracts which could ease the administrative burden for companies (especially SMEs). They could also provide telephone hotlines and/or e-mail/web services managed by training leave practitioners to give support to both employees and employers in the practical implementation of training leave.

3.2.2.5. European Funds⁶⁰ projects on upskilling adults

When planning the financial investment for the Skills Guarantee good practice from the European Social Fund (ESF) for the financial period 2007-2013 can be taken into account.

For example the **Portuguese** New Opportunities Initiative (described in section II.1.a) was co-financed by the ESF.

In **Estonia** the EU-funded 'State-Commissioned Work-Related Training for Adults' programme, under the responsibility of the Ministry of Education and Research, mainly targeted low-qualified adults or adults with obsolescent qualifications. While employed people were the main target group, unemployed people represented around a quarter of all participants. The courses offered generally lasted around 50 hours, but could differ depending on type of school or course. The main providers were schools delivering initial education to young people. On completion participants received a non-formal certificate.

An ESF project in **Poland**, 'Lighthouse Keepers of Digital Poland', supported digital training for the 50+ generation (2012-2015) and it reached around 206 000 participants.

In **Latvia**, unemployed people were able to acquire a vocational qualification or improve their transversal skills within the ESF-funded project (2009-2015) 'Training for the unemployed and jobseekers in Latvia'. Another ESF-funded project (2010-2014) entitled 'Lifelong Learning Measures for the Employed' provided an opportunity for employed adults to improve their skills in various areas, including ICT, language, entrepreneurial, social and civic skills, and learning to learn. Both projects were coordinated by the State Employment Agency.

⁵⁸ Research Paper No 28, Training leave. Policies and practice in Europe, Cedefop 2012

⁵⁹ idem

⁶⁰ Based on Adult Education and Training in Europe: Programmes to Raise Achievement in Basic Skills. Eurydice Report, European Commission/EACEA/Eurydice, 2015, Luxembourg: Publications Office of the European Union.

In **Bulgaria**, since 2012, courses for mature learners (aged 16 and above) with limited prior school experience were co-financed by the ESF and learners, and made available to learners free of charge. They were developed under the Operational Programme 'Human Resource Development' adult literacy strand and targeted people who had not completed 'basic education', i.e. education up to the end of lower secondary level. They covered various fields, including Bulgarian language and literature; mathematics; English language; geography and economics; history and civilisation; chemistry, physics and biology; information technology; physics and astronomy; and biology and health. The courses were delivered by schools that also provide initial education for young people; their duration varied between 324 hours for courses covering the last three grades of lower secondary education and 12 hours for courses such as ICT or physics and astronomy, covering only the last grade of lower secondary education. Upon successful completion of lower secondary education, participants could follow upper secondary general or vocational programmes.

In **Ireland** adult literacy services include courses in reading, writing and numeracy, and ICT. The priority groups are low-qualified adults and those whose literacy and numeracy skills are below Level 3 on the National Framework of Qualifications. The provision is co-financed from European funds and is free for learners. In 2012, around 57 000 people participated in courses provided under the adult literacy framework.

In **Italy** (Sicily Region) training courses (“Cantieri scuola”) which aimed to reduce the risk of social and economic exclusion and to foster the transition or the re-integration into the labour market of unemployed people aged 18-65, especially the long-term unemployed, received ESF support. 54% of the actual participants were at ISCED level 2 or below and 64% were economically inactive. In total, 56 097 people received support.⁶¹

3.3. Target groups

As the situation across Member States differs and as the heterogeneous group of low-skilled comprises several very different sub-groups, there is no ‘one-size fits-all’ solution. This section focuses on the main sub-groups that could be part of the adult low-skilled population and briefly explains the particular characteristics that may be taken into account in the context of the proposed Skills Guarantee. Member States will wish to prioritise certain sub-groups for support taking into account available resources and national circumstances. This decision may also be influenced in the light of the picture they gather about which sub-groups have the most pressing need and where they are located, for example.

Although each individual has specific needs, there are particular needs and circumstances that are common to people in these sub-groups, consideration of which will facilitate development of a tailored approach to their learning needs.

3.3.1. Unemployed people⁶²

Low-skilled Europeans face particular difficulty in finding jobs, both for the first time and after losing their employment. Their difficulties in returning to work have been accentuated both as a result of years of recession and of the fast evolving work patterns in the digital, global economy, which render their skills obsolescent. They may benefit from active labour

⁶¹ ESF 2007-2013 Ex-post Evaluation: Investment in Human Capital (VC/2013/1312), Final report, ICF for the European Commission, August 2015.

⁶² Based on European Employment Policy Observatory 2015. Thematic Review Synthesis: Upskilling Unemployed Adults (Aged 25 To 64). The organisation, profiling and targeting of training provision, <http://ec.europa.eu/social/BlobServlet?docId=14143&langId=en>.

market policies (ALMP) geared towards helping them return to work through job-related training offers. A number of countries target low-skilled workers via general measures for unemployed people, often involving vocational courses of relatively short duration. However, the 2015 European Employment Policy Observatory Thematic Review Synthesis: Upskilling unemployed adults (aged 25 to 64) found that provision of training for those farthest from the labour market can be variable and an underemphasised aspect of ALMPs in some countries, that the available evidence suggests that there is very little adaptation of education and training activities to the needs of different target groups and that it appears that specific groups of unemployed adults are not especially prevalent among the beneficiaries of training.

Active labour market policy in general aims to get people quickly into a job and, in general, offers job-specific skills despite the fact that many people would need to top up their literacy, numeracy and ICT skills before embarking on occupational training. For low-skilled unemployed people, strengthening their basic skills is a prerequisite for successful progression to job-specific programmes.

Consideration should also be given to the fact that “the unemployed often face difficulties accessing employment, or the education and training that might lead to employment, which are not directly linked to the labour market: financial difficulties and other forms of social disadvantage can make it difficult for them to access childcare or transportation. Further, they may be not incentivised by a benefit system where being in certain types of employment is financially less advantageous than being unemployed and in receipt of benefits (Oesch, 2010)⁶³”.

Good examples exist in the ‘key competences’ programme, in **France**, in which the training offered to unemployed, and especially low-skilled unemployed people must be in line with their careers, and the content of training is personalised and adapted to each person’s professional ambitions. The programme can also tackle literacy issues. In Aquitaine, the programme is designed as follows: identifying training needs; measuring gaps between skills and the objective to be attained; designing an individual training programme; individual and collective workshops and evaluations. The programme is particularly directed towards people furthest from employment opportunities. The programme allows beneficiaries to continue their job search, since there is a maximum of 18 hours of training per week. It can be slowed down or suspended for professional reasons. The objective is then to obtain an apprenticeship or undertake skills training (e.g. a ‘professionalisation contract’ or Pôle Emploi measures).

The initiative “Erstausbildung für junge Erwachsene” in **Germany**, run by the PES, was established to motivate and support around 100 000 low-skilled young adults (aged 25–34) without a qualification to complete vocational training, or gain at least a partial vocational qualification. Faced with an increasing skills shortage, the aim is also to take into account the labour market needs of companies, in particular SMEs. The initiative is supported by PES and the social partners. The social partners are closely involved in selecting the right vocational training courses and in providing training facilities. Financial assistance is available both for the young adult and the company.

This target group is partly covered by the Council Recommendation (2015) on the Integration of the Long Term Unemployed in the Labour Market and the Council recommendation establishing a Youth Guarantee.

⁶³ Cedefop (2013) Return to work: Work-based learning and the reintegration of unemployed adults into the labour market, www.Cedefop.europa.eu/files/9082_en.pdf

While the Council Recommendation establishing a Youth Guarantee already foresees the possibility to receive an offer for education and training, this is not clearly spelled out in the Recommendation on the integration of the long term unemployed (LTU). The rate of LTU among the low-educated labour force has more than doubled during the crisis reaching 10.5% in 2014. Without effective measures to facilitate a return to employment, there is a risk that many people become permanently excluded from the labour market and abandon their job search efforts. Each year, one out of five LTU gives up looking for a job and becomes inactive⁶⁴. The proposed Skills Guarantee applied together with the Recommendation on LTU would reinforce the offer to low-qualified long term unemployed people who will have the possibility of engaging in further education and training allowing them to reach a minimum level of basic and digital skills or leading to a qualification as part of the job integration agreements. Skills audits should become part of active labour market policies with a view to identifying from the outset those people with serious weaknesses in basic skills so as to direct them early on to tailored learning opportunities.

3.3.2. People in employment

This is the target group that is the biggest⁶⁵ but has so far been targeted least, due in part to it being difficult to reach, especially by the state support. At the same time, continuing education and training is likely to be a self-sustaining policy, which upskills workers, boosts their employability and productivity and helps them to stay in the workforce. Employer participation in providing learning opportunities is of major significance: two thirds of all work-related non-formal learning is provided or sponsored by the employer. But this differs depending on the size of the company: big employers (250+ employees) provide training opportunities on average for half of their employees; medium size employers (50 – 250 employees) provide it for a third of their employees take part; while small employers (10-50 employees) provide it for only a quarter of employees. Added to this is the ‘Mathew Effect’, as most of the training goes to highly skilled workers.

Training funded by companies tends to be of very short duration and not ideally suited to low-skilled people: on average participants receives only 25 hours per year, compared to 65 hours per year for learners in non-formal learning programmes (including self or publicly funded programmes), and 374 hours per year for learners in formal learning. More importantly, employers are often reluctant to provide training in basic skills, which they see as the responsibility of public education system. However, employers could play a bigger role. In addition to providing more work-related training, and to encouraging their staff to go back to learning, they could open up the workplace to guidance services and to public authorities and third sector organisations that provide basic skills training. Another possibility would be to encourage in-service adult apprenticeships as part of which employees’ jobs form the practical, work-based training component and arrangements are made for them to attend theoretical training off-the-job.

The employers' role in encouraging and facilitating learning by their employees (through flexible working times, incentives or funding) is crucial and can be supported by trade unions. In the **United Kingdom**, trade unions contribute through Union Learning Representatives. In the public sector, UNISON⁶⁶ has over 3 500 active Learning Representatives. They are a major resource in helping to encourage lifelong learning at work. The role of the ULR is

⁶⁴ Tanay, F; Salanauskaitė, L: The long-term unemployed: the people that the economic recovery forgot? <http://ec.europa.eu/social/main.jsp?langId=en&catId=89&newsId=2445&furtherNews=yes>

⁶⁵ See Staff Working Document section 2.1.1.

⁶⁶ <http://www.open.ac.uk/choose/unison/develop/my-unison/union-learning-representatives-ulrs>.

recognised in law and attracts certain rights. They play a vital role in raising the profile and importance of learning with union members, providing support to members who are studying and negotiating with employers for facilities to enable workplace learning, and identifying and promoting relevant course and programme that will help members to return to learning.

Encouraging employers – especially smaller and medium-sized employers – to enrich the workplace with learning opportunities is a key approach to consider, especially in countries where employers are not engaged in training their employees. In countries where smaller companies are at a large disadvantage, measures could include skills needs and skills fit analyses or audits as well as training and career plans.

A successful example of a workplace programme is Basic Competence in Working Life (Basiskompetanse i arbeidslivet - BKA) in **Norway**. The Norwegian government considers that there is a need for more basic skills in all areas of the Norwegian workforce and has set aside funds to reduce the knowledge gaps of certain groups to better meet the requirements of the labour market and society at large. The Norwegian Agency for Lifelong Learning (VOX) runs the BKA programme which aims to facilitate increased participation in working life and society. BKA is designed to increase basic skills in reading, writing, numeracy and ICT of its participants and since 2014 has added oral skills. There are no costs to employers apart from releasing staff and providing a learning space. It aims to support employees with low levels of basic education through tailor-made courses. The goal is for more employees to participate in skills improvement, education and training so that the company can continue to be profitable and competitive in the long run. In the knowledge that basic education alone will not be sufficient for lifelong professional development, BKA courses contribute to both upgrading and developing participants' basic skills, and their own experiences are taken into account in planning and implementing such training. However, it is a practice supported by management and characterised by corporate ownership and commitment and by working on the planning and implementation of courses funded by the community.⁶⁷

3.3.3. Economically inactive people

Economically inactive adults (including social/disability benefit claimants or unregistered adults) are perhaps the most challenging group to encourage back into learning; the group comprises those who may choose to be at home caring for children or other family members, but also older people, prisoners, people who are sick or with disabilities. Possessing only low levels of skills may also contribute to their poor health, lack of participation in society, low income, etc., and a majority of them are not motivated to learn or take action to improve their skills.

Economically inactive adults who are not registered with the Public Employment Services could be reached through other channels, e.g. social workers or institutions dealing with welfare and social benefits, NGOs, care centres, libraries, religious centres, etc., since education may be part of a more complex set of needs. Economically inactive people living in rural communities may experience particular difficulties in accessing learning and support services. Developments in broadband provision will facilitate their access to distance learning and online support services. Other groups which could be singled out for specific action in this category include prisoners.

⁶⁷ <http://www.unesco.org/uii/litbase/?menu=4&programme=126>.

3.3.4. Early School Leavers and NEETs

This target group of young people is already covered by the implementation of the Council Recommendation on early school leaving (ESL) and the Council Recommendation on establishing a Youth Guarantee.

The Council Recommendation (2011) on policies to reduce early school-leaving provides a framework for comprehensive strategies including prevention, intervention and compensation measures, the latter being aimed at re-engaging people who have left education and training with only lower secondary education or less. Compensatory routes e.g. second-chance education or non-formal learning accompanied by validation of prior learning and opportunities to re-enter education and training help young people to complete their education.

The European benchmark defined early school leavers as those aged between 18 and 24.

The 2013 Council Recommendation on establishing a Youth Guarantee specifically addresses the needs of NEETs (young people not in employment or education and training) and provides that all young people under 25 — whether registered with employment services or not — get a good-quality, concrete offer within four months of leaving formal education or becoming unemployed. The offer should be for a job, apprenticeship, traineeship or continued education and be adapted to each individual need and situation. Thus, it specifically recommends that early school leavers and low-skilled young people are offered routes to re-enter education and training or second-chance education programmes, address skills mismatches and improve digital skills. The Skills guarantee will provide support to early school leavers, in a broader sense (everyone having left initial education without an upper secondary education, no matter the age), but it will not be available to those who are eligible for support under the Youth Guarantee. It will complement these existing instruments by targeting basic literacy, numeracy and digital skills and at the same time by offering the possibility for acquiring an upper secondary qualification to all low-skilled adults.

3.3.5. Migrants

Whether we talk about new migrants or those already in Member States, EU and national policies need to ensure that enterprises and society benefit from the skills potential and qualifications of the immigrant workforce. This requires measures that help better match supply of skills with demand and make it easier for people to integrate into, and move within, the European labour market.⁶⁸

Guidance services should be the first support that third-country immigrants receive on arrival; they are in a position to promote the autonomy of the newly-arrived and to empower those already living in the country. They should offer familiarisation with legislation and institutions, with issues relating to housing, healthcare and social protection and other aspects to develop skills and knowledge that allow migrants to cope with their new reality. Information about the equivalence of qualifications, assistance during recognition processes, and support to get professional experience and skills validated are also crucial for successful integration into employment and education and training. A skills audit on arrival can identify if and what qualifications have been obtained by a migrant in the country of origin and, where relevant, propose their validation. Likewise, enlarged capacity in adult education would

⁶⁸ Working Paper No 24, Valuing diversity: guidance for labour market integration of migrants, Cedefop, 2014, Luxembourg: Publications Office of the European Union.

facilitate migrants' effective acquisition of the language of learning and employment in the host country.

A number of interesting examples of counselling, advice and mentoring activities have been developed using trained practitioners and other participants with immigrant backgrounds, such as the meeting point guidance centre in **Austria**, mentoring by older students in **Belgium** or the training programme run by immigrant entrepreneurs developed in **Germany**. In **Estonia** guidance support aims at the development of basic skills, information on host country education, training and other social support systems. New immigrants are enrolled in an adaptation programme which comprises language studies, improvement of professional skills and civic studies.

Support in the initial stages can help reduce the time until immigrants can use their skills in enterprises, avoiding unnecessary duplication of previous training; it can increase the likelihood of smooth integration processes and improve future career prospects in the new country. One example is the Integration through Qualification network (IQ network) in **Germany**, which supports 16 regional networks (such as the one in the Berlin, or NOBI) bringing together labour market stakeholders to promote the occupational integration of migrants. Guidance also plays an important role in empowering women, who may face specific challenges in labour market participation, and in reducing the impact of migrant youth disengagement from training. Effective guidance can also help reduce the risk of social tensions.

3.4. Expected impact and costs – an investment approach

Given the rapidly falling number of jobs requiring only low levels of skills⁶⁹, societies can no longer afford the persistently high shares of low-skilled and low-qualified individuals, which result in high social and economic costs now as well as in the longer term future. While investing in skills development also carries certain costs, such investment actually brings long-term benefits and has the potential to outweigh the expenditure.

It is a well-recognised fact that investing in skills has high individual and social returns. Higher skills make people more employable, adaptable and resilient in the labour market. This tends to raise permanent income for households and revenues for government (tax and social contributions) while reducing the need for welfare outlays. In this way, education and training supports the sustainability of public finances, notably in countries most affected by ongoing demographic change (aging of the population). In addition, good-quality education raises people's productivity and innovativeness, thus contributing to sustaining the EU's competitiveness in global markets.

Estimating the precise cost of such an initiative is not a straightforward exercise. First of all, while there is a substantial evidence base on the positive economic and social impact of adult up-skilling at the micro (individual) level, evidence at the macro (national or supra-national) level is much scarcer⁷⁰. Secondly, the level of actual costs depends on several factors: concrete policy choices to be made as regards the level of support provided; the existing level of skills of the targeted population; the number of individuals targeted by policy measures; the specific population groups prioritised; and the existing provision within a country etc. Only if all these factors were well defined, could a precise cost estimate be developed.

⁶⁹ See Figure 1.

⁷⁰ An in-depth analysis of adult learning policies and their effectiveness in Europe, European Commission, 2015.

Nevertheless, by making certain assumptions about some of these key factors some likely estimates (scenarios) of the potential cost can be made.

3.4.1. Potential costs of a Skills Guarantee

3.4.1.1. Defining the costs

When considering the design and implementation of the proposed Skills Guarantee, a series of costs would have to be considered. However, it should be highlighted that depending on the individual starting point of a country, not all of these costs will be new, some of them will already be embedded in the national measures targeting low-qualified people. Table 3 below provides an overview of potential costs to be considered for the delivery of the Skills Guarantee.

Table 3

Type	Description
Direct	Costs of implementation/delivery. This will include: <ul style="list-style-type: none"> • Staff costs • Overheads • Materials and equipment • Infrastructure (delivery venues) • Other costs (training)
	Costs to individual participants (e.g. travel costs, lost earning, etc.)
	Costs to employers (e.g. co-financing, obligatory training leave, etc.)
Indirect	Costs to other public services associated with the intervention (e.g. identification of other support needs or referrals/signposting to other services)
	Transaction costs to employers (e.g. costs associated with recruitment and retention if those employees who benefit from upgraded skills decide to seek alternative employment)
	Costs to non-participants or wider society (including opportunity costs and other externalities not mentioned above)

Source: Advice about the financial implications for initiatives to upskill low-skilled adults (VT/2016/007)

A usual approach in cost estimation can consider both direct costs, i.e. costs directly related to the actual delivery of the provision (e.g. skills audit, training etc.) to the individuals or to the setting up and management of the intervention as well as indirect costs – costs that might be caused by the policy intervention but not directly linked to the activities of the intervention. However no clear evidence was found suggesting that such a policy initiative is likely to result in high indirect costs. Consequently, it is presumed that indirect costs, if generated, would likely be limited⁷¹ and thus the selected approach of cost estimation primarily focuses on estimating the direct costs.

⁷¹ Advice about the financial implications for initiatives to upskill low-skilled adults (VT/2016/007)

Other considerations when estimating the potential cost of the initiative at EU and national level include:

- estimating the size of the target group;
- estimating the cost per participant for the different types of provision that would be available to the target group;
- estimating the level of policy ambition, i.e. the share of the target group aimed to be reached, the types and intensity of services to be provided, the types of skills to be provided (minimum level of skills or wider set of skills, or even a full EQF level 4 qualification)
- estimating the distribution of the intervention over time;
- estimating the distribution of costs between public and private as well as national and European costs, ensuring compatibility with the existing resources and availability in the EU budget.
- estimating the costs difference due to different level of prices and cost of living in the different Member States and regions.

Each aspect of the initiative is substantially dependent on the actual design of the modalities of implementation. Nevertheless, some rule of thumb estimation is possible based on existing examples of similar initiatives (though all of them are on a smaller scale, while the direction of scale effects – whether it could be cost enlarging or cost saving - is hard to estimate at this time) and based on assumptions regarding the definition of the target group at national level as well as the likelihood for taking up such upskilling offers.

The target group is likely to have low motivation (or capacity) to take advantage of the measures proposed. For example, in statistical surveys⁷² up to half of adults indicate that they are not interested and /or willing to undertake learning activities; this is likely to be even more pronounced among low-qualified adults. This has to be taken into account when estimating the actual share of the target group that it is realistically feasible and meaningful to reach (for example as regards individuals near retirement, inactive, etc.) via the activities of the initiative. It is also equally relevant when planning outreach activities to increase motivation and take-up. Several take-up scenarios have been developed, as described in the next section⁷³.

3.4.1.2. Estimating costs

It is not possible to develop an EU wide estimate catering for all the different variables that may influence the actual costs of the initiative. However, an attempt has been made to develop some indicative scenarios based on several core assumptions:

- The target population is set as the total population who have not attained an upper-secondary level qualification in the age group 25 to 64 in the EU28⁷⁴;
- The number of adults actually reached through policy interventions is estimated using three different scenarios:

⁷² e.g. Adult Education Survey 2007, 2011.

⁷³ Based on the European Labour Force Survey (LFS), on average 4.3% of all low-qualified adults participated in learning in 2015, with substantial variation between different EU Member States.

⁷⁴ The Skills Guarantee proposal is addressed to all individuals who have left initial education and training without achieving an upper secondary education, no matter the age, as long as they are not already eligible for support under the Youth Guarantee. The reference to the age group 25-64 is made only in the context of developing scenarios for evaluating possible costs of the initiative.

- for the baseline scenario taking the current share (4.5% in 2014) of low-skilled adults participating in education or training;
- for the medium take-up scenario using the current European benchmark on adult participation in learning, aiming to reach a 15% rate of participation;
- for the high take-up scenario setting the coverage rate at 25% (i.e. almost 6 times higher than the current annual participation rate)
- The direct cost per participant is estimated using three different scenarios and calculating the cost using an average of per-person cost of a selected ESF interventions implemented during the 2007-2013 multi-annual financial framework and focusing on low-skilled people:
 - Low-cost/ low intervention intensity scenario, assuming that the beneficiary will only need to go through skills recognition and validation, with an estimated cost of €495 per participant⁷⁵;
 - Medium-cost/ medium intervention intensity scenario, assuming that the intervention will include short and medium duration training without leading to a full qualification, with an estimated cost of €2,370 per participant⁷⁶;
 - High-cost/ high intervention intensity scenario, assuming that the education and training would focus on progress to an upper-secondary qualification, with an estimated cost of €4,180 per participant⁷⁷.

An important caveat is that estimates of cost per participant for low and high cost scenarios are estimated in each case using a selected large scale intervention of very similar construction, implemented in both cases in Portugal. It could be argued that due to the fact that labour costs and price levels in Portugal are lower than on average in the EU, and the programmes were implemented some years ago, the estimated EU figures are lower bound (i.e. conservative) estimates of likely costs. On the other hand, the medium-cost scenario is likely to be more representative of the average costs at the EU level, as interventions covered in the assessment were implemented in a variety of EU Member States. The total target population and its distribution by labour market status in each country is presented in table 4.

Table 4: Total low-qualified population and its distribution by employment status in 2014

	Share of low-qualified adults	Total number of low-qualified adults	Share of employed amongst low-qualified	Total number of employed low-qualified	Share of unemployed amongst low-qualified	Total number of unemployed low-qualified
EU-28	24.1	66,607,912	52.6	35,035,762	17.4	7,273,861
Austria	16.1	759,762	53.0	402,674	10.8	48,697
Belgium	26.4	1,575,612	47.5	748,416	14.3	124,553
Bulgaria	18.9	771,114	40.0	308,445	27.5	116,215

⁷⁵ Based on the estimated per participant costs of the RVCC (Recognition, Validation and Certification of Competencies) initiative in Portugal

⁷⁶ Based on the data from European Commission (2015) ESF 2001-2013 Ex-post evaluation: investment in human capital. The cost is based on the estimated average cost per participant for the cluster of activity focused on upskilling adults (cluster 10), comprising a mix of different types/intensity of interventions implemented in the EU.

⁷⁷ Based on the data from European Commission (2015) ESF 2001-2013 Ex-post evaluation: investment in human capital. The cost is based on the cost per participant of a large-scale (nation-wide) intensive intervention which offered the opportunity to obtain a qualification (Education and training courses for adults, Portugal).

Croatia	17.1	400,354	38.8	155,337	24.3	49,572
Cyprus	22.4	106,869	54.5	58,243	19.4	13,735
Czech Republic	6.8	406,948	43.0	174,988	20.7	45,685
Denmark	20.4	592,989	61.4	364,096	8.4	32,584
Estonia	8.8	63,276	60.9	38,535	11.9	5,2
Finland	13.5	384,114	53.5	205,501	12.5	29,275
France	23.3	7,915,496	53.3	4,218,960	14.8	720,967
Germany	13.1	5,838,630	58.0	3,386,405	12.0	457,908
Greece	31.6	1,880,609	46.9	882,006	27.6	335,892
Hungary	16.9	937,438	45.3	424,659	16.7	83,801
Ireland	21.2	526,988	46.6	245,576	18.7	54,492
Italy	40.7	13,570,338	49.6	6,730,887	15.2	1,199,265
Latvia	10.5	115,438	51.3	59,22	23.6	17,983
Lithuania	6.7	105,886	43.2	45,743	28.6	18,333
Luxembourg	18.0	56,446	60.9	34,375	7.7	2,749
Malta	57.8	134,753	52.6	70,88	7.7	5,86
Netherlands	24.1	2,169,462	58.8	1,275,644	10.1	140,259
Poland	9.5	2,084,021	39.3	819,02	18.0	171,828
Portugal	56.7	3,245,922	63.0	2,044,931	14.8	353,113
Romania	27.2	3,066,954	55.5	1,702,159	6.4	116,269
Slovakia	9.0	285,402	32.7	93,327	39.3	60,797
Slovenia	14.3	170,375	48.5	82,632	15.5	15,082
Spain	43.4	11,496,676	49.4	5,679,358	31.4	2,576,496
Sweden	16.3	800,491	63.6	509,112	13.9	82,497
United Kingdom	20.8	6,976,855	59.6	4,158,206	8.4	374,783

Explanatory note: The study used EU Labour Force Survey data for 2014.

Source: Advice about the financial implications for initiatives to upskill low-skilled adults (VT/2016/007)

Taking into account that it is unlikely that every low-qualified individual could be involved in education or training activities, the estimates of the likely take-up scenarios have been made based on current and possible participation rates in adult learning. The estimates per country for the total low-qualified population are presented in Table 5. In countries where the current rate of participation of low-qualified adults has reached the 15% benchmark (i.e. in Denmark and Sweden); the numbers for baseline and medium take-up scenarios are equal.

Table 5: Take-up scenarios among total low-qualified population

	Baseline scenario (4.5% of the target population)	Medium take-up (reaching 15% of the target population)	High take-up (reaching 25% of the target population)
EU-28	2,997,356	9,991,187	16,651,978
Austria	37,988	113,964	189,94
Belgium	48,844	236,342	393,903
Bulgaria	n/a	115,667	192,778
Croatia	n/a	60,053	100,088
Cyprus	1,496	16,03	26,717
Czech Republic	8,953	61,042	101,737
Denmark	137,574	137,574	148,247
Estonia	2,088	9,491	15,819
Finland	49,935	57,617	96,028
France	625,324	1,187,324	1,978,874
Germany	198,513	875,794	1,459,657
Greece	7,522	282,091	470,152
Hungary	18,749	140,616	234,359
Ireland	12,648	79,048	131,747
Italy	298,547	2,035,551	3,392,584
Latvia	2,54	17,316	28,86
Lithuania	n/a	15,883	26,472
Luxembourg	4,177	8,467	14,111
Malta	3,908	20,213	33,688
Netherlands	195,252	325,419	542,365
Poland	14,588	312,603	521,005
Portugal	139,575	486,888	811,48
Romania	12,268	460,043	766,738
Slovakia	n/a	42,81	71,351
Slovenia	5,282	25,556	42,594
Spain	448,37	1,724,501	2,874,169
Sweden	159,298	159,298	200,123
United Kingdom	537,218	1,046,528	1,744,214

Explanatory note: The study used EU Labour Force Survey data for 2014.

Source: Advice about the financial implications for initiatives to upskill low-skilled adults (VT/2016/007)

Based on the assumptions and data detailed above, the estimated cost scenarios targeting the whole low-qualified population and targeting only the low-qualified unemployed are presented respectively in Tables 6 and 7.

Table 6: Estimated cost scenarios targeting all low-qualified population

	Low cost (€495 per participant)	Medium cost (€2,370 per participant)	High cost (€4,180 per participant)
Baseline scenario (4.5% of the target population)	€1.48 billion	€7.10 billion	€12.53 billion
Medium take-up scenario (reaching 15% of the target population)	€4.95 billion	€23.68 billion	€41.76 billion
High take-up scenario (reaching 25% of the target population)	€8.24 billion	€39.47 billion	€69.61 billion

Source: Advice about the financial implications for initiatives to upskill low-skilled adults (VT/2016/007)

Table 7: Estimated cost scenarios targeting only low-qualified unemployed population

	Low cost (€495 per participant)	Medium cost (€2,370 per participant)	High cost (€4,180 per participant)
Baseline scenario (4.5% of the target population)	€0.16 billion	€0.78 billion	€1.37 billion
Medium take-up scenario (reaching 15% of the target population)	€0.54 billion	€2.56 billion	€4.56 billion
High take-up scenario (reaching 25% of the target population)	€0.90 billion	€4.31 billion	€7.60 billion
All unemployed scenario (reaching 100% of the target population)	€3.6 billion	€17.24 billion	€30.4 billion

Source: Advice about the financial implications for initiatives to upskill low-skilled adults (VT/2016/007)

When estimating the cost for targeting only low-qualified unemployed adults, a fourth scenario was developed, estimating the cost of covering the total (100%) population of low-qualified unemployed adults, showing the potential total cost of such action at €30.4 billion. However this estimate is likely to be less realistic to be achieved, as it would imply a 100 % take up in this target group and would require to involve in training the least motivated and hardest to reach adults.

The overall estimation exercise implies that the most likely, medium level take-up scenario with medium level cost would imply a total cost of €23.68 billion reaching out and up-skilling 15% of the total low-qualified population – i.e. around 10 million adults.

To put these figures into the perspective, existing European financing programme, i.e. ESF already reach-out to comparable (or larger) number of people targeted by its interventions.

In the new financial period of the European Social Fund, 2014-2020, funding under the thematic objective 'Investing in education, training and vocational training for skills and life-long learning' could be redeployed to support the implementation of the Skills Guarantee.

For example, during the 2007-2013 multiannual financial framework (MFF), the total amount allocated for ESF human capital development interventions was €51 billion. By the end of 2013 the actual spending was 33 billion (2 additional years were left for implementing and reporting the interventions from 2007-2013 MFF) which allowed to achieve some 49.7 million individual participations (some participants possibly participated in more than one activity, thus the number of unique individuals reached is likely to be smaller). Out of those, 2.7 million participations results in qualifications that have been attained partly or fully co-financed by the ESF.

For the MFF 2014-2020, there are three different ESF priorities, through which initiatives targeting low-skilled people could be supported:

- Social inclusion investment priority, with total allocated financing of €21.2 billion;
- Sustainable and quality employment investment priority, with total allocated financing of €30.8 billion;
- Education and vocational training investment priority, with total allocated financing of €27.1 billion.

Examples of similar interventions, implemented in different EU member states are presented in Table 8.

Table 8: Selected examples of relevant interventions

Skills for Life (UK, 2004-2007)	Training in basic skills (adult literacy, numeracy and ESOL from pre-entry to level 2 according to need).	Adults (16+): unemployed, low-skilled employees, groups at risk of exclusion.	Overall cost estimated at £5 billion since 2001. Programme engaged 5.7 million learners on 12 million courses with 7.6 million achievements. Cost per participant = £880. Cost per achievement = £660. Cost per qualification varied according to type (from £460 for numeracy to £1,030 for ESOL) and level (from £400 for L2 to £960 for entry level)
New Opportunities Initiative (PT, 2005-2010)	Adult education strand aimed to increase level of basic skills. This involved: - Recognition and validation of competences (RVC) - Education and training equivalent to upper secondary education	Adults (18+) who had not finished upper secondary education. Primarily unemployed/inactive but courses in evening also available for the employed.	Part funded by ESF (RVC). 70% of an € 800 million budget was allocated to adult education. At December 2010: there were over 167,500 enrolments; over 422,000 adults obtained a certification (362,588 had obtained RVC and 58,984 had completed courses), the number at secondary level was 113,000. Number of RVC centres increased from 98 in 2005 to 453 in 2010.

	Decentralised delivery approach which involves enrolment, diagnosis and undertaking the agreed plan (validation or enrolment in training).		
ESF Portugal - Education and training courses for adults	Its key aim was to provide adults with no or with inadequate qualification the opportunity to obtain adequate school education and professional training with the respective double-certification. It delivered training and additional learning assistance (advice, guidance, and certification).	Adults with low educational attainment. 95% of participants were at ISCED level 2 or below.	Cost per participant was €4,180, for 269,919 people. The total actual budget reached €1.12 billion.
ESF – France National OP Support to job mobility and employees outplacement	It aimed to support people in their retraining/return to job at local level. It delivered trainings and created networks between stakeholders.	It targeted workers in precarious situations.	Cost per participant was €6,390 for 102,975 participants, reaching an actual budget of €658 million.
Further vocational training (Germany)	Further training in the format of initial vocational training; continuing training to up/re-skill in own occupation/sector. Duration varies strongly depending on the type of training and whether or not it leads to a recognised VET qualification. The duration of the intervention is 5.3 months on average.	Unemployed and low-skilled adults, i.) not holding any formal qualification and work experience of at least 3 years or ii) holding a recognised qualification, but has not worked in the profession but instead worked in a job for unskilled workers for more than 4 years.	In 2013, training costs to the Federal Employment Agency were €4,400 on average per capita. This excludes unemployment benefits the participants receive. The total budget was €1.54 billion. Effectiveness: 46.5% of participants were integrated in the labour market 6 months after participation 151,000 individuals took part in 2013.

Source: Advice about the financial implications for initiatives to upskill low-skilled adults (VT/2016/007)

Member States can also apply for the Erasmus+ funds in order to build institutional capacity, to exchange good practice and organise peer learning/counselling together with other countries.

The projects of the National Coordinators responsible for implementing the European Agenda for Adult Learning, also financed by the Erasmus+ Programme, can be used to build or strengthen cooperation between all stakeholders and develop frameworks within which all stakeholders can work to support the Skills Guarantee.

All the evidence presented above confirms that the scope of the initiative, while ambitious, is feasible to implement and corresponds in terms of scale and ambition to some existing or previously implemented interventions in different EU Member States.

3.4.2. Potential Benefits

As mentioned before, low skills come with a high cost to society, economic growth and cohesion, as well as to individuals. They also have a correlation with the skills level of future generations and as such can perpetuate a low skills trap to the individual and to the society as a whole.

DG EMPL evidence shows that skills and capital investment are complementary. A better skill mix will therefore lead to higher better endowment of workers with capital. Both higher investment and better skills increase labour productivity – which is important as both labour demand and the development of wages crucially depend on higher productivity. Higher demand for labour will result in higher employment. As a result, with labour productivity and employment increasing, higher potential growth will be the outcome of investment into skills and education.⁷⁸ One can expect that in the course of the forthcoming demographic change (i.e., the projected decline of working-age population by some 0.4% every year over the next four decades), potential employment growth will slow down to some extent. The pressure to generate economic growth will hence increasingly rely on much higher productivity gains in the future.⁷⁹ It is therefore inevitable to invest in human capital now in order to pave the way for economic growth in the long run.

When reviewing the benefits of investing in second chance education and training programmes, the following types of benefits should be considered:

Table 9

Type	Description
Direct	Economic benefits to individual participants
	Social benefits to individual participants
	Economic benefits to employers
	Fiscal benefits to the state (such as the reduced need for other training/support, lower welfare payments and higher tax receipts related to those who gain employment or increase their wage as a result of the intervention)
Indirect	Wider economic benefits
	Wider social benefits
	Spillover effects on third parties

Source: Advice about the financial implications for initiatives to upskill low-skilled adults (VT/2016/007)

⁷⁸ The following articles provide model-based evidence on this transmission path:

European Commission, Employment and Social Developments in Europe 2015 (ESDE 2015), Chapter II.2 (p. 185-187) with a focus on the impact of labour migration of different education-levels:

<http://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=7859&furtherPubs=yes>

European Commission, Employment and Social Developments in Europe 2014, Chapter 2 (pp. 126ff) with a focus on the return on investing in human capital: <http://ec.europa.eu/social/main.jsp?langId=en&catId=89&newsId=2172&furtherNews=y>

European Commission, Employment and Social Developments in Europe 2013, Chapter 1 (LMM on pp. 104-109), where we focus on skills and training vis-à-vis demographics: <http://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=7684>

⁷⁹ Peschner, J., Fotakis, C., Growth potential of EU human resources and policy implications for future economic growth, DG EMPL Working Paper 3/2013: <http://ec.europa.eu/social/main.jsp?langId=en&catId=89&newsId=1970&furtherNews=yes>

OECD showed in its PIAAC report, hourly wages are strongly associated with skills proficiency levels, with an average median hourly wage of workers scoring at level 4 and 5 (PIAAC levels) 61 % higher than that of workers scoring at or below Level 1. Skills proficiency is also positively associated with other important aspects of well-being, notably health, beliefs about one's impact on political process, trust in others, and participation in volunteer or associate activities⁸⁰.

As to the wider economic and social benefits, Cedefop is currently finalising a study on the economic and social consequences of Europe having too high a proportion of low-skilled adults, especially in the workforce (Cedefop 2016, forthcoming). The ultimate aim of this study is to understand - and when possible measure in monetary terms - the benefits for society of re-engaging out-of-work adults in the labour market.

The study clearly confirms the positive consequences for individuals of being higher-skilled, as well as the positive impact of higher skills for individual employers:

- People with higher skills have a lower probability of experiencing spells of unemployment and inactivity and they are less likely to get trapped in low-skilled occupations when employed. Not only does a higher level of education matter, but also higher cognitive and digital skills play a significant role in reducing the probability of being out-of-work as well as experiencing wage penalties.
- Being higher skilled tends to be associated with a set of additional positive conditions for individuals, including better quality of health and lower crime rates compared to those with lower level of education.
- Finally, when it comes to the benefits of higher skills to businesses and employers, there is evidence of productive gains and higher return on investment related to higher level skills that benefit the individual firm, both directly and indirectly along the supply chain.

All these factors are inevitably associated with the benefits of investing in skills not only for individuals but also for economies and societies as a whole, including the reduced need for public expenditure on unemployment and social benefits, public health and security.

Due to the existence of the external costs and benefits of skills investment, which cannot be factored in when undertaking analysis at the individual level (microeconomic analysis), a further aggregate approach, macroeconomic analysis has been undertaken to estimate the benefits of up-skilling for the European economy.

Based on macroeconomic growth models, Cedefop has estimated the potential impact of higher level of skills on GDP growth per capita, using observed market data (GDP/GDP per capita) and other relevant macroeconomic variables from the European Commission's AMECO database and the Total Economy database of the Conference Board. The estimate shows that a one percentage point increase in the intermediate skills of the adult population (ISCED levels 3-4), could boost the GDP per capita growth rate by 0.99 percentage points. Since the estimate comes from cross-country regressions, it takes account of general economic conditions and unemployment levels, which affect returns to skills and the micro-economic decision to invest, as well as externalities resulting from diffusion and spill-over effects.

⁸⁰ OECD Skills Outlook 2013, First results from the survey of Adult Skills

Using this empirical evidence, Cedefop has simulated the long-term output growth based on higher level skills. This simulation was developed taking into account CEDEFOP's scenarios as to the decrease of the share of low qualified adults by 2020 and by 2025.

The share of low-qualified people has been falling continuously by about 0.73% percentage points per year during the last decade (this is also referred to below in the Cedefop research as “baseline scenario”). This is primarily due to the fact that up until now cohorts entering the labour force have on average higher level of education and skills as compared to cohorts who leave the labour force for retirement. However this natural increase in the level of education/skills among the labour force will not in any near future solve the underlying challenge of having a large number of adults with only low level of skills, for these reasons:

- A substantial share (20.8% in 2015, based on EU LFS) of low-qualified adults belong to prime-age group 25-54;
- A substantial share (17.3% in 2015, based on EU LFS) of young adults (i.e. aged 20-24) also still enter the labour force with only a low level of qualification;
- The rate of up-skilling of the labour force is slowing down as the difference in educational attainment between cohorts leaving the labour force and cohorts entering the labour force get smaller.

If no additional action is taken, based on the latest available Cedefop skills forecasts, the share of low-qualified adults within the working age adult population in the EU would still be 18.6% in 2020 and 16.6%.in 2025.

By measuring the economic benefits of higher skills to the European economy in terms of increased output growth, CEDEFOP analysis shows that, compared to a baseline scenario of the continuously decreasing share of low-qualified adults, a further reduction in the share of low-qualified people in the working age population by 4 percentage points (so that, for example, in 2020 the forecast share of low-qualified adults would fall from around 18% to around 14%), would result in an increase of EU annual GDP of around € 350 billion.

The estimated reduction by 2020 in the share of low-qualified adults in the working age population from 18% to 14%, as quoted above in the Cedefop research, at the same time means a reduction in the absolute number of low-qualified adults of around 20%. This number can be compared to the number of low-qualified adults to be targeted in the cost - estimation scenarios. Up-skilling 20% of the low-qualified adult population would correspond to a mid-point between the medium (upskilling 15% of all low-qualified adults) and the high (upskilling 25% of all low-qualified) take-up cost-estimation scenarios.

The evidence presented above shows that, whichever scenario is adopted, and whichever level of intervention is chosen, the cumulative benefits would vastly outstrip the costs. Thus, as compared to any of the cost scenarios, evidence seem to suggest that any investment in skills would very likely result in a substantial positive net return on such investment.

Conclusions

In conclusion, the proposed Skills Guarantee is intended to bring significant benefits to individual, to society and to the economy. As is pointed out by the OECD, “investments in improving adults’ proficiency in literacy, numeracy and problem solving in technology-rich environments may have significant benefits. Independent of policies designed to increase participation in education and training, improvements in the teaching of literacy and numeracy in schools and programmes for adults with poor literacy and numeracy skills and limited familiarity with ICTs may result in considerable economic and social returns for individuals and for society as a whole.”⁸¹

⁸¹ OECD Skills Outlook 2013, first results from the survey of adult skills. p 246. OECD, Paris. 2013



Brussels, 10.6.2016
SWD(2016) 195 final

PART 3/4

COMMISSION STAFF WORKING DOCUMENT

ANNEX II

Results of the public consultation on the EU's modernisation agenda for higher education

Accompanying the document

Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions

**A NEW SKILLS AGENDA FOR EUROPE:
Working together to strengthen human capital, employability and competitiveness**

{COM(2016) 381 final}

Table of Contents

1.	INTRODUCTION.....	1
1.1	Higher education matters.....	1
1.2	Time to take stock of progress and identify next steps.....	2
2.	KEY CHALLENGES FOR HIGHER EDUCATION IN EUROPE.....	3
3.	PRIORITY AREAS FOR ACTION ACROSS HIGHER EDUCATION.....	7
3.1.	Helping students to acquire the right knowledge and skills.....	8
3.2	Higher education's role in innovation.....	13
3.3	Strengthening research.....	15
4.	WHERE AND HOW THE EU CAN ADD VALUE.....	16
	ANNEX 1.....	18

1. INTRODUCTION

This annex sets out the key findings of the public consultation on the future of the EU's agenda for the modernisation of higher education systems¹. The results of the consultation underpin the specific initiatives related to higher education presented in the Skills Agenda and will inform the EU's future strategy for the modernisation of higher education.

1.1 Higher education matters...

Demand for highly qualified people and innovative thinking is growing...

1. The evidence underpinning the EU's new Skills Agenda is clear. Europe needs well qualified people with high-level skills if it is to face to up the social and economic challenges of the 21st century. Current labour market projections indicate that over 49% of all job openings in the EU – for new jobs and replacement of people who retire - will require high-level qualifications by 2025². This includes people with vocationally and academically oriented undergraduate degrees, Master's degrees and doctoral-level education. Higher skill and qualification levels in a society are strongly associated not only with higher rates of economic growth, productivity, innovation and job creation, but also with broader social outcomes, including better health and greater levels of social and political engagement³.

...and our higher education systems are a crucial part of the answer.

2. Europe's higher education systems have already allowed more Europeans to gain a high-level qualification than ever before. The combination of teaching, research and cooperation with wider society in higher education institutions creates unique environments for nurturing talent and stimulating the creativity and innovation on which we depend. In many ways, European higher education is a success. But, no one would deny there are serious challenges and areas where improvement is needed for our higher education institutions - and systems more broadly - to deliver their full potential.

The modernisation agenda has provided an effective framework for EU support...

3. The Agenda for the modernisation of Europe's higher education systems has provided the strategic EU-level policy agenda for the higher education sector since its adoption in 2011. It complemented the headline target for tertiary education attainment target agreed by Member States⁴ and broad policy messages about higher education that formed part of the EU's overall Europe 2020 strategy and specific framework for cooperation in education and training, ET 2020. In practical terms, the Communication, endorsed by the Council in November 2011, did three main things:

¹ The current modernisation agenda is presented in COM (2011) 567 final

² CEDEFOP (2016) forthcoming

³ See, for example, OECD (2015) Education at a Glance 2015, pp.152-164

⁴ The target is for 40% of the age group 30-34 in the EU to have a tertiary level qualification or equivalent by 2020. Tertiary education is defined to encompass ISCED levels 5 (short-cycle qualifications), 6 (Bachelor and equivalent), 7 (Master and equivalent) and 8 (Doctoral education). In Germany, the national target has been defined to include some ISCED 4 (post-secondary, non-tertiary) qualifications.

- a) It set out the EU policy position on the way higher education should develop to support the strategic goals of jobs, growth and inclusion;
- b) It provided general recommendations for governments and the higher education sector;
- c) It set out a programme of EU actions, presenting and linking activities in the framework of Europe 2020, ET 2020 and the funding programmes (Erasmus+, Horizon 2020 and European Structural and Investment Funds).

...by identifying the key priorities for European cooperation...

4. The 2011 agenda contains five key priorities, which have guided EU actions in higher education since 2011: a) raising graduate numbers (in line with the 40% target) through widening access and reducing drop-out; b) enhancing the quality and relevance of learning and teaching; c) promoting more international cooperation and mobility; d) strengthening the knowledge triangle (education, research, innovation) and; e) promoting adequate and efficient funding and effective governance.

...and helping to focus efforts for change.

5. The Agenda has provided a central reference point for EU policy in higher education, informing, for example, work on evidence-building and transparency (studies, U-multirank, European Tertiary Education Register), European semester analysis and country-specific recommendations, the specific work programme for policy cooperation in higher education, the focus of calls for proposals in Erasmus+ and the design of ex-ante conditionalities and, more indirectly, Operational Programmes in the new Structural and Investment Funds.

But it is the right time to take stock and look to the future.

6. Reform in higher education is by its nature a medium to long-term process, with impacts taking time to emerge. However, since 2011, higher education and the world in which it operates have changed. In light of this reality, and with a view to ensuring EU strategy and activities to support the higher education sector remain as relevant as possible, the Commission launched a public consultation exercise to take stock of the state of higher education in Europe and identify areas where focus of EU action should lie.

1.2 Time to take stock of progress and identify next steps...

A wide-ranging public consultation...

7. The consultation and review process has involved a public online questionnaire – open to all respondents - and a targeted questionnaire addressed to Member State authorities and key Higher Education stakeholders in the EU. Both these consultation processes were launched in November 2015 with a deadline for submission of responses at the end of February 2016. Both the online questionnaire and the targeted questionnaire asked respondents for their assessment of the challenges facing higher education in Europe, the priorities for those in charge of higher education in general and the specific areas where the EU could and should act to add value.

...has generated a large volume of replies and valuable feedback.

8. The online consultation, which was widely disseminated via governmental and stakeholder networks, received 1485 contributions, 1005 from individuals (mainly people working in educational institutions and current students or recent graduates) and 480 from representatives of an organisation (mainly higher education institutions - HEIs)⁵. 49 position papers were received in response to the targeted consultation (30 from government authorities and 19 from national and EU level stakeholder organisations). See Annex 1 for more details of respondents.

9. In addition to these questionnaire-based approaches, the views of stakeholders in higher education were gathered through a series of *ad hoc* events, related to the future of higher education in Member States, culminating in a conference on the future of higher education organised by the Dutch Presidency in Amsterdam on 9 March 2016.

This paper summarises main messages from the consultation, with a focus on skills.

10. The consultation focused on all aspects of the higher education sector in Europe, covering three core missions of higher education institutions: a) teaching and learning; b) research and; c) innovation and engagement. The results and feedback received from the different consultation methods have been systematically analysed. In what follows, we provide an overview of the key points emerging from the consultation, with specific attention to the messages relating to higher education's role in skills development.

2. KEY CHALLENGES FOR HIGHER EDUCATION IN EUROPE

11. Both the online consultation and targeted call for position papers invited respondents to identify the main challenges they see facing the higher education sector in their countries or in Europe more generally. The objective of these questions was to seek views on both the major trends impacting on the role and objectives of higher education and the practical constraints and challenges that affect higher education institutions' ability to respond to these challenges and deliver the outputs and outcomes that society may wish to see.

Technology and globalisation are changing higher education's operating environment...

12. At the macro level, the twin forces of **globalisation and digitalisation** emerged as important "mega trends" affecting higher education institutions directly and the world for which they are preparing graduates and in which they are undertaking research, innovation and civic engagement activities. Both international interdependency and technological change are seen by many respondents as **increasing the rate of change in economic and social structures** (the size and type of businesses that exist and employ graduates or the make-up of society) and occupational profiles (the types of job that will exist in the future). One national rectors' conference highlights, for example, that 30% of today's occupations did not exist 20

⁵ While this mode of online consultation used does not involve representative sampling of respondents, the large number of respondents overall, good geographical spread in responses and the large number of responses from higher education institutions means the results provide a solid body of viewpoints.

years ago and that this rate of change will only increase, as many routine jobs are rendered redundant by technological advancement. Higher education is thus seen to be operating in a highly **complex, dynamic and uncertain environment**, which affects how we must approach planning and strategy-setting.

...while graduate employment outcomes are a concern now and in the longer term.

13. Another frequently recurring theme was the legacy of the economic and financial crisis, which has left Europe with uneven and sometimes sluggish economic growth and has led to or exacerbated **(graduate) unemployment and under-employment**⁶ in many parts of the Union⁷. In this connection, many respondents to both the targeted and online questionnaires raised the question of the **match or mismatch** in the knowledge and skills with which graduates leave higher education and those required by the economy and society more generally. In response to the online survey, **71% of students or recent graduates** and **61% of higher education institution employees** disagreed with the statement that "*there is a good match between the supply of higher education graduates and the knowledge and skills the economy needs*". Those responding on behalf of higher education institutions were more positive, with only 46% disagreeing with the statement (see Figure 1). Respondents (all categories together) from central and southern Europe were considerably more negative than those from northern and western Europe. However, it is impossible to say whether these views are driven primarily by people's assessment of the effectiveness of higher education or broader labour market and macro-economic conditions⁸.

⁶ Graduates working in jobs where they cannot fully use their high-level skills.

⁷ This concern is not only highlighted by respondents from countries most seriously affected by the economic crisis. **Denmark's** position paper, for example, points to the findings of an independent Expert Committee on Quality in Higher Education in January 2015, which found strong evidence of skills mismatches affecting higher education graduates, particularly from certain disciplines.

⁸ Distinguishing the relative contribution of higher education and labour market conditions in to graduate employment outcomes is complex in general – which is why better information is required.

Figure 1: Response to the statement "There is a good match between the supply of higher education graduates and the knowledge and skills the economy needs"



Source: online consultation survey

14. In addition to the overall perception about mismatch, a majority (55%) of online survey respondents from all categories believe that the **people designing higher education courses are insufficiently aware of likely skills needs in the labour market**. As we will discuss in the next section, enhancing skills development in specific areas (including digital skills, for example) and addressing mismatches emerged very frequently among the priority areas respondents identify for action.

Higher education's potential contribution to innovation is under-exploited...

15. Higher education's contribution to economic development and well-being is not limited to supplying qualified people to the *established* labour market, but is also seen by many consultation respondents to result from **HEIs' role in promoting innovation** (creating new products, services and processes), which in turn creates *new* job and wealth-creation opportunities. Particularly, but not exclusively, respondents from southern and central Europe highlight in their position papers a need to **increase innovation in national and regional economies** to create jobs and compete internationally and a need to **harness better the potential of HEIs** in this process. In the online survey, only 20% of all respondents "agreed strongly" with the statement "HEIs play a strong role in contributing to innovation at regional and national level", while nearly 40% disagreed "strongly" or "to some extent". This finding is reflected, to some extent, in research and transparency exercises undertaken using conventional measures of innovation⁹. However, defining and measuring institutions' contribution to innovation is complex and an area where a better understanding and more sophisticated metrics are needed¹⁰.

...and institutions are grappling with how best to cater to new population groups.

⁹ U-Multirank, for example, uses co-publications and patents as indicators of higher education institutions' capacity for knowledge transfer and innovation.

¹⁰ A current EU-supported study is examining precisely this question: how can the broader contribution of higher education institutions to innovation better be captured?

16. Alongside the frequent focus on the economic contribution of higher education, many consultation respondents raised challenges related to **social inclusion**, in a broad sense. Many position papers highlighted how the expansion of higher education in recent years has increased the **diversity of the student body**, which brings with it new challenges. At the same time, many papers also acknowledge further work is needed in the area of **widening access** to higher education¹¹, while rapid change in the economy will only increase demand for **lifelong learning** from older learners in the future. Both these trends are seen to call for more **tailored approaches to teaching and learning** and better **student support and guidance mechanisms**, in particular, as several respondents from both the government and higher education sectors note, to ensure students from different backgrounds are as well-placed as possible to complete their studies¹². Several consultation responses explicitly raise the challenge for higher education of responding to the most **recent waves of migration** within Europe, noting the need to support the speedy integration of these new population groups, including better academic recognition, language learning, flexible access routes and, where relevant, conversion and "top-up" programmes.

Technology is changing higher education, although is under-utilised...

17. A number of position papers point out that the technological evolution driving change in the wider economy is also impacting on the activities of higher education institutions in teaching and research. In the online survey, a significant minority (45%) of respondents indicated that **technology was not yet being used effectively** to improve teaching and learning¹³. Elsewhere, governments and stakeholder organisations highlighted how a shift to **Science 2.0**¹⁴ or **Open Science**¹⁵ and increasing concentration of research activities in certain fields on existing patterns of may radically change existing research and publication paradigms in higher education. In a connected point, over half of respondents to the online survey disagreed with the statement that "*researchers receive the support that they need from their institutions to reach their potential*", while many position papers noted the challenge of preparing the researchers of the future.

...but funding conditions for the higher education sector are challenging in many places.

18. A final, but frequently raised, issue affecting higher education raised in the consultation responses is a **perceived inadequacy of current funding levels**. In particular, many higher education stakeholder organisations, but also some governments, note that funding levels to

¹¹ In its position paper, **Scotland**, for example, highlighted its new "Blueprint for fairness", published in March 2016, which seeks to improve access to higher education for under-represented groups.

¹² Several position papers note that students from lower socio-economic and some specific ethnic groups have particularly low completion rates in higher education. This is, for example, the case for Roma students in a number of Member States.

¹³ A survey of higher education institutions by the European University Association (EUA) in late 2013 found that 91% of surveyed institutions were using blended learning (combining online provision with conventional teaching), but that only 20% were using these technologies across all disciplines.

http://www.eua.be/Libraries/publication/e-learning_survey.pdf?sfvrsn=2

¹⁴ A new approach to science that uses information-sharing and collaboration made possible by network technologies

¹⁵ The global shift towards making research findings available free of charge

higher education have often been reduced through fiscal consolidation during the economic crisis and/or have not kept pace with expanding student numbers and increased demands on the higher education sector. Only 20% of respondents to the online survey felt that HEIs "receive enough funding overall for them to fulfil their missions effectively". 43% "disagreed strongly" with this statement.

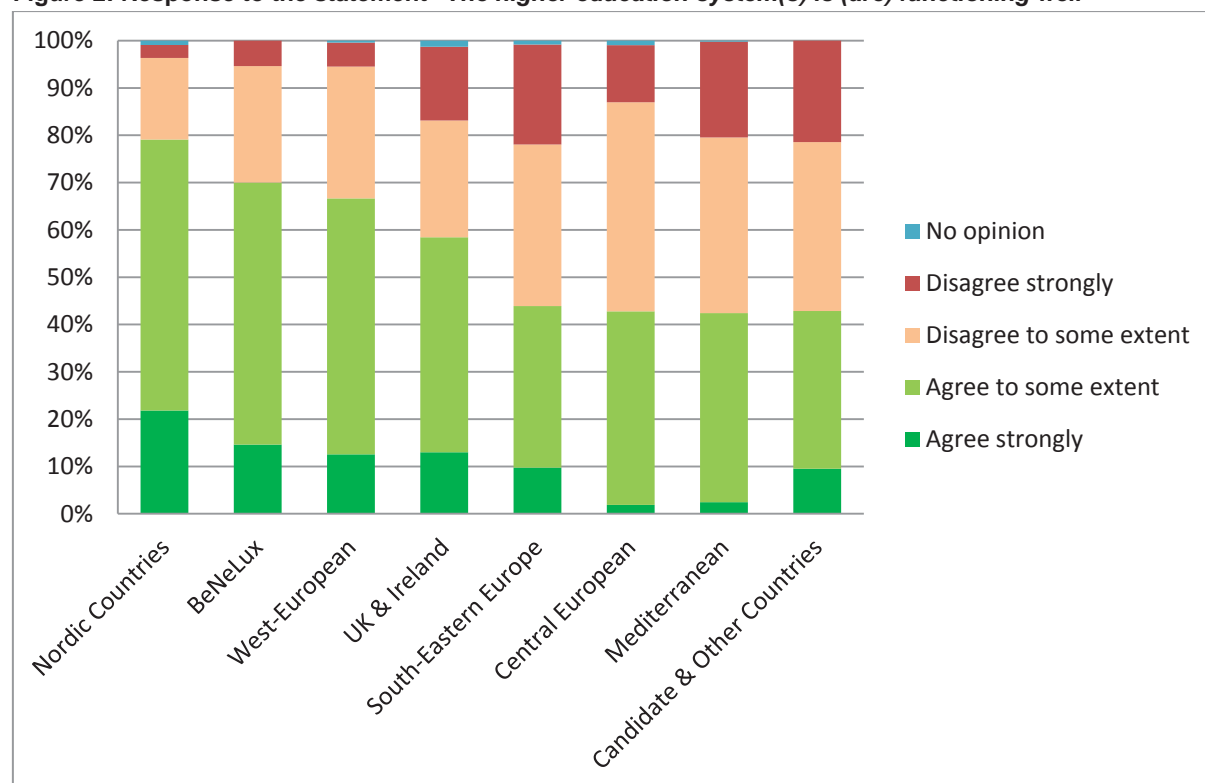
3. PRIORITY AREAS FOR ACTION ACROSS HIGHER EDUCATION

19. The online survey and targeted consultation asked respondents to identify or comment on the importance of different priority areas where institutions and governments should concentrate efforts to effect change in higher education, taking into account the core missions of the sector in a) teaching and learning; b) research and; c) innovation and engagement.

Higher education is crucially important, but there are problems to address...

20. An important overriding point raised in the consultation responses is the **importance of higher education as a driver of social and economic progress**. As one position paper put it, "in the 21st century, the importance of higher education as a motor of individual emancipation and [social and economic] advancement remains undiminished". At the same time, in the online survey, opinion on **the current state of European higher education** was divided. While over half of respondents agree strongly or to some extent that their higher education system (or systems in Europe in general) were "*functioning well*", a significant minority (47%) disagreed to some extent or strongly with this assessment. The highest levels of dissatisfaction in this regard were found in central and southern Europe (see Figure 2). An even stronger pattern emerged in terms of the position of higher education in public policy: **65% of all survey respondents disagreed with the statement that "higher education receives adequate attention in government policy"**.

Figure 2: Response to the statement "The higher education system(s) is (are) functioning well"¹⁶



Source: online consultation survey

21. The following sections review key findings from the consultation in relation to teaching and learning, research and innovation.

3.1. Helping students to acquire the right knowledge and skills

22. Helping students to acquire the right knowledge and skills emerged as the single most important priority from the different strands of the public consultation. Responses addressed both the questions of a) which knowledge and skills graduates need and b) what should be done to help students acquire this knowledge and these skills sets.

¹⁶ **BeNeLux:** Belgium, the Netherlands & Luxemburg; **Central European Countries:** Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia & Slovenia; **Mediterranean:** Cyprus, Italy, Malta, Portugal & Spain; **Nordic Countries:** Denmark, Finland, Iceland, Norway & Sweden; **South-Eastern European Countries :** Bulgaria, Greece, Romania; **West European Countries:** Austria, France, Germany, Liechtenstein, Switzerland; **Candidate Countries:** former Yugoslav Republic of Macedonia & Turkey; **UK and IE:** Ireland & the United Kingdom;

Transversal skills are increasingly important alongside subject knowledge...

23. While generally acknowledging the importance of subject or profession-specific knowledge and skills, many consultation responses highlighted the **growing importance of a range of "transversal", "soft" or "21st century" skills**, such as critical thinking, problem-solving or communication. In the online survey, 84% of respondents agreed that higher education courses should focus more on developing soft skills. Some papers referred to the concept of the **"T-shaped" skills profile**, combining and in-depth knowledge of a specific specialisation (the stem of the T) with a broad set of transversal

BOX 1 - What do we know about graduates' skills?

The consultation reveals a strong consensus that higher education **students need to acquire the "right" sets of skills** during their studies and this includes a broad set of transversal competences, as well as subject specific knowledge.

However, our knowledge of the skills with which graduates actually leave higher education is very limited, as each institution assesses its students in its own way. Studies like the OECD's PIAAC survey of adult skills have revealed **very large differences in the basic skills higher education graduates** possess. But without better comparable assessment methods and the results of these, it is hard to test this further, to identify problem areas and take necessary action.

This is why in the skills agenda the **Commission is supporting a project to develop competence assessment frameworks** for different higher education disciplines, in cooperation with European higher education institutions. The objective is to allow comparable assessment of students' and graduates' skills taking into account differences between subject areas, with a view to supporting teachers and others involved in delivering higher education.

skills. Key arguments for this view, emerging in many position papers and online responses are, first, the increased uncertainty about future professions and career paths noted above, which means people need skills that can be applied in different fields, and, second, the broader **"formative" role of higher education**. One position paper argued that higher education should enable each student to get the best out of themselves and, to do this, should *"alongside "qualification", pay attention to the socialisation and personal development"* of students.

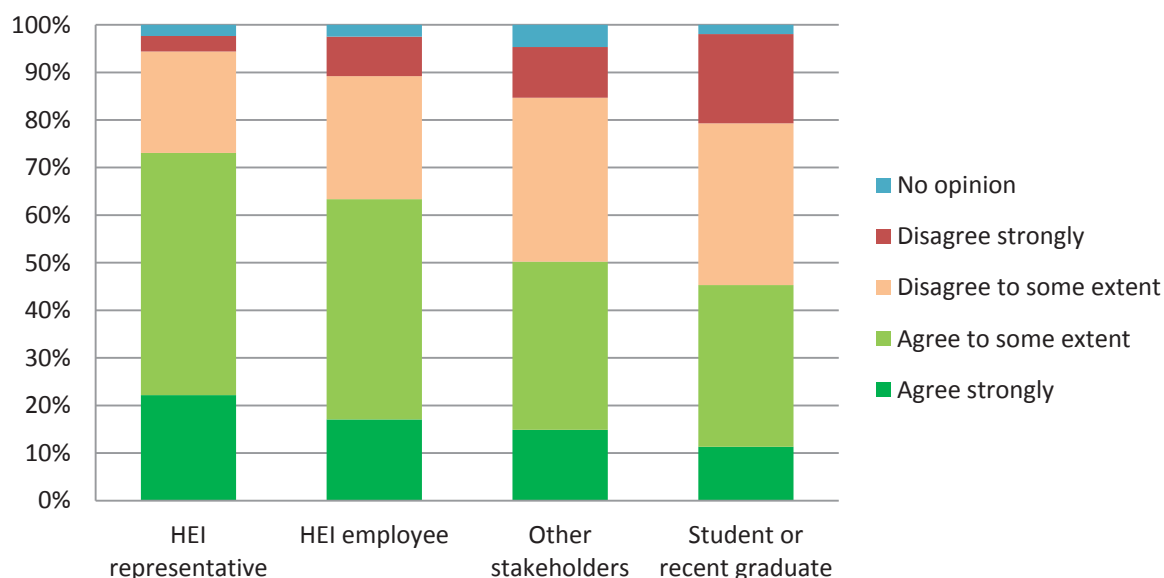
...while digital literacy, training ICT professionals, and new perspectives on STEM deserve particular attention...

24. A second area where skills gaps are highlighted in the consultation responses encompasses the broad fields of **Science Technology, Engineering and Maths (STEM)**¹⁷, where many national authorities and stakeholders see a need to strengthen high-level skills provision. In particular, several contributions note a specific need for more **ICT specialists** and for **students across the board** to acquire better digital skills. In response to the statement

¹⁷ Referred to as Maths, Informatics, Natural Sciences and Technology (MINT) in some papers.

"higher education courses are effective at helping students to develop digital skills and digital literacy", the online survey revealed divergent opinions: while over 70% of representatives of HEIs agreed with this (strongly or to some extent), less than 45% of students and recent graduates shared this view (see Figure 3). A number of position papers also highlighted the comparative complexity and diversity of views relating to the science and technology issue, some, for example, arguing for approaches that **combine science, technology and arts and humanities**¹⁸ (summarised in the acronym STEAM, where the A stands for "Arts"). One of the factors underlying shortages of particular types of STEM skills is a generalised under-representation in women across many core STEM disciplines across the EU. Furthermore female STEM graduates are less likely to go on to work in STEM occupations than their male counterparts¹⁹. Tackling gender stereotyping and promoting a better gender balance in certain fields were issues raised by a number of consultation respondents.

Figure 3: Response to the statement "Higher education courses are effective at helping students to develop digital skills and digital literacy"



Source: online consultation survey

...and higher education should foster language skills and active citizenship.

25. A more limited number of position papers argued specifically that higher education should do more to promote other skills, competency or attribute sets, including **language skills** (necessary for mobility in a globalised economy, as well as intercultural understanding) and the capacity for **engaged and active citizenship**. When asked about the latter issue, 40% of respondents to the online survey *disagreed* to some extent or strongly with the view that "higher education courses help prepare students to contribute actively to society". A number of consultation responses included concrete suggestions for fostering active citizenship, in

¹⁸ Some papers also took pains to stress the value of arts and humanities subjects. In **Norway**, for example, a working group is examining the particular contribution of research in the arts and humanities and how this can be better rewarded. **Belgium (FR)** highlights the Numediart project at the University of Mons, which links 70 researchers from 10 departments and 5 faculties across different disciplines.

¹⁹ OECD (2012) Closing the Gender Gap: Act Now <http://www.oecd.org/gender/closingthegap.htm>

particular through **better cooperation between higher education in all disciplines and the social and voluntary sectors**, including in curriculum design and delivery²⁰.

Consultees highlighted many mechanisms to support skills development in higher education.

26. Moving to the question of *how* higher education students can and should be helped develop the right knowledge and skills, consultation respondents highlighted a series of approaches, the most frequently cited of which are summarised in what follows.

At a system level, diversity in the types of programme on offer is important...

27. Although 65% of respondents to the online survey agreed that "*a well-balanced range of academic and professionally oriented study programmes is available*" in their systems, many position papers stressed the **importance of increasing the diversity** (and quality) of **higher education programmes**, to be able to respond to diverse student needs and diverse demand for skills. Many position papers placed specific emphasis on increasing the offer of courses for lifelong learning or Continuing Professional Development (CPD).

...and provide far better guidance to (prospective) students on study choice.

28. While respondents to both the online and targeted consultation appear to be **sceptical about very detailed steering** of students between disciplines (over half of respondents to the online survey disagreed with the idea that students should be steered *away* from courses with no clear link to the labour market), there is **clear support for better guidance** to prospective students about study choices.

BOX 2 - What do we know about how well graduates succeed?

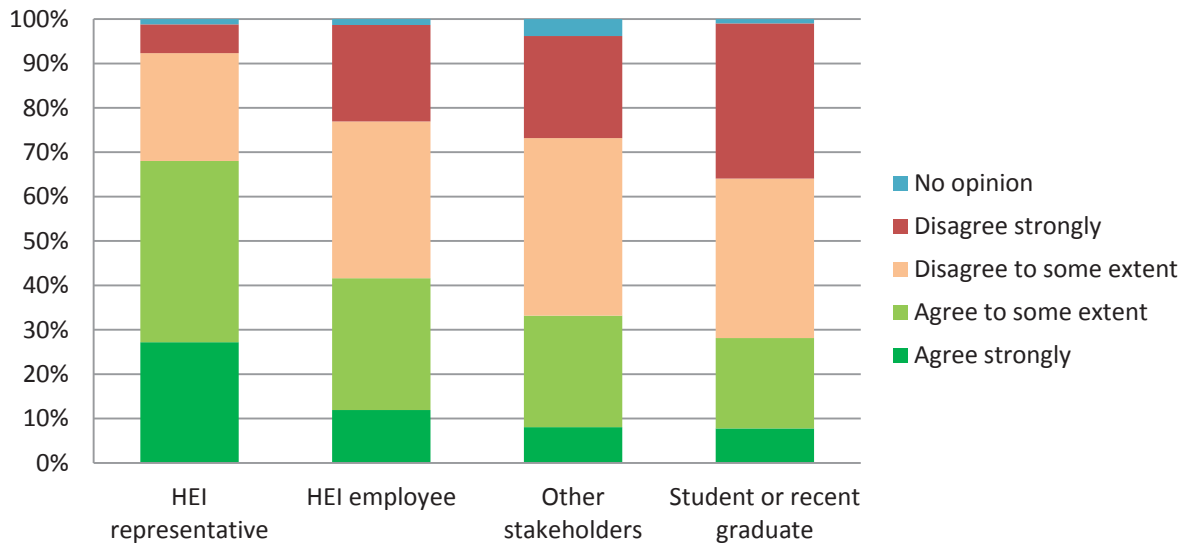
The consultation also points to the importance of better **feedback from "the real world"** about how well different types of higher education prepare students (see also paragraph 13 above). Information from past graduates is useful to get an ex-post assessment of the relevance and effectiveness of particular types of programme. This information can inform those designing and delivering higher education programmes (helping them to adjust content or teaching techniques) and people deciding on which course of study to follow (see paragraph 28 to the left). It can also provide feedback on how the world of work is changing in the dynamic environment mentioned earlier.

A number of EU Member States and HEIs already undertake some form of graduate tracking, using either graduate surveys or administrative data (student, social security and tax registers). However, this practice is **far from universal in the EU** and the information collected is **not comparable** between countries. To help address these existing information gaps and improve knowledge of how graduates progress professionally, how they view the relevance of their studies and how they use their skills, the **Commission is proposing in the Skills Agenda a package of actions to enhance the availability of graduate tracking information**. This includes proposals for a European Graduate Study and increased cooperation between national data collectors.

²⁰ **The Netherlands** highlighted, for example, the *Springlevende Wijk* (Living Communities) initiative, which provides a framework for students to contribute directly to local development projects in major cities.

While around 50% of institutional respondents agree that "*students are supported well to make informed choices about what to study*", this **proportion falls to below 30% for current and recent graduates students completing the survey**.

Figure 4: Response to the statement "*Prospective students are supported well to make informed choices about what to study*"



Source: online consultation survey

Provide more support for teachers in higher education...

29. A consistent message from the different elements of the consultation is that more should be done to support teachers and **reward good teaching** in higher education. 93% of respondents to the online survey agree that **training available to teaching staff** in higher education should be improved, while around 67% of respondents *disagree* with the statement "*the way teaching is funded rewards quality*". These two issues of training and creating rewards and incentives for teaching are recurring themes in many position papers and consultation meetings, and emerge as areas where further work is required.

... and create better links with the world of work.

30. Many position papers explicitly argue for increasing the links between higher education and other economic actors, including through involvement in the **design and delivery of programmes** and the provision of **work-based learning opportunities**. Several papers stressed that cooperation between higher education and employers (private or public) should be a two-way process, not just a question of higher education *responding* to demands of employers. In response to the online survey, 86% of respondents agreed (56% "strongly") that more should be done to **increase cooperation between higher education and business** in the design and provision of courses, while 90% agreed (62% "strongly") that there should be more opportunities for students to gain **work experience** during their studies. Increased cooperation with businesses and other outsider organisations is also widely seen as a factor in increasing the contribution of higher education institutions to innovation (see section 3.2).

Internationalisation and mobility are important for quality...

31. Several national position papers stressed the emphasis placed in increasing internationalisation (international links, presence of international staff, students and researchers) and student mobility (particularly outward) within their own national strategies. Both are seen as **factors for quality and relevance** in education, with mobility in particular seen as a means to help students acquire skills needed for an internationalised world. 89% of online survey respondents believed that that the **presence of foreign students is positive** for higher education courses. 92% of respondents argued more should be done to attract more international staff and researchers to institutions, while 90% believed that, at least to some extent, more should be done to support short-term mobility abroad in higher education courses.

...while flexibility and accessibility are important across the higher education system.

32. Two further areas for improvement, identified in a number of position papers were, first the **transitions and pathways** between different parts of the education and training system and, second, links between disciplines and fields (**inter and trans-disciplinarity**). The references to transitions and pathways encompass link between higher education and schools, flexible pathways between different parts of the post-secondary system (for example between vocational and higher education systems) and recognition of prior learning, as a way into higher education. All of these issues are in some way linked to creating a more **flexible and accessible higher education system**. The potentially positive impact of inter-disciplinarity – creating or facilitating links between different disciplines - is raised by several papers, which highlight the need to prepare students for an increasingly interdisciplinary world of work. In the online survey, 80% of respondents agreed that more should be done to promote interdisciplinary courses.

3.2 Higher education's role in innovation

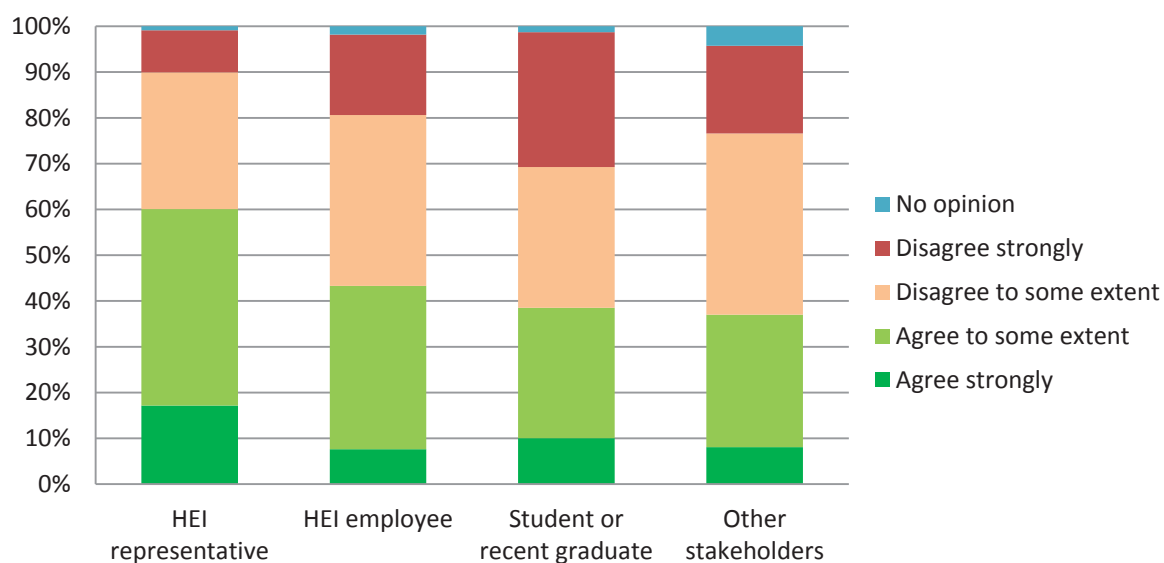
Creativity and entrepreneurial thinking are crucial for innovation...

33. Many respondents to the public consultation also stressed that both higher education institutions and students should be supported to become more innovatively minded: to respond to a globalised and digitalised world in which, as one respondent put it, "*routine and stability have to increasingly make room for creativity and flexibility*". Some responses argued for a broader **conception of innovation** that should include both an **entrepreneurial mind-set** (the potential to develop and deploy ideas to reach short to medium term goals, often, but not necessarily with a commercial objective), as well as a **creative mind-set** with a long-term focus on seeking sustainable solutions across the disciplinary boundaries. Several position papers highlighted the important contribution of **higher education graduates in setting up new businesses** (examples of both entrepreneurship and innovation). As graduates often choose to start their businesses where they studied, the potential of this source of regional innovation should not be under-estimated.

...but these are not seen as strengths of European higher education.

34. If innovation depends to a large extent on individuals' capacity to be creative, many respondents to the online survey cast doubt on the effectiveness of current higher education programmes to help students to develop their abilities in this area. Fewer than half of respondents overall and **fewer than 40% of students and recent graduates believe current programmes "encourage students to be creative and innovative"**. The lowest proportions of respondents (around 30%, taking all respondent groups together) agreeing with this statement were from central and southern European countries.

Figure 5: Response to the statement "Higher education courses encourage students to be creative and innovative"



Source: online consultation survey

Building links within higher education and with outside organisations is key...

35. For many respondents, **strengthening the knowledge triangle of teaching, research and innovation** was a key priority for fostering the innovative potential of students and higher education institutions. 62% of the online survey respondents agreed **that increased links between higher education institutions and businesses** would enhance their opportunities as actors for regional innovation, with over 80% arguing more should be done to encourage such cooperation for product and service innovation. Particularly in countries with a tradition of **significant public or semi-public research sectors** outside the higher education sector, strengthening the knowledge triangle also implies building stronger links between research and teaching and innovation. Furthermore, the increased collaboration with the private and the voluntary sector for programme and course design was mentioned as the way to equip both students and teachers with the most up-to-date knowledge of society's **social and economic innovation needs**. Several position papers highlight specific (infra)structural measures to promote better links between higher education institutions and their regions, in particular

variations of the science park model, where **universities and businesses share space and cooperate** of specific projects²¹.

...as are problem and experience-based learning approaches.

36. In order to encourage innovation as an **intrinsic part of higher education teaching and research**, several consultation respondents argue that the use of innovative ways teaching approaches (involving real-world problems, for example) should be promoted and better rewarded. Likewise, and as already noted above, inter-disciplinary teaching and learning should be encouraged.

3.3 Strengthening research

Focus efforts on supporting the researchers of the future...

37. When asked to reflect on priorities related to research and the interaction between research and other function of higher education, many position papers focus in particular on the importance of improving **doctoral training**. High quality doctoral training is crucial not only to ensure high quality academic research, but also to **support high quality teaching and effective cooperation activities** in higher education and deliver the **top-level experts** needed in other parts of the economy and society **outside academia**. More than 50% of the respondents to the online survey believe researchers do not "*receive the support they need from their institutions to reach their potential*". This is just one of the indications that there is room for improvement in Europe's research training systems. Gender is also a relevant issue in this area, as women are under-represented at doctoral level and at later stages in researcher and academic career paths, despite accounting for a majority of graduates at undergraduate level in nearly all EU countries.

...and help all students to develop an inquiring mind...

38. A recurring action theme to promote excellent research was **the structural embedding of research in teaching and learning**. On the one hand, several actors mentioned that graduates should be "*educated by staff in tune with the latest research in their field*". At the same time, research and critical thinking should form an intrinsic part of the higher education curriculum from year one. The development of **Open Science**, already discussed above, is seen by some respondents to facilitate this greater focus on research and research mind-sets across higher education programmes. Several position papers argue that **greater integration of science, research and education policies** is another important mechanism for improving the effectiveness of both teaching and research in higher education.

Providing incentives for international cooperation is important...

39. Finally, the **promotion of research internationalisation** through joint degree programmes and virtual mobility for the creation of international research networks was

²¹ The **UK's** position paper highlights how this model of cooperation is being used by many universities in England, as a means to enhance the relevance of research and support regional innovation.

mentioned by several respondents as a way to enhance and promote the quality of EU research.

...as is getting the right balance between reward systems for research and teaching

40. Taking a broader, system-level perspective, a number of position papers reiterated the challenge of getting the right balance between incentivising good and excellent research and good and excellent teaching, including for academics' career progression. One national position paper, for example, argued that "*universities and ministries still do not know how to valorize teaching activities in a balanced way with respect to research activities*". Some countries highlighted how "excellence in teaching" initiatives, alongside measures for research excellence, could help to redress this balance²².

4. WHERE AND HOW THE EU CAN ADD VALUE

There is strong support for the EU's role in supporting higher education...

41. A strong consensus emerges among respondents to the consultation that **the EU can and should play a constructive role** in supporting the development of the higher education sector in Europe. As one position paper stated, "*In Europe and worldwide, we are increasingly part of different social, economic and cultural networks. Higher education sits in this complex world. This makes international cooperation, the sharing of good practices and a European modernisation all the more useful*".

...and agreement that the existing modernisation agenda has been useful.

42. Equally, position papers submitted were almost universally agreed that the **current EU modernisation agenda** for higher education has been useful. In particular, many position papers argue that European cooperation and programmes to promote sharing of good practice between governments and stakeholders, support cooperation between institutions and promote individual mobility have contributed to **enhancing the overall quality and performance of higher education in the EU**.

*But consultees identify areas for improvement and further work at EU level.*⁴³ Notwithstanding the generally positive views expressed about the EU's contribution in the field of higher education, respondents to the consultation identified a range of areas **where more work at EU-level could add value**. These areas can be summarised as follows:

- a) **Support for increasing the labour market relevance of higher education.** A majority of respondents considered that there is a **mismatch** between the knowledge and skills with which graduates leave higher education and those required by the economy and society more generally.
- b) **Provision of comparable information:** here, there is considerable support for the EU helping to improve our **collective knowledge of higher education systems** and the

²² **Norway**, for example, has highlighted how its Centres of Excellence initiative helps to reward excellent teaching as well as excellent research.

transparency of the outputs and outcomes they produce. A number of respondents stress that the EU's particular added value lies in its greater ability than national authorities and organisations to support **comparative, trans-national data provision and analysis**²³.

- c) **Support for cooperation between higher education institutions:** often referring to existing project types supported by the Erasmus+ and Horizon 2020 programmes, there was strong support for the EU doing more to encourage **more cooperation** between higher education institutions and between HEIs and outside organisations. More specific suggestions included additional support for **university-employer-government** cooperation (in particular to improve mutual understanding of skills needs), more **innovation-oriented** cooperation projects, **more joint higher education programmes** (at different levels) and, in a limited number of submissions, the establishment of **joint European campuses**. Additional opportunities for cooperation between higher education and the **social and voluntary sector** were also highlighted in a number of papers²⁴.
- d) **Support for additional mobility of students, staff and researchers.** The EU's role in supporting internationalisation through individual mobility was also widely highlighted as an area where the EU should **continue and step up its efforts**. Respondents often highlight the value of time spent studying or working abroad for individuals' **skills development**. Several papers and contributions to the online survey also argue that greater use should be made of **digital networking** to enhance international cooperation and exposure.
- e) **Promotion of academic recognition:** several position papers call for a step change in this area, to ensure that recognition ceases to be a barrier to mobility between EU countries. These contributions typically underline the scope for more effective implementation of existing tools, in particular ECTS, and faster and less complicated recognition procedures.

44. As set out in the skills agenda Communication, the Commission will take the views expressed in the public consultation fully into account in its further work to support the **modernisation of higher education in Europe**. The Communication on A New Skills Agenda for Europe already announces two initiatives which are being considered, namely a project to develop competence assessment frameworks for different higher education disciplines, as well as actions to enhance the availability of graduate tracking information.

²³ Respondents to the online survey agreed almost unanimously (95% of respondents) that it was quite or very useful for the EU to support work to "collect comparable information on higher education in the EU", "provide information about future skills needs" and "examining how EU higher education graduates move into the labour market and their career development".

²⁴ These were usually linked to discussions of higher education's role in promoting active and engaged citizenship.

ANNEX 1

1.1 POSITION PAPERS ANALYSED

Country Position Papers (Ministry):

- Austria
- Belgium (FR)
- Belgium (NL)
- Bulgaria
- Croatia
- Cyprus
- Czech Republic
- Denmark
- Estonia
- Finland
- France
- Germany
- Greece
- Iceland
- Ireland
- Italy
- Latvia
- Lithuania
- Luxembourg
- Poland
- Netherlands
- Norway
- Romania
- Serbia
- Slovakia
- Slovenia
- Sweden
- Switzerland
- United Kingdom (Dept of BIS)
- United Kingdom (Scottish govt)

Country Position Papers (Rectors Conferences):

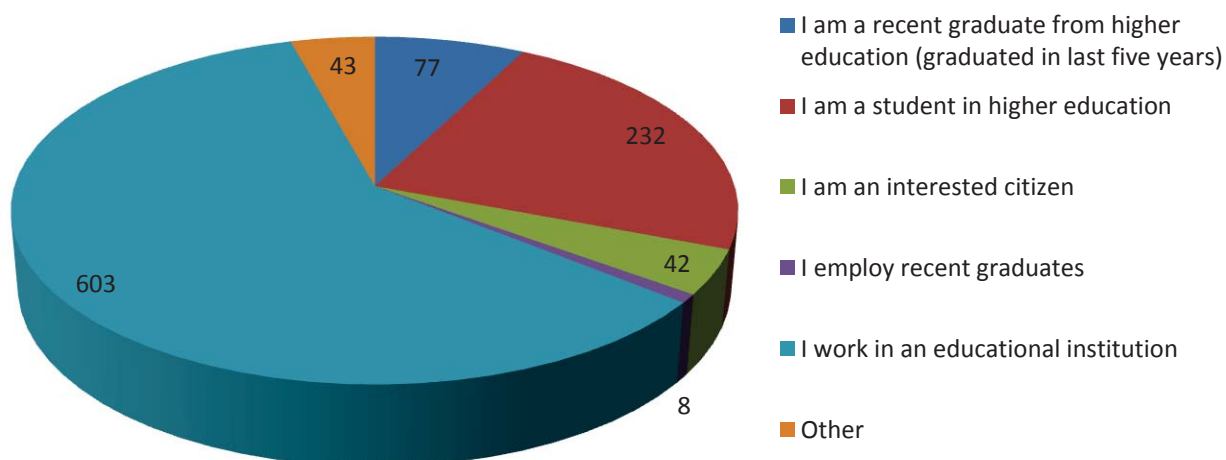
- Croatia
- France
- Poland
- Spain
- Sweden

European stakeholder position papers:

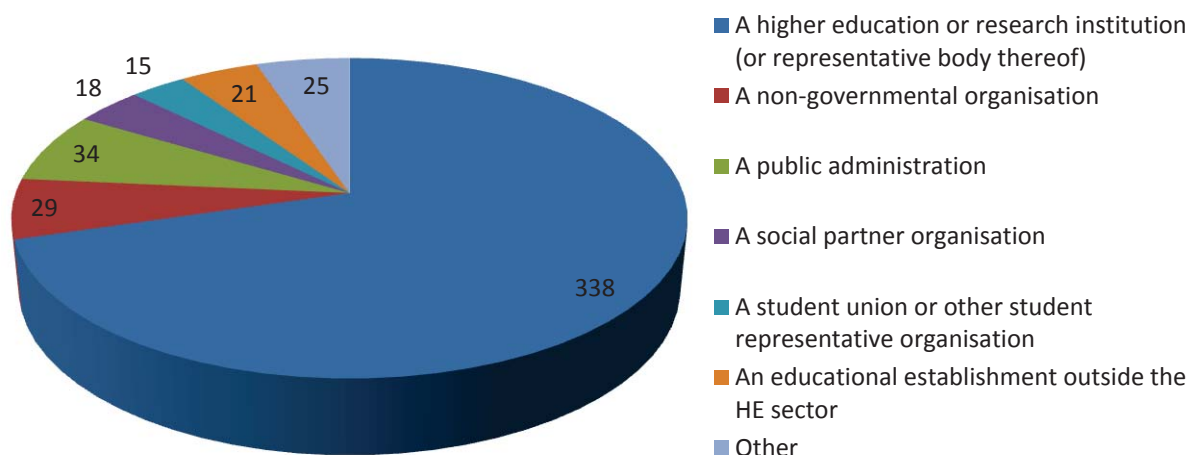
- Budapest University of Technology and Economics
- Coimbra Group of Universities
- Corvinus university of Budapest
- CESAER
- CGU
- Eurocadres
- ESN
- ESU
- EUA
- EURASHE
- EuroTech
- LERU
- SIU
- University of Cambridge

1.2 PROFILE OF RESPONDENTS TO ONLINE SURVEY²⁵

Overview of 1,005 Individual respondents



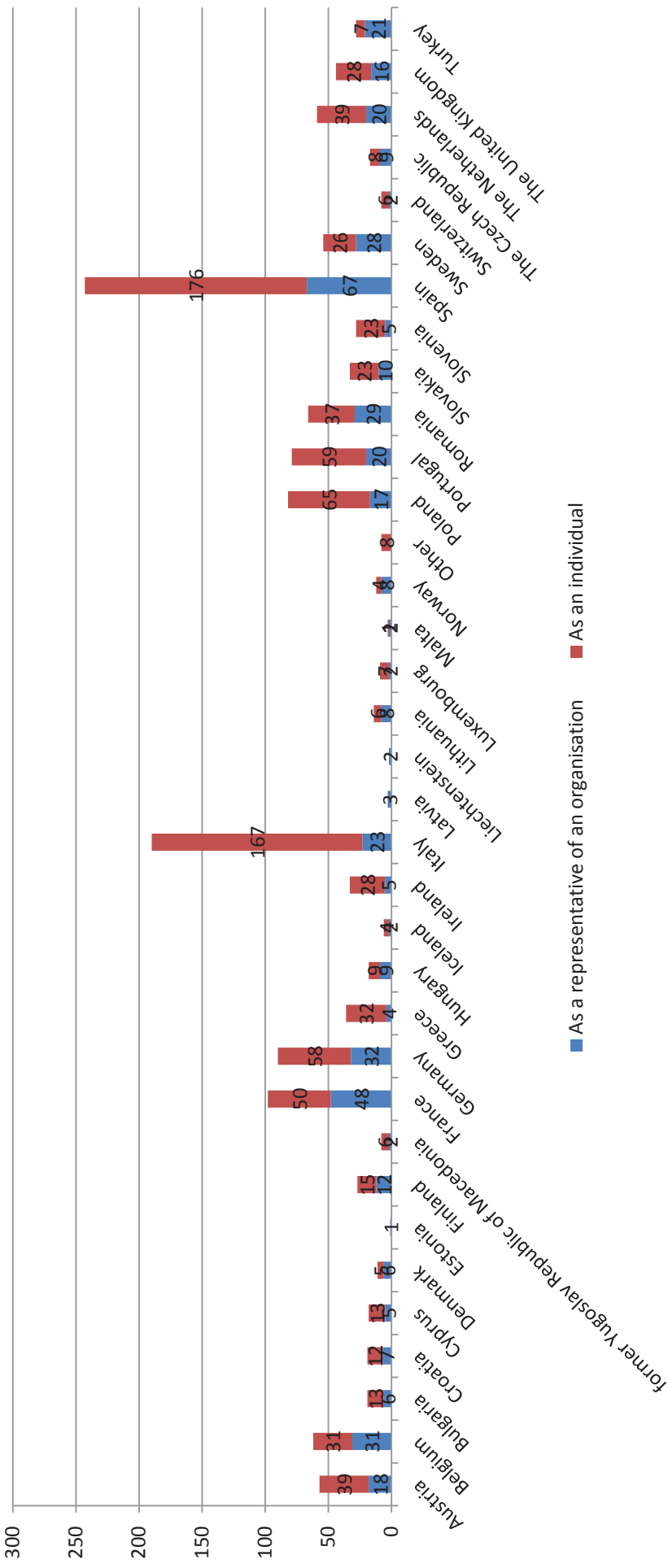
Overview of 480 Institutional respondents



²⁵ Groupings of 1485 individual (1.005) & institutional (480) replies - for analytical & statistical purposes: In order to achieve meaningful analytical & statistical categories, some categories in the sample have been regrouped, as outlined below:

- **HEI representative** [338 replies]: I represent a HE or research institution (or representative body thereof)
- **HEI employee** [603 replies]: I work in an educational institution
- **Student or recent graduate** [309 replies]: I am a HE student; I am a recent HE graduate (graduated in last 5 years);
- **Other stakeholder**[235 replies]: I am an interested citizen; I employ recent graduates; I represent an NGO; I represent a public administration; I represent a social partner organisation; I represent a student union or other student representative organisation; I represent an educational establishment outside the HE sector; Other

Respondents by country²⁶



²⁶ Regroupings of 1485 replies by region - for analytical & statistical purposes: In order to achieve meaningful regional categories, respondents from various countries have been grouped into regional clusters: **Benelux** [130 replies]: Belgium, the Netherlands & Luxembourg; **Central European Countries** [215 replies]: Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia & Slovenia; **Mediterranean** [533 replies]: Cyprus, Italy, Malta, Portugal & Spain; **Nordic Countries** [110 replies]: Denmark, Finland, Iceland, Norway & Sweden; **South-Eastern European Countries** [123 replies]: Bulgaria, Greece, Romania; **West European Countries** [263 replies]: Austria, France, Germany, Liechtenstein, Switzerland; **Candidate Countries** [36 replies]: former Yugoslav Republic of Macedonia & Turkey; **UK and IE** [77 replies]: Ireland & the United Kingdom;



Brussels, 10.6.2016
SWD(2016) 195 final

PART 4/4

COMMISSION STAFF WORKING DOCUMENT

ANNEX III
Revision of the European Qualifications Framework

Accompanying the document

**Communication from the Commission to the European Parliament, the Council, the
European Economic and Social Committee and the Committee of the Regions**

A NEW SKILLS AGENDA FOR EUROPE:
Working together to strengthen human capital, employability and competitiveness

{COM(2016) 381 final}

ANNEX III

REVISION OF THE EUROPEAN QUALIFICATIONS FRAMEWORK

Table of Contents

REVISION OF THE EUROPEAN QUALIFICATIONS FRAMEWORK (EQF)	2
1. INTRODUCTION	2
2. BACKGROUND AND STATE OF PLAY	3
2.1. The 2010 Milestone – Relating national qualifications systems and levels to the EQF.....	5
2.2. The 2012 milestone - EQF levels in qualifications documents.....	8
3. CHALLENGES FOR THE FUTURE.....	9
3.1. Improving the comparability of qualifications systems	10
3.2. Improving the transparency and comparability of single qualifications	11
3.3. Improving the clarity of the descriptors of the EQF Recommendation	12
3.4. Improving the transparency of qualifications awarded by private and international bodies	12
3.5. Quality assurance and credit systems: strengthening permeability, trust and facilitating progression ...	14
3.6. EQF and qualifications awarded in third countries	18
4. COMPARISON OF OPTIONS FOR WAYS AHEAD	19
4.1. Baseline scenario	20
4.2. Option 1 Strengthening comparability of qualifications through reinforced referencing.....	20
4.3. Option 2: Establishing referencing criteria and a mechanism to allow referencing of international qualifications and international sectorial qualifications frameworks to the EQF.....	25
4.4. Option 3: Enhancing comparability of qualifications awarded in the EU with third country qualifications	25
4.5. Conclusion on the comparison of options 1, 2 and 3.....	26

REVISION OF THE EUROPEAN QUALIFICATIONS FRAMEWORK (EQF)

1. INTRODUCTION

In today's and tomorrow's world, people need a higher and broader set of skills to work, communicate, access information, products and services and for social and civic participation.

A proper understanding and valuing of skills available is fundamental to support individuals to acquire and update skills throughout their life, moving between different types and levels of education, between education and employment and across countries and thus facilitate a better match between supply of skills and the needs of the labour market.

Qualifications express what people know, understand and are able to do. They can take different forms such as a diploma or certificate. Transparency about what people actually learned in order to obtain a qualification through a qualification ('learning outcomes') is key to ensure that individuals and employers give the appropriate economic, social and academic value to qualifications.

Qualifications express what people know, understand and are able to do. Transparency about what people actually learned ('learning outcomes') is key to ensuring that individuals and employers give the appropriate economic, social and academic value to qualifications.

Differences between education and training systems in the EU make it difficult to assess what someone - holding a qualification from another country – knows, understands and is capable of doing in learning or work contexts. Insufficient understanding hampers 'trust' in quality and content of qualifications acquired in another Member State. The same goes for qualifications awarded outside the formal system and by international bodies and organisations. This hinders professional development, recruitment and promotion opportunities and further learning opportunities for workers and learners with this type of qualifications, creating barriers to worker and learner mobility in the EU within and between borders.

To cope with these differences we need a mechanism that can compare national qualification systems and ensure that the learning outcomes of each qualification can be easily understood and compared. Such mechanism was created through the European Qualifications Framework for lifelong learning (EQF)¹, established in 2008 through a European Parliament and Council Recommendation. Its aim was to improve the transparency, comparability and portability of people's qualifications in Europe.

This Annex provides the analytical base underpinning the Commission proposal for the revision of the EQF Recommendation (as introduced in section 2 of this Staff Working Document. It presents briefly the challenges and problems with the current state of play. Subsequently, it attempts to provide effective solutions by proposing a number of policy options for which the envisaged impacts are analysed. Specific stakeholder consultations on the revision of the EQF Recommendation were held with the EQF Advisory Group on 19 January 2016 and with the EU social partners on 20 January 2016. The proposals are made in the context of the initiative New Skills Agenda for Europe. The revision seeks to strengthen

¹ OJ C 111, 6.5.2008, p.1.

Annex III: Revision of the European Qualifications Framework

the use of the EQF, ensuring its original objective is fully achieved, and to broaden its scope, enhancing comparability of qualifications awarded in the EU and qualifications awarded in Third countries.

2. BACKGROUND AND STATE OF PLAY

The European Qualifications Framework (EQF) Recommendation has created a common reference framework of eight European generic levels of learning, which serves as "translation grid" between national qualifications systems. All types and levels of qualifications are covered and each level is defined in terms of learning outcomes, understood as knowledge, skills and competence. Level 1 presents the lowest level of proficiency, level 8 the highest. In principle all possible ways of learning can lead to the learning outcomes of a particular level, including the learning taking place in non-formal and informal contexts. The comparison of national qualification levels to the eight EQF levels is done through a process called "referencing". In this context qualifications are first included in a National Qualifications Framework (classifying national qualifications and their levels) and then, through the EQF translation grid, their levels are compared across the EU.

The 2008 Recommendation invited Member States to:

1. Relate their qualification systems and levels to the eight levels of the EQF by 2010.
2. Indicate EQF levels on newly issued certificates/diplomas and or certificate/diploma supplements by 2012.

A total of 39 countries currently participate and have committed to the EQF. Early 2016 22 Member States and 5 non Member States had finalised the process of referencing their national qualifications levels to the EQF, signalling commitment to its overall objective of transparency and comparability. In addition, 3 Member States had presented an initial referencing report still awaiting endorsement by the EQF Advisory Group. 3 remaining Member States had planned referencing in 2016. With the exception of Italy all countries have referenced their qualifications levels to the EQF through national qualifications frameworks. Early 2016 a total of 15 countries were putting EQF levels on certificates and diplomas with a rapid increase expected by the end of 2016.

Independent evaluations of the EQF Recommendation were carried out on behalf of the European Parliament² and on behalf of the Commission³. The evaluations address the period 2008-2012 and assessed the relevance, effectiveness, efficiency, coherence, impact and sustainability of the EQF. Based on the results of the evaluation the Commission reported to the European Parliament and the Council on the implementation of the EQF Recommendation.⁴The development of national qualifications frameworks, their orientation and impact

The EQF has been an important catalyser for the development of national qualifications frameworks organising the qualifications systems from the different national education and

²

http://www.europarl.europa.eu/meetdocs/2009_2014/documents/cult/dv/esstudieurqualifframewimplem/esstudieurqualifframewimplemen.pdf

³<http://ec.europa.eu/ploteus/sites/eac-eqf/files/DG%20EAC%20-%20Evaluation%20EQF%20-%20Final%20Report%20-%20Final%20Version.pdf>

⁴ COM(2013) 897 final

Annex III: Revision of the European Qualifications Framework

training sub-sectors around one same framework and bringing closer together stakeholders from education, training, employment and youth work. This dialogue is a fundamental step for more coherent national educational systems and it has contributed to the modernisation of education and training policies and practices.

A national qualifications framework (NQF):

An instrument for the classification of qualifications according to a set of criteria for specified levels of learning achieved, which aims to integrate and coordinate national qualifications subsystems and improve the transparency, access, progression and quality of qualifications in relation to the labour market and society.

An NQF focussed on learning outcomes organises qualifications according to levels of proficiency of pre-established learning outcomes. Different types of qualifications can be placed at the same level in one framework, illustrated for example by the allocation of advanced VET qualifications at the same levels as university bachelor and master degrees in several countries.

Before 2004, when initial work on the EQF started, only three countries, France, Ireland and the UK, had set up NQFs. By 2016, 43 qualifications frameworks have been set up in the 39 countries taking part in the EQF cooperation.

Box 1 presents the situation as regards European NQF developments. Changes since 2014 are indicated.

Box 1. NQF developments⁵ Some Figures

- ✓ **35** countries are working towards or implementing **comprehensive NQFs** covering all types and levels of qualifications (34 in 2014).
- ✓ **4** countries have introduced **partial NQFs** covering a limited range of qualification types and levels or consisting of frameworks operating separately from each other: CZ, FR, UK-England/Northern Ireland, and CH.
- ✓ **17** countries have got **fully operational frameworks**: BE-Flanders, CZ, DK, DE EE, FR, , IS, IE, LT, LU, MT, NO, NL, PT, SE, CH and the UK England/Northern Ireland, Scotland and Wales) . This is a significant increase since 2014 when only 7 countries belonged to this category⁶. These 17 countries have **21 different frameworks**, including the three regions of Belgium (with separate frameworks for Flanders, Wallonia and the German Speaking Community) and three in UK nations (England/Northern Ireland, Scotland and Wales).
- ✓ **6** countries reached an **early operational stage** of their NQFs: EL, HR, LV, MO, SK and TK). These countries have completed the initial design and adoption of their frameworks. As their practical implementation is still on-going, their benefits and visibility to end-users are still limited.
- ✓ **3** countries are in the process of **legal adoption** of their frameworks: ES, FR, HU.

⁵ Cedefop. Briefing note Qualifications frameworks in Europe, January 2016
<http://www.cedefop.europa.eu/en/publications-and-resources/publications/9109>

⁶ Analysis and overview of national qualifications frameworks developments in European countries, annual report, 2014.
<http://www.cedefop.europa.eu/en/publications-and-resources/publications/6127>

Annex III: Revision of the European Qualifications Framework

- ✓ **33** countries have proposed/adopted **eight-level frameworks** (29 in 2014). The remaining countries operate with five, seven, nine, ten and twelve levels.
- ✓ **27** countries have now referenced their NQFs to the EQF (23 in 2014).
- ✓ **24** countries have self-certified their link to the Qualifications framework for European Higher Education Area (Bologna framework) (23 in 2014), of which 15 jointly with referencing to the EQF
- ✓ **15** countries indicate EQF levels on certificates, diplomas or Europass documents (9 in 2014). CZ, DK, DE, EE, FR, IE, IS, IT, LV, LT, MT, NL, PT, NO and the UK (optional in the three frameworks England/Northern Ireland, Scotland and Wales).

Two studies carried out by Cedefop during the last decade (Cedefop, 2009⁷ and forthcoming, 2016⁸) demonstrate that there is a clear link between the development of qualifications frameworks and the adoption of more systematic national policies and practices on learning outcomes. Both studies reveal that once developed, the learning outcomes based descriptors of the NQF's become an important tool supporting qualifications reforms and practices. They are used to support the development and renewal of standards and curricula and are increasingly influencing assessment and teaching practices. The impact of the learning outcomes approach is exemplified by Estonia, Poland and Lithuania where the level descriptors of their NQFs has been used as reference points for development of new qualifications, for example advanced VET at level 5. In Belgium (Flanders), Bulgaria, Croatia, Slovakia, Portugal the NQFs have become an important reference point for the review and renewal of VET qualifications, curricula and assessment methods based on learning outcomes. Overall we can observe a clear strengthening of the learning outcomes approach in European education and training during the last decade, marking an important shift in the way education and training systems are conceptualised and governed.

While overall playing an increasingly important role, the degree of implementation of learning outcomes still varies between countries and education sectors. Where in e.g. France, Ireland, the Netherlands, the Nordic countries and the UK, the learning outcomes approach has for a long time been a key feature of the national systems, other countries like Bulgaria, Cyprus, Greece, Poland, Slovakia and Romania have only recently started to implement the principle. The approach is now firmly embedded in vocational education and training and higher education, but is used to a lesser extent in general education, in particular at upper secondary level.

2.1. The 2010 Milestone – Relating national qualifications systems and levels to the EQF

Four countries, Ireland, France, Malta and the UK completed their referencing within the 2010 deadline. These countries had established learning outcomes based national qualification frameworks prior to the adoption of the EQF Recommendation in 2008 and were thus able to carry out referencing without delay. Countries referencing after 2010 have done this on the basis of newly developed national qualification frameworks⁹ introducing explicit levels of learning outcomes, largely reflecting the principles introduced by the EQF. Using this new approach and bringing all levels and stakeholders together has been a very

⁷ Cedefop 2009. The Shift to Learning Outcomes: Policies and practices.

<http://www.cedefop.europa.eu/en/publications-and-resources/publications/3054>

⁸ Cedefop, 2016, Application of learning outcomes approaches across Europe, forthcoming.

⁹ Italy is an exception to this, referencing national qualifications directly to the EQF, without a NQF. The Czech Republic referenced on the basis of national classifications of educational qualifications types and the NQF for vocational qualifications.

Annex III: Revision of the European Qualifications Framework

time consuming process and created delay in the referencing process. Table 1 shows how the referencing process has evolved since 2009, demonstrating a steady growth in the number of countries completing the referencing process.

Table 1 Overview of Referencing to the EQF

Year	Year of joining the EQF cooperation	Countries having completed referencing to the EQF	Countries in dialogue on referencing	Countries having updated referencing	Countries yet to initiate or complete referencing
2008	EU 27 + Croatia, Iceland, Liechtenstein, Norway, Turkey				
2009		Ireland, Malta			
2010		United Kingdom (England/Northern Ireland, Scotland, Wales), France			
2011		Belgium (Flanders), Czech Republic Denmark, Estonia, Latvia, Lithuania, the Netherlands, Portugal			
2012	Switzerland	Austria, Croatia, Germany, Luxembourg		Malta	
2013	Montenegro, FYROM	Belgium (Wallonia), Bulgaria, Iceland, Italy, Poland, Slovenia	Greece, Romania		
2014		Montenegro, Norway	Cyprus, Greece, Romania		
2015	Albania, Bosnia-Herzegovina, Kosovo, Serbia	Greece, Hungary, Switzerland	Cyprus, Romania, Slovakia	Estonia, Malta	
2016		FYROM	Cyprus, Kosovo, Romania, Slovakia, Sweden		Albania , Bosnia-Herzegovina, Finland, Liechtenstein, Serbia, Spain, Turkey

Annex III: Revision of the European Qualifications Framework

The key purpose of the EQF referencing process is to contribute to increased transparency and comparability of national qualifications systems, including all levels and types of qualifications. Comprehensive qualifications frameworks provide a platform for national coordination, cooperation and involvement of all relevant stakeholders in the definition, review and renewal of learning outcomes.

Characteristics of referencing to the EQF can be summarised as follows:

- The majority of countries are aiming for a comprehensive referencing covering all types and levels of qualifications within the formal education and training system.
- Some countries have included qualifications acquired in non-formal context, notably addressing vocational and professional qualifications (for example Belgium (Flanders), Estonia, Slovenia).
- Only few countries have implemented practical and operational arrangements for the inclusion of non-formal qualifications awarded by companies, sectors and/or international bodies.
- The majority of countries assigned levels to blocks of qualifications without analysing each single qualification covered by their framework. A limited number of countries have started to assign individual qualifications to levels, potentially improving the precision of levelling. France, UK (England and Northern Ireland) and Switzerland have referenced their NQFs including VET/professional qualifications at all levels.
- Austria, Germany, Switzerland and France so far have not included in their referencing general education (including upper secondary school-leaving certificates giving access to higher education).

Table 2 shows the scope of the referencing process so far and the extent to which all levels and types of qualifications have been addressed.

Table 2 Scope of the referencing to the EQF

Scope of referencing	Countries	
Covering : <ul style="list-style-type: none"> all levels and types of qualifications including formal qualifications including non-formal learning (<i>private and/or international qualifications</i>) 	Ireland,	Sweden (tbc)
	the Netherlands	
Covering <ul style="list-style-type: none"> all levels and types of qualifications from the formal education and training system 	Belgium	Italy
	Bulgaria	Latvia,
	Croatia	Lithuania
	Cyprus (tbc)	Luxembourg
	Czech Republic	Malta
	Denmark	Montenegro
	Estonia	Norway
	FYROM,	Poland
	Greece	Portugal
	Hungary	Romania (tbc)
	Iceland	Slovakia (tbc)
Covering mainly <ul style="list-style-type: none"> vocational and professional qualifications 	France	Switzerland
	United Kingdom (England/ Northern Ireland)	
Not covering: <ul style="list-style-type: none"> general education including upper secondary school leaving certificates 	Austria	Germany
	France	Switzerland
Not covering <ul style="list-style-type: none"> qualifications from higher education 	United Kingdom (England/Northern Ireland, Wales)	

2.2. The 2012 milestone - EQF levels in qualifications documents

The overall delay in the referencing process has also caused the delay in meeting the second milestone of the EQF. By February 2016, a total of 15 countries had introduced level references in national qualifications documents (Denmark, Czech Republic, Estonia, France, Germany, Iceland, Ireland, Italy, Lithuania, Latvia, Malta, Norway, the Netherlands, Portugal and the UK). A total of 8 countries (Austria, Belgium-Flanders, Bulgaria, Slovenia, Hungary, Malta, Poland and Sweden) will start introducing references to EQF levels during 2016-17¹⁰.

¹⁰ Information communicated to the EQF Advisory Group

Annex III: Revision of the European Qualifications Framework

Table 3 shows the types of qualifications documents containing references and indications regarding future implementation. The table also shows the extent to which EQF levels are presented on qualifications in national qualifications databases.

Table 3 Countries having included a reference to EQF-levels in qualifications documents and databases (February 2016)¹¹

General education qualifications	IVET and CVET qualifications	Europass certificate supplements	Europass diploma supplements	National qualifications databases
Denmark, Czech Republic, Estonia, Iceland, Malta	Denmark, Czech Republic, Estonia, Germany, Iceland, Ireland, Italy, Lithuania, Malta, the Netherlands, Portugal, United Kingdom (England/Northern Ireland, Scotland, Wales; optional)	Denmark, Estonia, France, Germany, Iceland, Ireland, Lithuania, Norway	Estonia, Denmark, Germany, Ireland, Latvia, Italy, Malta, Portugal	Czech Republic, Estonia, France, Germany, Lithuania, Malta, the Netherlands, Portugal, United Kingdom (England/Northern Ireland, Scotland, Wales)

No country has included reference to EQF levels in all qualifications documents. Progress has mainly been made in vocational education and training (IVET and CVET), to a lesser extent in general education qualifications. The inclusion of EQF levels in higher education qualifications is limited, reflecting that it is normally up to the (autonomous) institution itself to decide whether inclusion should take place.

3. CHALLENGES FOR THE FUTURE

A key objective of the EQF is to improve the understanding and comparability of qualifications. This is important as qualifications influence the ability of individuals to get jobs, to practice occupations, to pursue lifelong learning and to move between occupational sectors and countries. The ability to judge and trust a qualification is crucial not only to learners and workers but also to a number of other end-users like employers and educational institutions. The implementation of the EQF has contributed to this understanding, allowing for a better comparison of national qualifications systems and their levels.

Despite the successful implementation of the 2008 Recommendation on EQF, its objectives of transparency, comparability and portability of qualifications have not been fully reached. The state of play and challenges of these issues are addressed in this chapter.

¹¹ Based on Cedefop's survey: Implementation of national qualifications frameworks in Europe 2015.

3.1. Improving the comparability of qualifications systems

Referencing: The state of play¹²

The quality of information on the referencing process provided by countries varies, as does the scope of the referencing processes itself. Some countries could build on long-standing experiences with national qualifications frameworks and/or the use of the learning outcomes principle but many countries entered into the process without any prior experiences. The following observations can be made:

- National qualifications systems and qualifications are constantly changing due to internal and external factors. For the EQF to support comparison of national qualifications systems, the referencing process needs to be continuously updated to reflect adequately the changes in the national systems and qualifications. The current recommendation does not explicitly refer to the need for a continuous update (going beyond the existing two milestones) and constant improvement and deepening of the referencing.
- A few countries assign qualification per qualification to their NQF levels and consequently to EQF levels (Belgium, Hungary, Switzerland), allowing for a precise levelling of each qualification. In contrast, a majority of countries has assigned ‘blocks’ of qualifications (for example VET at upper secondary level) to their NQF levels and consequently to EQF levels. The actual level of learning outcomes of the qualifications within these ‘blocks’ can vary considerably, influencing the overall quality of the referencing process.
- The national referencing processes and reports have been documented to varying degrees, in some cases raising questions regarding the levelling of a particular qualification or ‘block of qualifications’. While some countries have put much effort into pilot-studies, research and active involvement of stakeholders, others have done so to a lesser degree. This directly limits comparability and the extent to which the levelling can be trusted.
- The ten referencing criteria have proved to be robust guides to the referencing process and thus supported overall comparability. However, in many cases referencing reports do not sufficiently document how the shift to learning outcomes have been taken forward (referencing criterion 3) and how this influences the levelling (criterion 2 and 4) and quality assurance (criterion 5) of national qualifications.
- As demonstrated above (table 2), the scope of the referencing process varies between countries. While the overall objective of the EQF is to cover all types and levels of qualifications, this has yet to be fully achieved. The lack of coverage of qualifications from general upper secondary education (school leaving qualifications) in countries like Austria, France and Germany exemplifies this. The majority of countries have chosen, in the first phase of EQF implementation, to include only qualifications awarded by the formal (predominantly public) education and training system. While only a few countries have included qualifications awarded by non-formal, private and/or international bodies, countries are generally aware that these qualifications need to be addressed in the coming period. These differences, reflecting the challenging tasks of developing comprehensive

¹² Information based on Cedefop's Inventory of National Qualifications Frameworks, <http://www.cedefop.europa.eu/en/publications-and-resources/country-reports/european-inventory-on-nqf>.

Annex III: Revision of the European Qualifications Framework

NQFs, reduce overall comparability of national systems, notably related to private and international qualifications where transparency is a particular challenge and need.

The challenge of referencing:

The current Recommendation provides no guidance on how to improve the coverage and the systematic update of the referencing to the EQF. To provide a comprehensive picture of existing qualifications in countries, and thus to support European comparability of qualifications, the scope of the referencing reports must be broadened. Particular attention must be paid to complete the inclusion of formal education qualifications, private qualifications, international qualifications and the link with validation of non-formal and informal learning. This broadening of scope must be combined with systematic and regular updates, preventing the referencing from becoming obsolete. This broadening and deepening of the referencing process is an incentive to Member States to boost quality of qualifications and improve comparability, and thereby the relevance of the EQF to end-users.

3.2. Improving the transparency and comparability of single qualifications

Indicating the relevant EQF level in qualifications documents helps to position the qualification both in a national and European context. However, it does not provide information on the content, profile and quality of the qualification.

State of play:

Increasingly qualification certificates, diplomas and Europass documents contain a clear reference to their EQF level¹³. The EQF level of qualifications is also increasingly becoming part of information on national qualifications e.g. through national qualifications databases. While important, this basic information on the levels provides only a first starting point for comparing qualifications. For the EQF to become more relevant to end-users, additional information on the learning outcomes underpinning the qualifications – what a learner actually knows and is able to do – is required. A combination of information on levels and content/profile of qualifications will provide a strong basis for transparency and comparison.

The challenge:

Comparable information on the content and profile of qualifications and qualifications types that are part of national qualifications frameworks is only available to a limited extent. An internal study by Cedefop on the practical application of the learning outcomes approach in VET and higher education qualifications identified a number of challenges¹⁴:

- i. No agreed format exists for presenting information on single qualifications. The level of detail in the description of a similar qualification varies greatly from country to country complicating the comparison of profile and content of qualifications.
- ii. No common European format exists for the description of *learning outcomes*. The consequence is a considerable difference in the way the distinction between the different learning outcomes are treated and the way the complexity of learning

¹³ 15 countries indicate EQF levels on certificates, diplomas or Europass documents (9 in 2014). CZ, DK, DE, EE, F, IC, IE, IT, LV, LT, MT, NL, PT, NO and the UK (optional)

¹⁴ Cedefop, 2014, The writing of learning outcomes in VET and higher education, unpublished.

Annex III: Revision of the European Qualifications Framework

outcomes is described. Learning outcomes statements of qualifications vary significantly in content and length (between 1 and 200 pages). Cooperation between different stakeholders is limited across sub-systems and national borders.

- iii. Information on the content of a qualification is difficult to find, not always accessible by the public or available in electronic format. While databases in some cases contain relevant information, they are often only partial, not including all qualifications. Language barriers and the lack of agreed presentation formats also reduce the relevance of this information to outsiders.

3.3. Improving the clarity of the descriptors of the EQF Recommendation

State of play:

Annex II of the 2008 EQF Recommendation relating to descriptors for the EQF defines three headlines for describing proficiency levels: knowledge, skills and competence. Whereas the definitions of knowledge and skills correspond to the general definitions of knowledge and skills of the EQF Recommendation, as laid down in Annex I of the Recommendation, this is not the case for the competence descriptor. The competence descriptor of Annex II is described in terms of "autonomy and responsibility", and is more limited than the general definition for competence as broadly used, namely "the proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development".

The challenge:

One of the conclusions of the external evaluation of the EQF of 2013¹⁵ was that the competence descriptor as headline for the third column of Annex II of the 2008 EQF Recommendation causes confusion, because the use of the term competence in the 2008 EQF Recommendation is not consistent. A number of countries also have identified this as a problem and have chosen to describe the relevant part of their national descriptors differently¹⁶, to more precisely signal the scope of these descriptors.

3.4. Improving the transparency of qualifications awarded by private and international bodies

The offer of qualifications, diplomas and certificates available to citizens is increasing¹⁷. This includes qualifications awarded by private and international organisations and bodies. This is exemplified by the development and award of international qualifications where a variety of bodies, ranging from international organisations via multinational companies to sectorial organisations, are now active. An on-going study¹⁸ has identified 254 organisations awarding international qualifications in 21 different economic areas, amounting to the combined award of close to 4.5 million qualifications. The 2008 Recommendation stipulates that the EQF

¹⁵ <http://ec.europa.eu/smart-regulation/evaluation/search/download.do?documentId=9656454>

¹⁶ The following terminology is used for identification of the relevant parts of national descriptors (N=32 NQFs): 13 x competence', 9 x term autonomy/responsibility/accountability/independence, 2 x general competence, 2 x attitudes, 1 x to personal competence (as a headline covering social competence and autonomy), 1x social competence, 1 x transversal competence, 3 x a presentation of descriptors in one column, not using headlines to distinguish between learning domains.

<http://www.cedefop.europa.eu/sl/publications-and-resources/publications/6119>

¹⁷ Cedefop 2012 International qualifications: what they mean for citizens.

<http://www.cedefop.europa.eu/en/news-and-press/news/international-qualifications-what-they-mean-citizens>

¹⁸ ICF and 3S, Study on international sectoral qualifications systems and frameworks , Forthcoming 2016.

Annex III: Revision of the European Qualifications Framework

should enable international sectoral organisations to relate their qualifications systems to a common European reference point and thus show the relationship between international sectoral qualifications and national qualifications systems.

State of play

The EQF referencing process has so far mainly addressed formal qualifications fully integrated (through legal and administrative decisions and agreements) into the national qualifications systems. As shown in table 2 in section 2.1, qualifications operating outside national jurisdiction, for example awarded by private and/or international bodies and/or companies, have only to a limited extent been addressed and included in national qualifications frameworks.

A Latvian study published in 2014¹⁹ shows that international qualifications take many forms and are awarded by different types of organisations. Some examples :	
Type or organisation	International qualification
International sectoral associations	The European Welding Federation
Sector initiatives	Banking Sector: <ul style="list-style-type: none">– The European Foundation certificate in Banking– 17 accredited institutes issued 7 500 certificates issued
International education centres	The American Hotel and Lodging Institute
International corporations and companies	Microsoft
International Institutions	The UN and its International Maritime Organisation

A survey carried out for the EQF AG in 2015²⁰ shows that a limited number of 8 countries have introduced criteria and procedures, including for quality assurance, for the inclusion of qualifications resulting from non-formal education and training. In the majority of cases these processes do not distinguish between private vendor qualifications and international (sectoral) qualifications.

¹⁹ <http://www.nki-latvija.lv/en/jaunums/the-study-international-qualifications-in-latvia>

²⁰ Monika Auzinger & Karin Luomi-Messerer, *Survey on International Sectoral Qualifications – Final results*, 28 February 2015.

Annex III: Revision of the European Qualifications Framework

The three countries with a longstanding NQF in place have opened up towards qualifications awarded by a wide range of stakeholders, including private and international bodies. This is well illustrated by **France** where the inclusion of a qualification into the NQF is done according to a set of formal criteria but where the origin of the qualification (formal, non-formal or international) is of no relevance. The main question for inclusion is rather whether the qualification adds value and whether it fulfils the general criteria for inclusion and levelling to the French NQF. A similar approach can be observed in **Ireland and the UK** where qualifications awarded by both private vendors and international companies in principle can be included into the frameworks. In UK, Scotland more than 400 qualifications from non-formal contexts have been included (or 'credit rated') into the SCQF.

Some other countries with recently established NQFs created two sets of procedures. The **Netherlands and Sweden** exemplify countries where specific procedures have been put in place for the inclusion of non-formal qualifications, but where no pre-defined distinction between private vendor or international qualifications have been introduced. Both Sweden and the Netherlands have pointed to the important role played by non-formal qualifications in their countries and made it a priority to address these at an early stage of NQF implementation. Swedish authorities argue that the main added value of a NQF lies in its ability to increase transparency of non-formal qualifications; formal qualifications are already easy to overview.

The challenge

In spite of the intention of the EQF to cover all levels and types of qualifications, there is a lack of a clear procedure to reference non-formal and international qualifications to the EQF. This is particularly problematic for international qualifications. Currently, an international body has to approach each single NQF to ensure full European coverage. This leads to at least 39 different procedures for the same qualification, including the 39 different requirements for quality assurance arrangements. For many organisations and bodies this is not a realistic option, reducing the relevance and attraction of an EQF level and with it the implicit understanding of and trust in these qualifications. Furthermore this country-by-country approach entails the risk of the same international qualification being allocated different EQF levels in different countries, which could undermine the credibility of the EQF.

3.5. Quality assurance and credit systems: strengthening permeability, trust and facilitating progression

The objective of the 2008 Recommendation is to improve the portability of achieved learning outcomes between sub-systems of education and between education and training and the labour market, within and across regional and geographic borders. Qualifications influence the ability of individuals to get jobs, to practice occupations, to pursue lifelong learning and to move between occupational sectors and countries. The ability to judge and trust a qualification, and whether it actually can be exchanged into further education and/or employment, is crucial not only to learners and workers but also to a number of other end-users like employers and educational institutions. Understanding and trusting the quality and level of qualifications referenced to the EQF are essential to support this mobility.

- Trusting an NQF level and how it relates to the EQF requires the existence of transparent and robust quality assurance arrangements for qualifications and for the referencing process.
- Since NQFs aim to improve the transparency, access, progression and quality of qualifications in relation to the labour market and society, their success depends on their

Annex III: Revision of the European Qualifications Framework

ability to support progression through access, admission and exemption, of individuals across institutional and national borders.

State of play in Quality Assurance

Quality assurance is a fundamental principle of the EQF and its referencing process. The EQF, in its role as a meta-framework, does not set standards for quality, nor does it prescribe how national quality assurance processes are to be implemented. However, in its annex III a set of common principles for quality assurance in Higher Education and VET have been set out. These principles build on the Council conclusions on quality assurance in VET of 23 and 24 May 2004, the Recommendation 2006/143/EC of the European Parliament and of the Council of 15 February 2006 on further European cooperation in quality assurance in higher education²¹ and on the standards and guidelines for quality assurance in the European Higher Education Area agreed by the ministers responsible for higher education at their meeting in Bergen. The Recommendation of the European Parliament and of the Council on the establishment of a European Quality Assurance Reference Framework for Vocational Education and Training (EQAVET) was established in 2009 and is fully compatible with these principles.

The EQF referencing criteria require the countries to illustrate that their quality assurance arrangements are consistent with relevant European principles and guidelines.

Challenges in Quality assurance:

In spite of the current focus on quality assurance in the referencing criteria and of the common quality assurance principles for HE and VET in Annex III some challenges remain:

- i. Quality assurance arrangements to review and monitor a) the use of learning outcomes and b) the assignment of qualifications to NQF levels needs to be further strengthened at national level. These arrangements need to be systematically addressed by the referencing process. Analysis of EQF referencing reports²² demonstrates that all countries have made an effort to present existing arrangements and institutions for quality assurance and how they link to European standards and guidelines (referencing criteria 5 and 6).
- ii. Despite the overarching nature of the EQF, quality assurance principles in EQF do not apply for all types and levels of qualifications. The current common quality assurance principles refer to quality assurance in general, and not specifically to qualifications referenced to the EQF. Furthermore, quality assurance principles in EQF (annex III of the 2008 Recommendation) only refer to VET and higher education, and do therefore not apply to qualifications resulting from general education, from the validation of non-formal and informal learning, the private sector or international qualifications (whether sectoral or not). This prevents trust between Member States across the full spectrum of qualifications. A qualification referenced to the EQF must always be

²¹ OJ L 64, 4.3.2006, p. 60.

²² Cedefop, Analysis and overview of national qualifications framework developments in European countries, annual report, 2014; <http://www.cedefop.europa.eu/en/publications-andresources/publications/6127>.

Annex III: Revision of the European Qualifications Framework

based on transparent and robust quality assurance arrangements allowing end-users to judge the relevance of the particular qualification to their needs²³.

In **higher education**, Standards and Guidelines for Quality Assurance in the European Higher Education Area" (ESG) have been revised in 2015²⁴. These revised guidelines state that "The qualifications resulting from a programme should be clearly specified and communicated, and refer to the correct level of the national qualifications framework for higher education and, consequently, to the framework for Qualifications of the European Higher Education Area" (Standard 1.2).

A European Association for Quality Assurance in Higher Education (ENQA)²⁵ was set up in 2000, with the aim to disseminate information, experiences and good practices in the field of quality assurance in higher education, supported by the European Quality Assurance Register (EQAR). This is a register of those higher education quality assurance agencies that substantially comply with the ESG. Compliance must be demonstrated through an external review by independent experts. The main objective of EQAR is to provide the public with clear and reliable information on quality assurance agencies operating in Europe; the register is thus web-based and freely accessible²⁶.

In **VET**, EQAVET²⁷ is firmly established since 2009 as the European reference framework for quality assurance. It provides a *systematic approach* to quality assurance, promoting a culture of continuous *improvement* by combining internal and external evaluation with the use of indicators and qualitative analysis.

The 2012 Council Recommendation on **the validation of non-formal and informal learning**²⁸ asks that transparent quality assurance measures, in line with existing quality assurance frameworks are in place that support reliable, valid and credible assessment methodologies and tools. As demonstrated by the 2015 European Guidelines on validating non-formal and informal learning²⁹, an explicit focus on the learning outcomes approach as well as on the different stages of the certification process is essential in this area.

State of play of credit systems:

The 2008 EQF Recommendation points to the need for close links between the EQF and existing or future European systems for credit transfer and accumulation in order to improve citizens' mobility and facilitate the recognition of learning outcomes.

While the European Credit Transfer and Accumulation System (ECTS)³⁰ is already used in around 75% of higher education courses, the European Credit System for Vocational Education and Training (ECVET)³¹ is at an earlier stage. Both systems emphasise the importance of the learning outcomes approach in supporting the transfer and accumulation of qualifications and parts of qualifications.

²³ Quality assurance principles at European level for general education are subject to ongoing discussions in the context of ET2020

²⁴ <http://www.enqa.eu/index.php/home/esg>

²⁵ <http://www.enqa.eu>

²⁶ <https://eqar.eu/register/map.html>

²⁷ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2009:155:0001:0010:EN:PDF>

²⁸ OJ C 398, 22.12.2012, p. 1.

²⁹ European Guidelines on validation of non-formal and informal learning (2015).

<http://www.cedefop.europa.eu/en/publications-and-resources/publications/3073>

³⁰ http://ec.europa.eu/education/ects/ects_en.htm

³¹ OJ C 155, 8.7.2009, p. 11.

Annex III: Revision of the European Qualifications Framework

According to a recent Cedefop study³², 17 European countries report that they have put in place a credit system that allow for accumulation and transfer of learning outcomes in vocational education and training. Credit systems have become integrated parts of NQFs in a few countries, notably Croatia, Iceland, Malta, Slovenia and the UK. 12 countries do not currently operate with credit systems in vocational education and training out of these only seven do not have any initiatives at system level. A majority of the 17 countries base their national credit systems on the principles agreed at European level.

A key purpose of the EQF is to facilitate mobility and progression of individual citizens. This progression can take many forms, for example between various levels of education and training, within and between sectors of education and training, between education and training and the labour market and within and across national borders. Existing credit systems are mainly operating within sub-sectors of education and training. As a consequence they often do not support progress across different levels and types of education and training as well as across national borders. This underlines the need to consider possible linkages and synergies between existing systems, raising the question whether a more comprehensive approach to credit transfer can be developed. The comprehensive character of the EQF and (most) NQFs makes it possible to more precisely identify relevant pathways and how these can be supported by credit transfer and accumulation.

Challenges for credit systems in the EQF

In spite of the existing European credit systems in higher education and VET the following challenges remain:

- i. The link between the EQF and the existing and emerging credit transfer approaches is missing and makes it difficult to create synergies at national and European level.
- ii. ECTS and ECVET have been developed in separation from each other and have so far not been explicitly linked to the EQF.
- iii. The majority of existing credit systems, at national as well as European level, operate within limited institutional contexts, normally VET or HE without connections to other contexts.

The main challenge is to connect these sector based systems through a set of principles promoting credit transfer across all levels and types of qualifications. These principles should have an explicit focus on improving the permeability of systems and reducing obstacles to the progression and mobility of learners. They should be explicitly linked to and support validation of non-formal and informal learning. There is a need to explore how credit systems can better support validation arrangements and whether these can complement each other in ways which promote progression of individuals³³.

³² Cedefop (2016), *Implementation of ECVET in Europe, monitoring report 2015*. Forthcoming.

³³ It is interesting to observe the distinction between identification, documentation, assessment and recognition of learning outcomes used by the Recommendation on validation; this point to a stepwise approach relevant to credit arrangements.

3.6. EQF and qualifications awarded in third countries

Cultural differences, lack of understanding of qualifications and misperceptions lead to mistrust by EU companies when recruiting workers with non-EU qualifications. Conversely, Europeans going to work abroad may find similar obstacles.

Qualifications frameworks (national and regional) are rapidly emerging around the world as tools supporting mobility of learners and workers. According to an UNESCO, Cedefop and European Training Foundation (ETF) report, in 2014, more than 150 countries and territories were involved in the development and implementation of national³⁴ and regional qualifications frameworks³⁵.

Within this global development the EQF is increasingly considered an important international reference point for setting up national or regional qualifications frameworks. The EQF level descriptors have been a source of inspiration for regional and national qualifications frameworks being developed, such as for the ASEAN Qualification reference framework (ARQF)³⁶. Also an increasing number of third countries are looking for closer links between their frameworks and the EQF.

The challenge – lack of comparability of qualifications awarded in third countries and the EQF

The existing EQF recommendation does not provide any mandate for establishing relationships with third countries qualifications frameworks. This limits the ability of the EQF to improve comparability of European and third country qualifications which hinders labour market integration of migrants from outside the EU.

The state of play

> Countries with an association agreement with EU

Recently signed association agreements between the EU with Moldova³⁷, Georgia³⁸ and Ukraine³⁹ refer to the establishment of a national qualifications framework. The agreements with Georgia and Ukraine make a clear reference to the EQF Recommendation, suggesting *closer cooperation* between these countries and the EQF. The "*statut avancé*" between the EU and Morocco⁴⁰ mentions explicitly the possibility of an "approximation" (*rapprochement*) to the EQF.

> EHEA countries not in the EQF and not having an association agreement with the EU

The EQF and the QF-EHEA have been closely coordinated over the past eight years. The 2012 Bucharest Communiqué called on Bologna countries to ensure that upper secondary school leaving qualifications giving access to higher education would be considered as being linked to EQF level 4⁴¹. All EHEA countries that are not part of the EQF AG, namely

³⁴ <http://www.cedefop.europa.eu/en/publications-and-resources/publications/2213-0>

³⁵ <http://unesdoc.unesco.org/images/0024/002428/242887e.pdf>

³⁶ http://aanzfta.asean.org/uploads/docs/AECSP_Factsheets/AECSP_Fact_Sheet_AQRF_Apr15.pdf

³⁷ http://eeas.europa.eu/delegations/moldova/documents/eu_moldova/text_aa_dcfta_eneur-lex.europa.pdf

³⁸ http://www.eeas.europa.eu/georgia/pdf/eu-ge_aa-dcfta_en.pdf

³⁹ http://eeas.europa.eu/ukraine/docs/association_agreement_ukraine_2014_en.pdf

⁴⁰ http://eeas.europa.eu/delegations/morocco/documents/eu_morocco/feuillederoute-sa_fr.pdf

⁴¹ [http://www.ehea.info/uploads/\(1\)/bucharest%20communiqu%202012\(1\).pdf](http://www.ehea.info/uploads/(1)/bucharest%20communiqu%202012(1).pdf)

Annex III: Revision of the European Qualifications Framework

Armenia, Azerbaijan, Belarus, Moldova, Ukraine, the Russian Federation and Kazakhstan, are developing comprehensive national qualifications frameworks and are preparing for self-certification to the Qualifications framework of the EHEA.

➤ **Third country with mature qualifications frameworks**

In 2014-15 three pilot projects exploring comparability between the EQF and three mature qualifications frameworks, namely the Australian Qualifications Framework (AQF)⁴², the New Zealand Qualifications Framework (NZQF)⁴³ and the Hong Kong Qualifications Framework (HKQF)⁴⁴ were completed. Despite the challenges of comparing an operational NQF with the EQF, it has been possible to establish comparability between the EQF and the three frameworks and their levels. The following lessons were learned during this exercise:

- When engaging into a technical comparison between the EQF and mature NQFs, the nature, purpose and the governance of the EQF and the relationships between the EQF and the European NQFs need to be carefully explained.
- The relationship between the EQF and the QF-EHEA needs careful explanation.
- The technical work is time and resource intensive.

➤ **Other National Qualifications Frameworks across the world**

The EQF is a reference in EU funded projects implemented outside the EQF countries, such as the India EU Skills Development project⁴⁵, the Indonesian Qualifications Framework and more recently a project enhancing the AQRF and ASEAN Regional Quality Assurance which in addition looks at harmonising ASEAN Higher Education and setting up an ASEAN-EU Credit Transfer System.⁴⁶ Individual countries from the Gulf Region (Bahrein, United Arab Emirates) have expressed interest in relating their qualifications frameworks to the EQF.

➤ **Regional Qualifications Frameworks across the world**

During the past years several regional qualifications frameworks have seen the light throughout the world⁴⁷. So far none of these have approached the EQF for closer connections. However, this may happen in the near future. Of the regional qualifications frameworks in place, the ASEAN Reference Framework (AQRF) offers the largest potential also given the strong links between the EU and ASEAN countries. Like the EQF it functions as a device to enable comparison of qualifications, to support recognition of qualifications, to promote the quality of education and training and to facilitate labour mobility.

4. COMPARISON OF OPTIONS FOR WAYS AHEAD

This section looks at the benefits and costs of three possible options for the further development of the EQF. The baseline scenario describes the situation when the EQF would not be further developed. Option 1 relates to the Strengthening comparability of qualifications through reinforced referencing. Option 2 concerns establishing referencing

⁴² <http://www.aqf.edu.au/>

⁴³ <http://www.nzqa.govt.nz/>

⁴⁴ <http://www.hkqf.gov.hk/guie/home.asp>

⁴⁵ <http://www.india-euskills.com/>

⁴⁶ http://eua.be/news/15-05-21/Launch_of_SHARE_%E2%80%93_EU_support_to_ASEAN_higher_education_harmonisation.aspx

⁴⁷ See footnote 2.

Annex III: Revision of the European Qualifications Framework

criteria and a mechanism to allow referencing of international qualifications and international sectorial qualifications frameworks to the EQF. Option 3 concerns comparability of qualifications awarded in the EU with third country qualifications. Option 2 and 3 both build on option 1 and are not mutually exclusive.

4.1. Baseline scenario

The implementation of the EQF, based on the 2008 Recommendation, and following the EQF-acquis adopted by the EQF Advisory Group such as the 10 referencing criteria, would be pursued in its current terms. Existing work on the implementation of the learning outcome approach, on the referencing of national qualifications frameworks to the EQF and updates of these and of the development of national qualifications databases, to be interconnected at European level, would continue and be further intensified through additional guidance and mutual learning. The same will probably hold for the indication of EQF levels on degrees, certificates and supplements. Under this scenario the comparability of individual qualifications and their transparency to learners, workers and employers will emerge slowly. However the EQF and NQFs can be used as an information source on the level of qualifications to make their recognition easier

The baseline scenario does not address the absence in the current EQF of quality assurance principles across all types and levels of education and training and the absence of common principles for credit transfer. There will be no provisions on cooperation with third countries (seeking comparability between the EQF and third country qualifications frameworks).

4.2. Option 1 Strengthening comparability of qualifications through reinforced referencing

This option focusses on how to systematically strengthen the quality and relevance of the comparison of qualifications made through the EQF, making sure that the framework can be trusted by end-users, be these individual citizens, public institutions or private employers. While this will require a continuous and systematic updating of the referencing already carried out, it will also require a **deepening and broadening** of the reach of the EQF, making it possible to acquire transparent information on qualifications not yet included in the EQF. Option one sets out the following measures strengthening the EQF:

More consistency in and updating of the referencing process

The Recommendation would invite Member States to ensure that referencing is regularly updated and carried out in a consistent way both on the system level and in relation to single qualifications. Updating should take place with a maximum interval of five years. It should aim for improved transparency of qualifications and for strengthened comparability of national qualifications systems. A further strengthening of the comparability of the systems will require a more systematic approach where the decisions of countries as regards allocating qualifications to NQF levels, and the basis on which these decisions are based, are systematically compared.

Annex III: Revision of the European Qualifications Framework

Benefits	Costs
<ul style="list-style-type: none">- Enlarges credibility of NQFs and the EQF as a whole;- Ensures deepening and broadening of referencing, which increases its transparency and trustworthiness	<ul style="list-style-type: none">- More resource demanding for Member States

Acknowledgement of the referencing criteria by including them in the EQF Recommendation

The 10 EQF referencing criteria have been developed by the EQF Advisory Group in order to establishing a quality assurance mechanism for the referencing process. The criteria aim at ensuring trust and the involvement of all relevant stakeholders in the referencing process. They have also become a base of dialogue between the countries participating in the EQF.

Benefits	Costs
<ul style="list-style-type: none">- Improved clarity of the EQF Recommendation	<ul style="list-style-type: none">- Continuous efforts and resources by Member States to comply with reinforced referencing criteria

Common format for the description of qualifications and their learning outcomes

The information on qualification levels must be complemented by transparent information on the content (learning outcomes) and profile of qualifications for the EQF to become more relevant to individual citizens. Increased transparency requires, in addition to information on levels, a clear description of what the holder of a qualification knows, understands and is able to do. Furthermore for reasons of trust it is important to have information on the awarding body and is it desired to have some information related to quality assurance and if relevant credits.

The comparability of qualifications will be improved through the introduction of a common format for describing learning outcomes, to be developed with Member States and relevant stakeholders. Development of the common format will build on the experiences gained at national level as well as from the Europass certificate and diploma supplements. A common format could offer:

- A clear reference to the holder of the certificate (and not the provider or institution offering the training)
- A consistent use of action verbs to signal the complexity of the skills and competences
- A clear reference to the object and scope of learning
- An indication of the occupational/social context of the learning

These elements are today well known to most institutions, sectors and countries and would allow those involved to structure their descriptions in a clear way. To support European comparability, the learning outcomes presented through the common format should be provided in the national language as well as in English.

Annex III: Revision of the European Qualifications Framework

While not replacing the formats and approaches already used at national and institutional level, this presentation format will facilitate comparison and sharing of information on qualifications at national and European level. The use of this common set of information by private and international qualifications would increase overall transparency and can be seen as an important contribution to ‘consumer protection’ in this area.

The common information to be used when presenting information on qualifications in databases, allowing for systematic exchange of information at national and international level would be based on optional and required data, which have already been developed in close cooperation with Member States in the context of the EQF Advisory Group and ESCO Member States working group.

Required data would include: title of the qualification, subject, country/region, EQF Level (if existing), description of the qualification (knowledge, skills, responsibility/autonomy or an open text field describing what the learner is expected to know, understand and able to do) and the awarding body.

Optional data would include: Credit points/ notional workload needed to achieve the learning outcomes, internal quality assurance processes, external monitoring body, further information on the qualification, source of information, link to relevant qualification supplement, URL of the qualification, information language, entry requirements, expiry date (if relevant), ways to acquire qualification and relationship to occupations

Both formats should influence and guide the future development of qualification supplements in Europass.

Benefits	Costs
<ul style="list-style-type: none"> - Allows for systematic sharing of learning outcomes based information between institutions and countries and will make it possible to better understand the content and profile of the qualification in question - Play a particularly important role in increasing transparency of private and international qualifications with high labour market value, where information on learning outcomes currently is scarce 	<ul style="list-style-type: none"> - Will require countries to invest in the preparation and update of qualifications descriptions including learning outcomes - Will require active promotion towards private and international awarding bodies

Clarifying the "competence" descriptor

A recurring confusion in discussions is caused by the different use of the concept 'competence' in Annex I and III of the 2008 Recommendation: annex I refers to the overarching definition of ‘competence’⁴⁸ as defined by and Annex II uses the more limited application of the competence concept as applied by the third column of learning outcomes descriptors. To eliminate this confusion the term 'competence' as heading of the third column in annex II would be replaced by the terms 'autonomy and responsibility' to be more faithful

⁴⁸ Competence is the proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development.

Annex III: Revision of the European Qualifications Framework

to the corresponding learning outcomes descriptors. This change of headline will not affect the EQF level descriptors themselves and the way these have supported the referencing of national qualifications levels to the EQF. By removing what has been seen as a conceptual inconsistency, the change will strengthen the learning outcomes approach promoted by the EQF.

Benefits	Costs
<ul style="list-style-type: none">- More clarity of the descriptors, removing existing confusion	<ul style="list-style-type: none">- Some Member States may feel the need to modify the descriptors of their national qualifications framework when updating it

Allocating EQF levels to Common Training Frameworks

For the consistency of information and of referencing it is important that the EQF levels to be allocated to Common Training Frameworks through Commission Delegated Acts (based on article 49 of Directive 2005/36/EC) reflect the EQF learning outcomes descriptors corresponding to those levels.

Benefits	Costs
<ul style="list-style-type: none">- Consistent referencing of qualifications complying with the common training frameworks across Europe- Clarity through a single entry point for the EQF levelling of Common Training Frameworks	<ul style="list-style-type: none">- Resources needed at national level to (develop and) reference national qualifications complying with the common training framework

Common quality assurance principles for all types and levels of qualifications that are to be referenced to the EQF

There is a need to generate mutual trust between institutions, sub-sectors of education and training and countries for the EQF to contribute to the reduction of obstacles to mobility and progression (in education and employment). A revised set of common principles would in particular draw attention to the role of quality assurance in underpinning all levels and types of qualifications referenced to the EQF. The focus on quality assurance of learning outcomes and certification would address the design of qualifications as well as the application of the learning outcomes approach and the process of certification, ensuring valid and reliable assessment according to agreed and transparent learning outcomes based standards. The quality assurance principles would be fully compatible with the European Standards and Guidelines for Quality Assurance in the European Higher education Area (ESG) in Higher Education and EQAVET in vocational education and training. Quality Assurance principles for General Education are under development.

Furthermore, for transparency purposes, the EQF Recommendation would recommend the European Commission to explore with Member States and stakeholders to establish a register of external monitoring bodies that comply with the common principles. The common principles require that quality assurance is based on self-assessment and external review. Depending on the national context, external review can be performed by public, semi public

Annex III: Revision of the European Qualifications Framework

and private monitoring bodies. The external monitoring body would at least verify if the common quality assurance principles are applied. Depending on the type of qualification, more specific criteria (like the ESG) can apply. Again, depending on national contexts, awarding bodies can choose the external monitoring body. Both changes would imply a revision of Annex III of the current Recommendation.

Benefits	Costs
<ul style="list-style-type: none"> - Sets principles for QA for all types and levels of qualifications related to the EQF, including non-formal and international qualifications, enhancing the transparency and trust - Increased requirements to quality assurance of the certification process and in relation to learning outcomes will strengthen the quality leading to higher trust - The existence of a register with external monitoring bodies will make it more clear for awarding bodies what external monitoring bodies comply with requirements and will create transparency to the greater public on the quality of the awarding body 	<ul style="list-style-type: none"> - Increases the need to apply the Quality Assurance principles at national and European level and will thus require additional resources in countries where these principles would not yet be respected

Common principles for credit systems related to the EQF

A key purpose of the EQF is facilitating mobility and progression of individual citizens - between various levels of education and training; within and between sectors of education and training; and between education and training and the labour market and within and across borders and systems-. A set of common principles on the role of credit arrangements outlines a vision for cooperation in this area. These principles stress the need for qualifications frameworks and credit arrangements to interact, seeking to promote practical ways that allow learners, education and training providers and employers to better understand and compare qualifications. By giving credit to assessed and validated outcomes of previous learning they can support the validation of non-formal and informal learning, the combination of different learning experiences and flexible learning pathways.

Benefits	Costs
<ul style="list-style-type: none"> - The principles on credit systems push for credit systems to systematically interact supporting mobility across learning contexts - The principles on credit systems push for support to the validation of non-formal and informal learning to make better use of available skills 	<ul style="list-style-type: none"> - Not all countries operate credit systems reducing the relevance of the principles-

4.3. Option 2: Establishing referencing criteria and a mechanism to allow referencing of international qualifications and international sectorial qualifications frameworks to the EQF

The problem that the same international qualification can be referenced with two different EQF levels could be overcome by referencing international (sectoral) qualifications and frameworks directly to the EQF. This referencing would need to take into account the quality assurance principles for the referencing process and the new common quality assurance principle for qualifications referenced to the EQF. The referencing process would take place in full cooperation with Member States. The referencing result at EU level would fully respect the decision of each Member State to include, or not, the qualification in its national framework.

Benefits	Costs
<ul style="list-style-type: none"> - Can ensure coherent referencing of international qualifications by sharing of information and coordinated advice - Would save time by introducing one entry point to the EQF for international (sectoral) qualifications - Would ensure consistent referencing of international (sectoral) qualifications across countries and respect principles of quality assurance as established under the EQF 	<ul style="list-style-type: none"> - International qualifications could still have to be included into NQFs if Member States wish so - A European level solution will require additional human and financial resources at EU level

4.4. Option 3: Enhancing comparability of qualifications awarded in the EU with third country qualifications

Better comparability and understanding of the qualifications frameworks of third countries and the (types and levels of) qualifications that are part of them would extend the zone of trust between EQF countries and these countries. It would facilitate legal circular migration of skilled workers with these countries and easier recognition at home of returnee's qualifications obtained in EU countries. Increased transparency and mutual understanding can better support recognition practices. Through this it can support the EU migration agenda. Any process of enhancing comparability of the EQF with third country frameworks should be developed in accordance with the priorities for countries and regions set in the context EU external cooperation policies (e.g. in the context of the trade agreements, recognition and mobility). Option 2 requires the agreement on clear criteria for establishing these relationships with third country qualifications frameworks.

Under this option mechanisms are established through which the comparability of qualifications awarded in the EU and third country qualifications is enhanced, distinguishing between the following possible cases:

- Structured dialogues with EU Neighbourhood countries with an association agreement with the EU, possibly resulting in referencing of the NQFs concerned to the EQF in accordance with the EQF referencing criteria and principles for quality assurance;

Annex III: Revision of the European Qualifications Framework

- Alignment of the EQF with mature national qualifications frameworks in the world including level-to-level comparisons;
- Alignment of the EQF with mature, regional qualifications frameworks in the world, including level-to-level comparisons;
- EU support (e.g. through development aid) to countries for developing NQFs.

Benefits	(Opportunity) Costs
<ul style="list-style-type: none"> - Improved understanding of qualifications from third country national or regional frameworks in Europe, and vice versa - Enhances the credibility of the EQF worldwide - Confirms position of EQF as an important international reference point - Opportunity for the EQF to set high standards in terms of quality assurance and learning outcomes requirements for qualifications frameworks worldwide 	<ul style="list-style-type: none"> - Resources needed in order to establish a dialogue, and draft risks and benefits analyses and comparability studies with the third country(ies) concerned - Risks of not establishing relationships with third country frameworks: <ul style="list-style-type: none"> o EQF could become isolated from regional frameworks and NQFs in other parts of the world, reducing the way the EQF can aid transparency and mobility for European citizens outside the EQF area o proliferation of links between third country qualifications framework and European NQFs which may lead to inconsistent interpretations of the EQF o less influence on global developments such as UNESCO initiatives

4.5. Conclusion on the comparison of options 1, 2 and 3

All three options ensure continuity of ongoing processes of referencing to the EQF and invested efforts and resources by Member States to do so, as does the baseline scenario. It is not possible to give exact estimates of the monetary benefits and costs of the different options.

The benefits of recommended actions under option 1 are that they will strengthen the trust, understanding and comparability of national qualifications both on the level of frameworks and systems and on the level of single qualifications. The use of standard formats for describing qualifications (including their learning outcomes) in databases on national and European level will make qualifications better comparable and thus better understandable and easier to access by employers and education and training providers. The common principles on quality assurance and on credit systems that are part of option 1 will be effective for easier transitions between education and training systems and between education/training and the labour market and thus all together improve the permeability of education and training systems. Easier transitions will also motivate people to engage in further learning with increased chances to enhance their employability.

Annex III: Revision of the European Qualifications Framework

Most of the costs of the actions under option 1 relate to efforts and resources by Member States. In particular the regular updates of referencing and improving the qualifications descriptions.

Option 1 deepens and broadens the development that started further to the adoption of the 2008 Recommendation. Given the investment already done in the development of national qualifications frameworks, the transition to a learning outcomes approach and considering the fact that these efforts have been a strong national policy choice, it is assumed that the benefits of deepening and broadening this development will outweigh the cost of doing so. One could further assume that the opportunity costs for not engaging into option 1 are higher than the investment in human and financial resources of doing so. Not addressing risks of inconsistencies may undermine the credibility of the EQF in the long run.

The actions under option 2 will bring benefits of strengthening the transparency, understanding and comparability of international (sectorial) qualifications, in particular by enhancing their consistency in referencing through a common process ensuring that the same EQF level is attributed to the same qualification across the Member States. Costs of the actions under option 2 relate to efforts and resources by the European level and by Member States for referencing international (sectorial) qualifications to the EQF, in particular related to setting up common processes supporting such referencing. No unequivocal overall benefits/costs balance at EU and at national level can be given to option 2. The final benefits/costs balance will depend on how these common processes will be set up.

Option 3 has particular policy relevance with regard to migration, both to attract high skilled workers and with regard to the integration of migrants in Europe. Also here the costs relate to a large extent to the investment of resources to setting up robust processes to ensure trust and transparency in the comparability qualifications awarded in the EU and Third Countries. Given the current migration crisis the political benefits of doing so outweigh the costs in terms of resources.

Both options 1 and 3 should be pursued in the Commission proposal for the revision of the EQF Recommendation. Option 3 is included in the proposal given the current migration crisis the political benefits of doing so outweigh the costs in terms of resources. For option 2 the benefits/costs balance is more mixed. If option 2 is not retained in the proposal for a revised EQF, the continuity of the situation under the existing Recommendation should be maintained.