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COMMISSION STAFF WORKING DOCUMENT

Education and Training Monitor 2013

(Volume 2: Country analysis - Part 6 of 7: Poland, Portugal, Romania, Slovakia)

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1. Key indicators and benchmarks

<i>Europe 2020 headline targets</i>	Poland		EU average		Europe 2020 target / Benchmark
	2009	2012	2009	2012	
1. Early leavers from education and training (age 18-24)	5.3%	5.7%	14.2% ^{EU28}	12.7% ^{EU28}	EU target: 10% National target: 4.5%
2. Tertiary educational attainment (age 30-34)	32.8%	39.1%	32.1% ^{EU28}	35.7% ^{EU28}	EU target: 40% National target: 45%

ET 2020 Benchmarks

3. Early childhood education and care (4 years old - year before start of compulsory primary)	70.9%	78.4% ¹¹	91.7%	93.2% ¹¹	95%		
4. Basic skills Low achievers (15 year-olds; Level 1 or lower in PISA study)	Reading	15.0%	:	19.6%	:	15%	
	Mathematics	20.5%	:	22.2%	:	15%	
	Science	13.1%	:	17.7%	:	15%	
5. Learning mobility	Initial vocational training (IVET)	a. Students participating in Leonardo da Vinci programs as a share of vocational students at ISCED 3		0.5%	0.7% ¹¹	0.6%	0.7% ¹¹
	Higher Education	b. Erasmus inbound students as % of student population in host country			0.4% ¹¹		1.1% ¹¹
		c. Inbound degree mobile students as % of student population in the host country			1.0% ¹¹		7.0% ¹¹
6. Employment rate of graduates (age 20-34) having left education 1-3 years before reference year	78.4%	73.3%	78.3%	75.7%	82%		
7. Adult participation in lifelong learning (age 25-64)	4.7%	4.5%	9.3%	9.0%	15%		

Proposed ET 2020 benchmark

8. Foreign languages skills	a. ISCED 2 students at proficiency level B1 or higher in first foreign language ¹	:	25.0% ¹¹	:	43.5% ¹¹
	b. ISCED 2 students learning two or more foreign languages	48.7%	79.0% ¹¹	58.6%	60.8% ¹⁰

Other ET 2020 Indicators

9. Investment in education and training	a. General government expenditure on education (% of GDP)		5.6%	5.5% ¹¹	5.5%	5.3% ¹¹
	b. Annual expenditure on public and private educational institutions per pupil/student in € PPS	ISCED 1-2	€ 3,558 ⁰⁸	€ 4,279 ¹⁰	€ 5,732 ⁰⁸	€ 6,021 ¹⁰
		ISCED 3-4	€ 3,223 ⁰⁸	€ 3,735 ¹⁰	€ 6,964 ⁰⁸	€ 7,123 ¹⁰
		ISCED 5-6	€ 4,630 ⁰⁸	€ 5,951 ¹⁰	€ 9,309 ⁰⁸	€ 9,168 ¹⁰
10. Digital competences	a. Pupils in grade 4 (ISCED 1) using computers at school		:	56.9% ¹¹	60.7% ⁰⁷	64.7% ¹¹
	b. Individuals aged 16-74 with high computer skills ²		14.0%	18.0%	25.0%	26.0%
11. Entrepreneurial competences	Individuals aged 18-64 who believe to have the required skills and knowledge to start a business		:	54.0%	42.3% ^a	42.0% ^a
12. Vocational education and training	Share of vocational students at ISCED 3		47.2%	48.3% ¹¹	49.6%	50.3% ¹¹
13. Skills for future labour markets Projected change in employment 2010-2020 in %	High qualification		:	27.0%	:	19.1% ^{EU28}
	Medium qualification		:	-11.2%	:	4.6% ^{EU28}
	Low qualification		:	-1.0%	:	-20.2% ^{EU28}
14. Low-skilled adults	Literacy		:	18.8%	:	19.9% ^{EU17}
	Numeracy		:	23.5%	:	23.6% ^{EU17}
	Problem solving in technology rich environments ³		:	38.0%	:	26.9% ^{EU13}

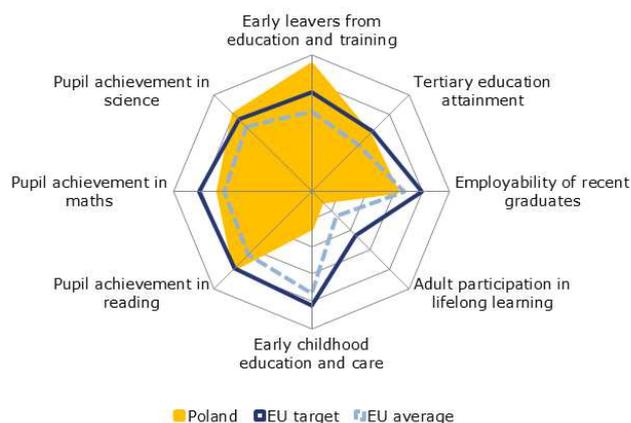
Source: Cedefop: 13 / EAC: 10a,b / European Survey on Language Competences (ESLC): 8a / Eurostat (Government finance statistics): 9a / Eurostat (LFS): 1, 2, 6, 7 / Eurostat (ISS): 10b / Eurostat (UOE): 3, 8b, 9b, 10c, 12 / IEA TIMSS: 10a / Global Entrepreneurship Monitor: 11 / OECD (PIAAC): 14 / OECD (PISA): 4

Notes: ⁰⁷ = 2007, ⁰⁸ = 2008, ⁰⁹ = 2009, ¹⁰ = 2010, ¹¹ = 2011, e= estimate, a= unweighted average b= break, p= provisional

Number of countries included in EU average: PISA=25, Entrepreneurship=18, Language skills=13, ICT/Computers at school=13, others: EU27

¹= average of skills tested in reading, listening, writing, ²= having carried out 5-6 specific computer related activities, ³= Results cover people with scores below level 1 as well as people who have no computer experience or failed the ICT test

Figure 1. Position in relation to highest (outer ring) and lowest performers (centre)



Source: DG EAC calculations on the basis of data from Eurostat (LFS 2012 and UOE 2011) and OECD (PISA 2009). Note: all scores are set between a maximum (the highest performers visualised by the outer ring) and a minimum (the lowest performers visualised by the centre of the chart).

2. Main challenges

One of the major challenges for Poland remains skills mismatch, which contributes to the currently high youth unemployment.¹ More young people must be attracted into vocational education and training (VET) by raising the quality and attractiveness of initial VET and by stimulating quality work-based learning and apprenticeships. There is also a challenge regarding the quality of teaching in certain Higher Education Institutions, teaching the skills needed on the labour market and cooperation with employers. Participation of adults in lifelong learning has decreased in recent years and remains very low in EU comparison. At the same time low-skilled workers constitute the largest share of the unemployed. Poland also scores below the EU average regarding pre-school education.

Therefore the 2013 European Semester country-specific recommendation (CSR) on education focused on the following topics: increasing the availability of apprenticeships and work-based learning, strengthening cooperation between schools and employers, improving the quality of teaching and adopting the proposed life-long learning strategy, investing in affordable quality childcare and pre-school education, ensuring stable financing and qualified staff.

3. Investing in skills and qualifications

Investing in education and training in a context of economic crisis

General government expenditure on education as a share of GDP has remained stable since 2000 and is close to the EU average (5.5% vs. 5.3% EU average in 2011). The expenditure on education was not significantly reduced due to financial crisis. Public education spending (including spending of municipalities, foundations, etc.) in 2011 was 7.8% of GDP and there was 13% growth between 2001 and 2008. Teachers' salaries increased in 2012 following the reform of the salary structure. Nevertheless, the economic crisis contributed to the merger and closure of some education institutions e.g. primary schools in 2010-2012 as well as reductions in the employment of teachers², which the Polish government argues to be also due to the low birth rate Poland also reduced central and local expenditure on construction, maintenance and renovation of educational buildings. The spending on ICT equipment in schools was also reduced.

Regarding investment in higher education, Poland introduced several competition based financing schemes financed under the EU Structural Funds; and example the best higher education institutions will receive additional funding for quality enhancing activities from the national budget. In the period 2012-2015 there will be a 30% increase in the minimum salary for the employees of public higher education institutions (HEIs).

Skills

In terms of basic skills, 15-year olds' performance on 2009 PISA tests continues to outperform the EU average in maths (20.5%) and reading (15%), while improving in particular in science (13.1% in 2009 compared to 17.0% in 2006)³. However, there is scope for improving performance on non-standard calculations and on analysing and using different types of written texts. Problem solving, critical thinking and teamwork, could be developed already at this very early stage of education. As more boys than girls choose engineering and technical studies there is a challenge to change stereotypes regarding gender based career paths in primary and secondary school books and to provide adequate career guidance.

¹ Employment rates of graduates (ISCED 5-6) aged 20-34 who have graduated no more than three years ago was 82,6% in 2011, down from 87% in 2008 and now just below the EU average for higher education graduates.

² Source: Eurydice report : 'Funding of Education in Europe. The impact of the economic crisis', 2013

³ Source: OECD (PISA 2006 & PISA 2009)

The results are a bit different when it comes to TIMSS and PIRLS tests; Poland scores above the average of the countries who participated in the tests in reading as in PISA, scores around average in science and performs significantly worse in mathematics⁴.

In order to attract more young people to choose technical studies and overcome the current negative trend in mathematics education, organisational and curricular changes have been introduced, e.g. in 2010 Poland introduced a compulsory mathematics exam in the matura (exit national examination for upper secondary education).

Teacher training/continuous training to introduce modern teaching methods and new class organisation stimulating teamwork, solving complex problems without ready-to use patterns, creativity to address new ways of work and cooperation and the needs of employers remain a challenge. One of the measures to improve the quality of teaching was the recent introduction of competence frameworks as professional standards for teachers⁵.

ICT skills of the population are low in comparison with the EU average. In most schools ICT infrastructure levels are significantly below the EU average. Close to 40% of primary students attend schools with low ICT equipment levels and no internet facilities. At EU level the average is 15%. At secondary level there are still close to 30% of Polish students in such schools comparing to an EU average of around 6%.⁶ The issue of ICT skills is currently being addressed by the "Digital School" programme financed under the EU Structural Funds and launched in 2012. It focuses on the computerisation of Polish schools and raising ICT competences. The programme includes actions on ICT infrastructures in schools, teacher training and the creation of open digital textbooks. In 2012, 3,500 Polish primary schools (27% of all potential applicant schools) applied for inclusion in the project. To promote, disseminate and implement a distance learning system in educational institutions, Poland also started to implement the "Distance Learning Project" (2009-14) with financial support from the EU Structural Funds, whose beneficiaries are employees, teaching staff and educational institutions.

As regards entrepreneurship, the share of the population believing to have the required skills and knowledge to start a business is higher (54% in 2012) than the EU average 50%⁷. The average number of foreign languages per pupil at ISCED 2 was in line with the EU average (1.5 in 2011)⁸.

In order to help adults validate their skills quicker, the proposal of the amendment of law on higher education stipulates that adults over the age of 25 will be able to get an academic degree and get some subjects passed without participating in the regular lectures.

The employment pattern in Poland up to 2020 is forecast to be fairly different from the EU average, with a stronger decrease in medium qualification jobs (-11.2%) than in low qualification ones (-1.0%) and high demand for high qualifications (27%)⁹, whereas in EU there will be a decrease in the demand for low qualification jobs (-20.2%) and an increase in the demand for medium (4.7%) and high (19.2%) qualification jobs.

Poland has a national qualification framework in force and presented their national referencing report to the EQF Advisory Group.

4. Tackling early school leaving and raising the bar in school education

Concerning the Europe 2020 targets, Poland is one of the best performers in the EU regarding early school leaving, with a rate of 5.7% vs. the EU average of 12.7% in 2012. However the ESL has been going slowly up in the recent years. The national target for 2020 is 4.5%. More boys (7.8%) than girls (3.5%) leave school early.¹⁰

While the early school leaving (ESL) rate remained very low in recent years, the share of people aged 18-24 not in employment, education or training in 2011 was 15.5%, compared to 12.3% in 2008.

Teacher training/continuous training supporting the introduction of modern teaching methods stimulating teamwork, solving problems remain a challenge. 52% of teachers worked in schools where the school principal reported that the instruction was hindered to some extent by a shortage or an inadequacy of instructional material.¹¹ More than 50% of teachers are below 40 years of age vs. TALIS average of 43%. 94% of teachers completed a Masters' degree. Poland is among the countries where contractual employment of teachers for less than one year is more common.

⁴ Source: TIMSS, PIRLS 2011

⁵ Source: Eurydice report: 'Key data on Teachers and School Leaders in Europe', 2013

⁶ European Schoolnet & University of Liege (2013): Survey of Schools: ICT in Education, Benchmarking access, use and attitudes to technology in Europe's schools. EUN, Brussels.

⁷ Source: Global Entrepreneurship Monitor, <http://www.gemconsortium.org/key-indicators>

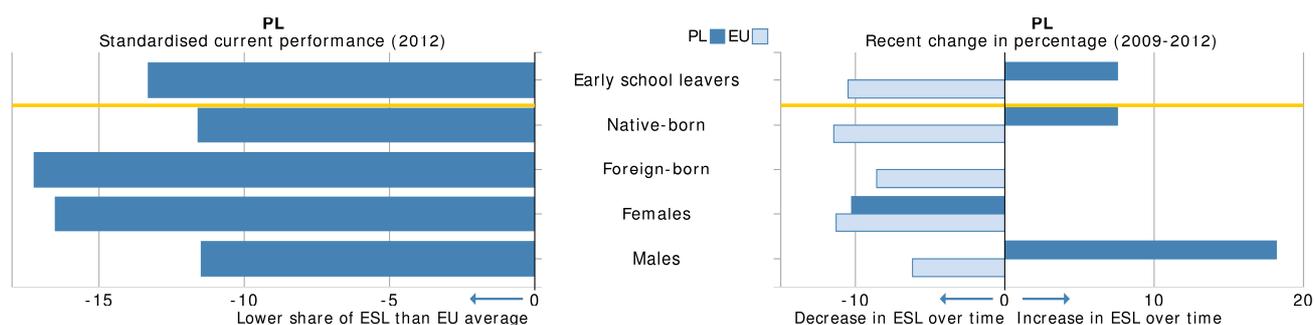
⁸ Source: Eurostat

⁹ Source: Cedefop, 2012 Forecast

¹⁰ Source: Eurostat (EFS)

¹¹ Source: 'Creating Effective Teaching and Learning Environments. First results from TALIS', OECD 2009

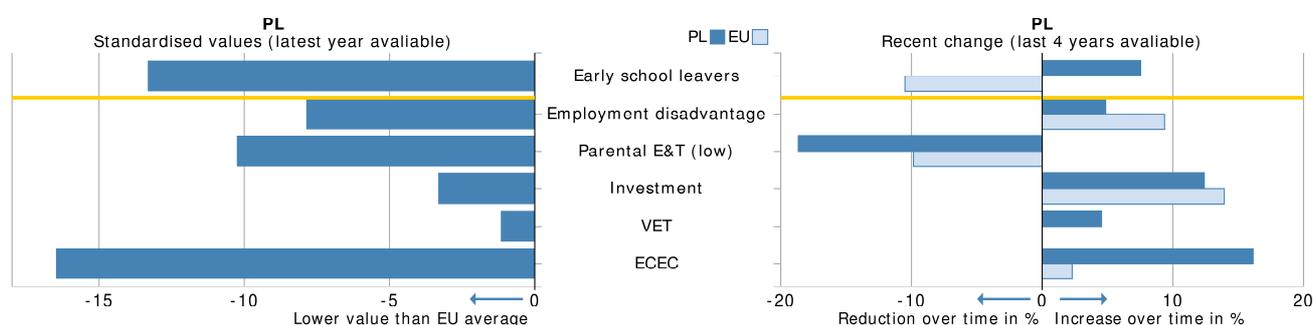
Figure 2. Early leavers from education and training: sub-groups



Source: JRC-CRELL. Note: ESL = early school leaving. See Annex 2 for further information.

Participation in early childhood education is one of the lowest among the EU Member States (78.4% against the EU 2020 target 95%), despite a steady increase since 2000. Government efforts concentrated on the implementation of the 'Toddler programme'. As a result, the number of nurseries almost doubled over the last two years, but the total number still remains extremely low and does not satisfy needs (36000 places compared to 400000 children born annually in Poland). Furthermore, most investment (more than 90% of the total) is concentrated in metropolitan areas and selected municipalities. In 2013, expenditure on childcare is expected to double, reaching EUR 25 million. Concerning pre-school education, the government foresees a significant increase in the spending for 2014. According to a new regulation (adopted in July 2013) starting from the September 2015, every four – year – old will have a right to participate in pre-school education. And from September 2017 every three-year-old will have ensured place in pre-school education. Since September 2011 pre-school education is obligatory for all five-year- olds.

Figure 3. Early leavers from education and training: sub-indicators



Source: JRC-CRELL. Note: see Annex 2 for an explanation of the sub-indicators.

5. Encouraging participation in tertiary education and modernising higher education

As regards the Europe 2020 target on tertiary education, the Polish tertiary attainment rate strongly increased over the last decade and was at 39.1 % in 2012 (compared to an EU average of 35.7%). Poland has the ambition to achieve 45% rate by 2020. More women (46.5%) than men (31.9%) have tertiary education¹².

Compared to the EU average, Poland shows a low share of graduates in science, mathematics and technology (15.8%) and in health and welfare (8.9%) compared to a high rate in law, business and social studies (42.8% in 2011)¹³. The European Social Fund (ESF) and the European Regional Development Fund (ERDF) are used to raise student numbers in mathematics, science and technology.

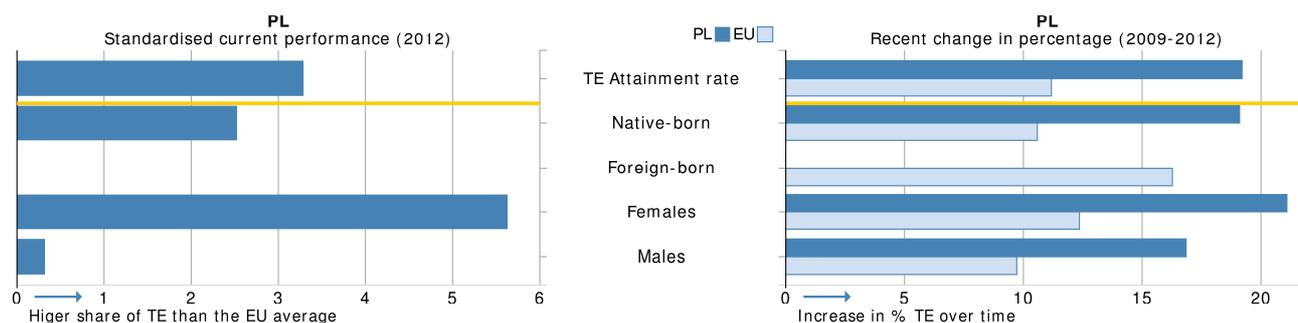
Even though tertiary level education still provides an employment advantage (see sub-indicators below), the unemployment rate among higher education graduates is high. Employment rates of graduates (ISCED 5-6) aged 20-34 who have graduated no more than three years ago was 82.1% in 2012, down from 87% in 2008 and now just above the EU average¹⁴.

¹² Source: Eurostat (LFS)

¹³ Source: Eurostat (UOE)

¹⁴ Source: Eurostat

Figure 4. Tertiary education attainment: sub-groups

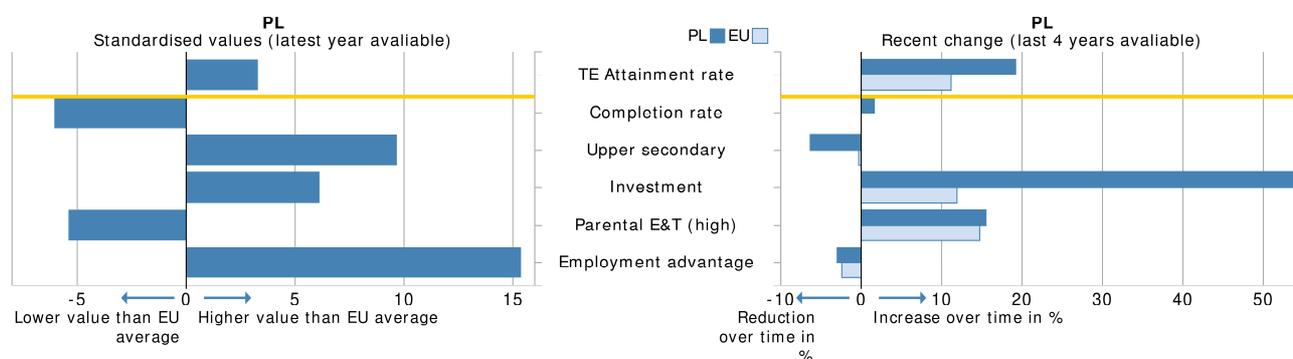


Source: JRC-CRELL. Note: TE = tertiary education. See Annex 2 for further information.

There is also a challenge regarding the quality of teaching in Higher Education Institutions, especially private ones, to equip graduates with the skills needed at the labour market such as problem solving, critical thinking, teamwork, etc.

The reform of the education and science system introduced in 2010-2011 was a first step in strengthening university-business links and making the courses more flexible and based on learning outcomes. Further legislative amendments presented in 2012 differentiate between academic and vocational higher education institutions and introduced dual studies linking academic studies with practical training in companies. A list of faculties that received a negative opinion from accreditors will be published so that potential students are better informed before making their choice. More cooperation between the world of work and education will be encouraged. Academic Career Offices (Akademickie Biura Karier) will actively join the programme "Youth on the labour market".

Figure 5. Tertiary education attainment: sub-indicators



Source: JRC-CRELL. Note: see Annex 2 for an explanation of the sub-indicators.

Poland focuses also on improving the excellence of research and innovation by introducing a system of competitions for funding the best research centres and research topics and best study programmes. Grants are also given to the best PhD students and most talented students.

6. Facilitating the transition from education to work and reshaping vocational training

Due to the crisis, transition from education into work has become problematic. Youth unemployment of 15-24 year olds is rising and is now above the EU average (26.5% in 2012 vs. 17.2% in 2008)¹⁵ mainly due to insufficient match between education and labour market needs. The employment rate of graduates (20-34 years old, upper secondary and tertiary) has decreased by 6 percentage points since 2006 and remains slightly below the EU average (73.3% vs. EU average 75.7% in 2012)¹⁶. The challenge is to attract more young people into vocational education and training (VET) by raising the quality and attractiveness of Initial VET and stimulating quality work-based learning opportunities and apprenticeships.

¹⁵ Source: Eurostat

¹⁶ Source: CRELL calculations based on Eurostat LFS data

In 2011, 48.3% of all students in upper secondary education were enrolled in vocational upper secondary education (vs. 50.3% EU average and with an increase by 1.1 percentage points since 2009).¹⁷ The system is mostly school-based.

To improve the quality of vocational training, a VET reform has been implemented as from the 2012/2013 school year. Schools can now create curricula which are based on learning outcomes, and qualifications can be obtained on special courses which are certified separately during external exams, already in the course of the studies. Also soft skills such as communication, team work, problem solving are taken into account in the programmes. VET schools are encouraged to involve companies in the education process, by creating curricula, participating in the exam boards and providing practical training opportunities. Different projects financed through the ESF produce useful tools for modernising VET, e.g. model for cooperation of vocational schools/ institutions with employers.

There is still a challenge to stimulate cooperation between different actors: companies must be more involved in curriculum creation and offer quality work-based learning opportunities (apprenticeships, on-the job training periods). The provision of high quality career guidance in VET to pupils and their parents remains a challenge in all regions.

To increase the attractiveness of vocational schools among lower secondary school Poland has decided to undertake a programme called "Vocational School – a School of a Positive Choice"(2010-12) which included a set of promotion and awareness raising activities, e.g. on Polish TV.

To promote cooperation between enterprises, universities and vocational schools, Poland started to implement the "Business for education" project to strengthen cooperation between education and companies and increase knowledge, skills and competences of students.

7. Upgrading skills through lifelong learning

Adults (aged 16-65) in Poland score below the EU average in all the three domains tested by the Survey of Adult Skills (PIAAC¹⁸): literacy, numeracy and problem solving in technology rich (ICT) environments. About 20% of adults have no computer experience: this is significantly worse than the EU average (14%); however young people (aged 16-24) perform closer to the EU average. They also score better than the overall population in literacy (by 14 points, i.e. equivalent to skills usually acquired with 2 years of education).

The performance of young people (aged 16-29) with upper secondary education is only slightly better than that of people with at most lower secondary education. The survey also shows that upper secondary education graduates (both from general education and VET) aged 16-29 perform close to the EU average in literacy and slightly below in numeracy.

Poland has one of the largest differences on the adult literacy scale related to socio-economic background (education level of parents) and is one of the countries with the strongest association between socio-economic background and literacy proficiency among young people.

Poland has also a large proportion of inactive people among the high skilled population (about 24%). Finally, the survey shows that almost 19% of adults have a low skill level (at most level 1) in literacy and 23% in numeracy, close to the EU average. However, low skilled people are 7 times less likely to participate in job-related learning compared to high skilled people¹⁹.

Participation of adults in lifelong learning has slightly decreased in recent years and remains very low in comparison to the EU average (4.5% vs. 9.0% in 2012). At the same time low-skilled workers, whose participation in lifelong learning is even lower, constitute the largest share of the unemployed.

Only 22% of all enterprises (compared to 66% in EU 27) provided continuing vocational education and training in 2010 with 22 hours of training per participant²⁰.

55 % of employees, employed in companies providing continuing education and training (CVT) participated in CVT courses against 48% of EU average²¹. 29.1% employees participated in non-formal and informal education in 2010 against 47.4% EU average²².

¹⁷ Source: CEDEFOP, 2010

¹⁸ Volume I of the Education and Training Monitor (chapter 6) provides an overview of the results of the survey. Skills levels are presented either in terms of average score points or proportion of adults at a given proficiency level in literacy or numeracy (level 1 to 5) or problem solving in technology-rich (ICT) environments (level 1 to 3 or no ICT experience).

¹⁹ At EU level, low skilled adults are 5 times less likely to participate in job-related learning than high skilled adults.

²⁰ Source: Eurostat, CVTS 2010

²¹ Source: Eurostat, *ibid*

²² Source: Eurostat, AES 2011

The strategy document "Lifelong Learning Perspective (2012-20)" and its accompanying Action Plan was drafted and contains a comprehensive approach to lifelong learning, including the provision of skills in the future. This initiative needs still to be adopted in the course of 2013 and could play a key role in fostering human capital development. Following the recent VET reform, there is more flexibility in the continuing education system – adults will have the possibility to acquire or complete their vocational qualifications during special courses and take the exams to have their qualifications confirmed without the necessity to attend the vocational education and training school.

1. Key indicators and benchmarks

<i>Europe 2020 headline targets</i>	Portugal		EU average		Europe 2020 target / Benchmark
	2009	2012	2009	2012	
1. Early leavers from education and training (age 18-24)	31.2%	20.8%	14.2% ^{EU28}	12.7% ^{EU28}	EU target: 10% National target: 10%
2. Tertiary educational attainment (age 30-34)	21.1%	27.2%	32.1% ^{EU28}	35.7% ^{EU28}	EU target: 40% National target: 40%

ET 2020 Benchmarks

3. Early childhood education and care (4 years old - year before start of compulsory primary)	88.2%	95.4% ¹¹	91.7%	93.2% ¹¹	95%	
4. Basic skills Low achievers (15 year-olds; Level 1 or lower in PISA study)	Reading	:	19.6%	:	15%	
	Mathematics	:	22.2%	:	15%	
	Science	:	17.7%	:	15%	
5. Learning mobility	Initial vocational training (IVET)	a. Students participating in Leonardo da Vinci programs as a share of vocational students at ISCED 3	0.5%	0.5% ¹¹	0.6%	0.7% ¹¹
	Higher Education	b. Erasmus inbound students as % of student population in host country	:	2.2% ¹¹	:	1.1% ¹¹
		c. Inbound degree mobile students as % of student population in the host country	:	3.4% ¹¹	:	7.0% ¹¹
6. Employment rate of graduates (age 20-34) having left education 1-3 years before reference year	82.6%	67.9%	78.3%	75.7%	82%	
7. Adult participation in lifelong learning (age 25-64)	6.5%	10.6%	9.3%	9.0%	15%	

Proposed ET 2020 benchmark

8. Foreign languages skills	a. ISCED 2 students at proficiency level B1 or higher in first foreign language ¹	:	30.3% ¹¹	:	43.5% ¹¹
	b. ISCED 2 students learning two or more foreign languages	84.1%	72.6% ¹¹	58.6%	60.8% ¹⁰

Other ET 2020 Indicators

9. Investment in education and training	a. General government expenditure on education (% of GDP)	6.8%	6.3% ¹¹	5.5%	5.3% ¹¹	
	b. Annual expenditure on public and private educational institutions per pupil/student in € PPS	ISCED 1-2	€ 4,224 ⁰⁸	:	10	€ 5,732 ⁰⁸ € 6,021 ¹⁰
		ISCED 3-4	€ 5,764 ⁰⁸	:	10	€ 6,964 ⁰⁸ € 7,123 ¹⁰
		ISCED 5-6	€ 7,240 ⁰⁸	€ 7,742 ¹⁰	€ 9,309 ⁰⁸	€ 9,168 ¹⁰
10. Digital competences	a. Pupils in grade 4 (ISCED 1) using computers at school	:	59.9% ¹¹	60.7% ⁰⁷	64.7% ¹¹	
	b. Individuals aged 16-74 with high computer skills ²	27.0%	29.0%	25.0%	26.0%	
11. Entrepreneurial competences	Individuals aged 18-64 who believe to have the required skills and knowledge to start a business	:	47.0%	42.3% ^a	42.0% ^a	
12. Vocational education and training	Share of vocational students at ISCED 3	38.4%	42.4% ¹¹	49.6%	50.3% ¹¹	
13. Skills for future labour markets Projected change in employment 2010-2020 in %	High qualification	:	17.2%	:	19.1% ^{EU28}	
	Medium qualification	:	39.3%	:	4.6% ^{EU28}	
	Low qualification	:	-16.1%	:	-20.2% ^{EU28}	
14. Low-skilled adults	Literacy	:	:	:	19.9% ^{EU17}	
	Numeracy	:	:	:	23.6% ^{EU17}	
	Problem solving in technology rich environments ³	:	:	:	26.9% ^{EU13}	

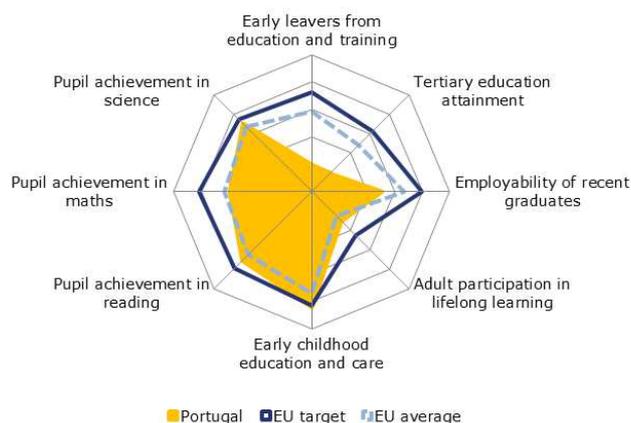
Source: Cedefop: 13 / EAC: 10a,b / European Survey on Language Competences (ESLC): 8a / Eurostat (Government finance statistics): 9a / Eurostat (LFS): 1, 2, 6, 7 / Eurostat (ISS): 10b / Eurostat (UOE): 3, 8b, 9b, 10c, 12 / IEA TIMSS: 10a / Global Entrepreneurship Monitor: 11 / OECD (PIAAC): 14 / OECD (PISA): 4

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2. Main challenges

Although Portugal still performs below or close to the EU average in several of the most important indicators, including ESL and tertiary attainment, its progress in recent years has been quite significant and consistent. The country's main challenge is now to sustain its efforts to improve the organisational effectiveness of its educational system and increase its performance in a context of fiscal consolidation that entails stable or reduced funding. It should continue to aim at: reducing early school leaving, restructuring of secondary education including VET, and finally, improving the qualifications levels of the adult population.

3. Investing in skills and qualifications

Investing in education and training in a context of economic crisis

General government expenditure on education as percentage of GDP in Portugal has been above EU 27 level for the last few years, varying from 6.1% vs. 5.1% in 2007, to 7.1% vs. 5.5% in 2010, and to 6.3% vs. 5.3% in 2011. However, given the trend in GDP growth, this has been estimated to correspond to cuts in the education budget of around 5 % in 2011 and 2012 at constant 2010 prices, which is mainly the result of cuts in salaries, as well as through the reorganisation of the schools network with mergers and closures. In 2009, 81.6% of its total expenditure in public educational institutions (ISCED 0 to 6) concerned personnel, one of the highest percentages in the EU. Another estimation points to a reduction of 11.2% from 2010 to 2011 in expenditure by the Ministry of Education (excluding higher education). Like other countries, Portugal anticipates to further reduce spending by 3.5%.

Skills

The PISA test on 15 years' old students has shown the positive evolution of Portugal over the last decade regarding basic skills. While in the PISA 2000 and 2006 surveys the percentage of low achievers was significantly higher than the EU average in all three areas assessed, in 2009 that percentage for reading and science literacy was already lower than the EU average. Only in mathematics did Portugal fail to perform better than the EU average, despite the significant progress achieved.

Preliminary data on 12th grade national exams for 2012 showed that the results were comparable to the previous year, with a slight increase in Portuguese (average mark of 10.4 out of 20) and a stable situation for Mathematics A (10.5), Geography (10.6), Mathematics applied to the Social Sciences (10.6) or Economics A (11.7), while there was a decrease on the national average for Biology, Geology A and Physics and Chemistry A.

The percentage of individuals aged 16-74 who self-report high computer skills has progressed until 2011 and is consistently above EU average, although it has decreased in 2012 like the latter. Nevertheless, schools are relatively well equipped, have fast broadband speeds and above EU average of desktop computers connected to the internet. The present national strategy on the use of ICT in education relies on the infrastructure (high-speed broadband, Internet access in classrooms) and equipment (desktop computers, video projectors and interactive whiteboards) deployed in schools in the last few years. The strategy includes initiatives covering curricula and extra-curricular activities, distance collaboration, digital learning resources, e-safety, curriculum integration, dissemination and continuing professional development. Particularly noteworthy is the Schools Portal educational repository, which holds learning resources uploaded in their majority by teachers and provides a source of information for sharing best practice with regard to the use of blogs as educational tools and services.

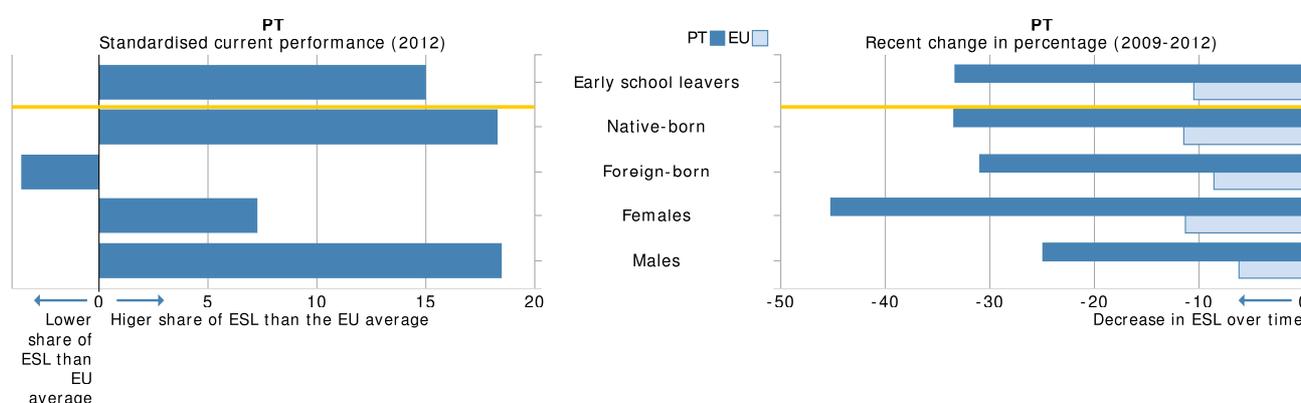
The perception of entrepreneurship skills among the 18-64 years old population has declined since 2007 but in the last two years remained stable (47%) and slightly higher than the EU average (42% in 2012). Although the average number of foreign languages learned per pupil at ISCED 2 has decreased from 2006 (1.9) to 2011 (1.6), it remains at the same level as the EU in 2010. However, Portugal performs below the EU average in percentage of students reaching B1 level or higher in the first foreign language at the end of lower secondary education (30.3% vs. 43.5%).

Portugal has successfully completed the referencing of the Portuguese Qualifications Framework to the European Qualifications Framework (EQF), in force since October 2010, and will now proceed with the inclusion of the EQF levels in diplomas and certificates awarded for qualifications.

4. Tackling early school leaving and raising the bar in school education

Portugal performs worse than the EU average in the area of early school leaving (ESL) (20.8% vs. 12.8% in 2012) although its performance has improved significantly during the period 2006-2012 (39.1% in 2006). Portugal has defined a very ambitious national target (10% by 2020) which will be difficult to achieve.

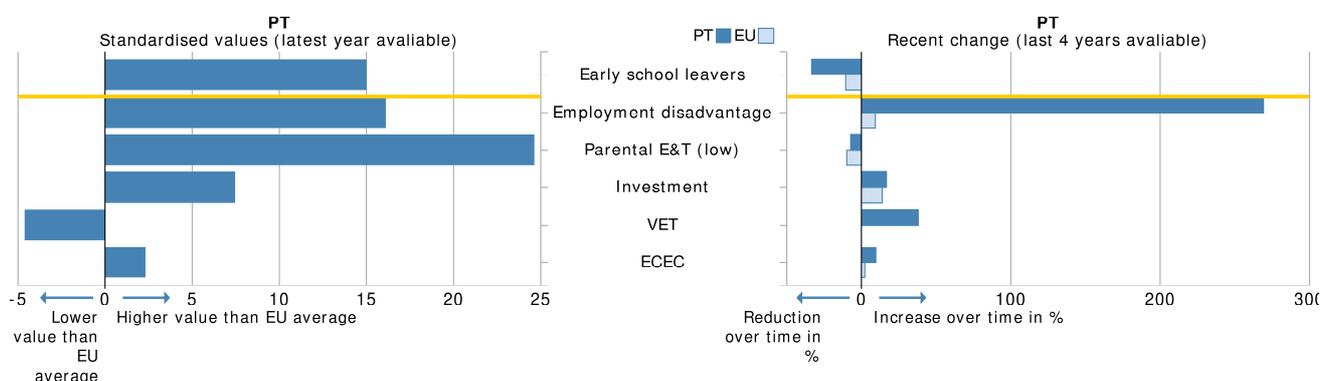
Figure 2. Early leavers from education and training: sub-groups



Source: JRC-CRELL. Note: ESL = early school leaving. See Annex 2 for further information.

The examination of sub-indicators reveals that the parents' education of the 18-24 years old cohorts is particularly unfavourable. Therefore, tackling school dropout has been a permanent concern of governments in the last few years. Measures which have contributed to secure a positive trend include: diversification of supply in secondary education, especially regarding VET offers; intervention initiatives to fight low achievement; rationalisation of the schools network; compensation measures under the ESF- supported New Opportunities initiative; specific intervention programmes to raise basic skills in Mathematics and Portuguese; curricula review and reorganisation. Work is on-going regarding teaching quality, school autonomy and management, assessment of schools and strengthening and modernising VET.

Figure 3. Early leavers from education and training: sub-indicators



Source: JRC-CRELL. Note: see Annex 2 for an explanation of the sub-indicators.

Also noteworthy in this respect is the steady increase in the percentage of participants in early childhood education from 78.9% in 2000 to 95.1% in 2011. In its assessment of progress under Europe 2020, the

government has announced the development of a pre-school assessment and monitoring system contributing to support the new guidelines regarding better coordination with the first cycle of basic education, as well as the widening of the network in the Lisbon and Oporto metropolitan areas.

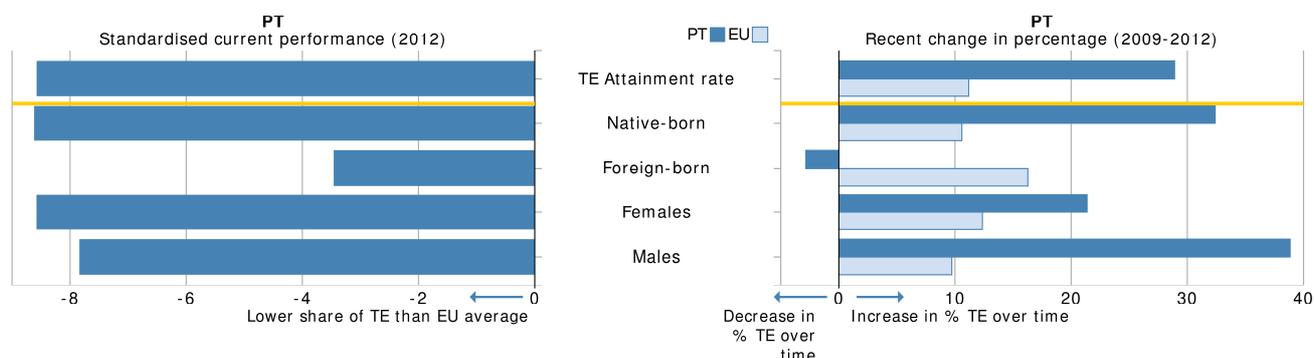
In this same context, while the legal regime for teachers' continuous professional development is on-going, the government has also announced the review of basic and secondary education teachers' initial education. Both actions should contribute to significantly improve the quality of teaching.

In order to prevent school failure and early dropout the government is developing an early action system resulting from the implementation of the following measures: consolidation of the Psychology and Guidance Services extending their action to basic and pre-primary education; continuous training of teachers focusing on the didactics of Portuguese and mathematics; creation at school level of an entity responsible for remedial action and cooperation with families and community; finally, the improvement of the monitoring capacity through the implementation of the student electronic registration number.

5. Encouraging participation in tertiary education and modernising higher education

Portugal has made significant progress in tertiary educational attainment in the last few years, although the share of tertiary graduates is still below the EU average (27.2% vs. 35.7% in 2012). Between 2006 and 2012, the number of higher education graduates increased by about 8 percentage points. Portugal has defined a very ambitious national target (40% by 2020) that will be difficult to achieve.

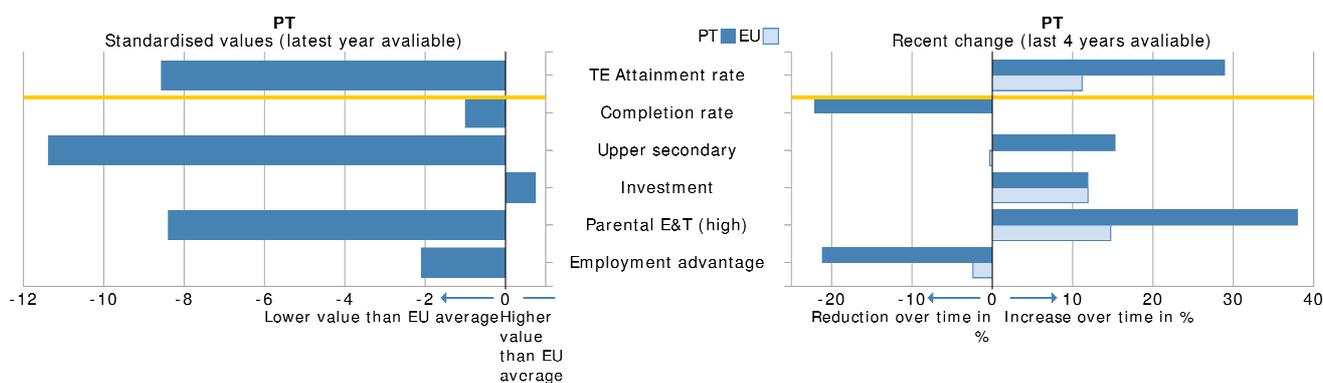
Figure 4. Tertiary education attainment: sub-groups



Source: JRC-CRELL. Note: see Annex 2 for an explanation of the sub-indicators.

On-going measures contributing to increasing tertiary attainment include the extension of compulsory education until the age of 18, the Confidence Contract signed in 2010 by the government and all public universities, polytechnics and higher education institutions, the increase in the number of students enrolled in technical specialisation courses, the extension of the distance learning supply network, and the increased diversification of 3rd cycle courses in cooperation with the private sector.

Figure 5. Tertiary education attainment: sub-indicators



Source: JRC-CRELL. Note: see Annex 2 for an explanation of the sub-indicators.

Furthermore, the Agency for the Evaluation and Accreditation of Higher Education has continued to work in quality certification. New guidelines were adopted in 2012 with a view to rationalise and adapt certification to labour market needs, which established the number of vacancies available per course for students enrolled for the first time in public higher education institutions. A new training offer of ISCED 5, 120 ECTS courses (Cursos Superiores Especializados) to be provided in polytechnics is being developed and should optimise the use of resources as well as help increasing the number of students in higher education. The on-going review of the legal regime of higher education aims at increasing quality and contributes to the internationalisation of higher education institutions through more flexible management rules and streamlined conditions for access by foreign students.

The modernisation agenda is further pursued through the development of a programme supporting technology transfer between higher education institutions and business and the creation of start-ups with a science and technology focus.

6. Facilitating the transition from education to work

Youth unemployment is particularly high in Portugal: at 42.5% in April 2013, it is the third worst rate in the EU 27. As employment rate of graduates has been decreasing since 2005, the trend has accentuated in the last three years to well below the EU average (67.9 vs. 75.7). In order to fight youth unemployment, the programme 'Youth Impulse' (Impulso Jovem) was launched in 2012 to support a number of on the job training activities such as the 'Passport for jobs', which provides six-month internships in companies, nationally or internationally, in social-economy institutions, in youth and sports associations, in agricultural exploitations and in public sector bodies. Moreover, the programme 'Stimulus 2012' (Estímulo 2012) aims at promoting the return to the labour market of the unemployed through supporting companies that hire and provide adequate training to people with higher employability difficulties.

The government has also been working on a major restructuring of the VET system, which accounts for about 40% of secondary education students, including: a review of current VET offers and curricula to eliminate overlaps and to adapt them to future labour market needs, in particular by increasing learning and training in a work based context; the creation of professional schools of reference in economic sectors relevant to employment creation and in partnership with private stakeholders; the development of incentives for companies to create openings for on the job training and apprenticeships; the implementation of a network of vocational centres aimed at providing education and training guidance to both youngsters and adults and at liaising with companies at local level.

7. Upgrading skills through lifelong learning

In 2012, adult participation in lifelong learning (10.6%) although slightly lower than in 2011 (11.6%) was still above EU average (9.0%). However, Portugal still has a low qualified workforce. In 2011, 59% of the employed population between 15-64 years old had only attained ISCED 2 or below, while only 19.7 completed tertiary education (ISCED 5-6). This is relevant as employment in high qualified jobs in Portugal up to 2020 is forecast to increase somewhat less than the EU average, while in medium qualified jobs a stronger increase is expected.

The need to invest in raising the skills levels of the population is strengthened by the extremely difficult financial and economic situation leading to the loss of low qualified jobs and their expected replacement in the near future by medium qualified ones.

The recently created network of Centres for Qualification and Vocational Training (Centros para a Qualificação e o Ensino Profissional) will support the recognition, validation and certification of non-formal and informal competences and will provide guidance on school, professional or double certification training, as well as labour market integration.

1. Key indicators and benchmarks

Europe 2020 headline targets	Romania		EU average		Europe 2020 target / Benchmark
	2009	2012	2009	2012	
1. Early leavers from education and training (age 18-24)	16.6%	17.4%	14.2% ^{EU28}	12.7% ^{EU28}	EU target: 10% National target: 11.3%
2. Tertiary educational attainment (age 30-34)	16.8%	21.8%	32.1% ^{EU28}	35.7% ^{EU28}	EU target: 40% National target: 26.7%

ET 2020 Benchmarks

3. Early childhood education and care (4 years old - year before start of compulsory primary)	82.3%	82.0% ¹¹	91.7%	93.2% ¹¹	95%		
4. Basic skills Low achievers (15 year-olds; Level 1 or lower in PISA study)	Reading	40.4%	:	19.6%	:	15%	
	Mathematics	47.0%	:	22.2%	:	15%	
	Science	41.4%	:	17.7%	:	15%	
5. Learning mobility	Initial vocational training (IVET)	a. Students participating in Leonardo da Vinci programs as a share of vocational students at ISCED 3		0.2%	0.3% ¹¹	0.6%	0.7% ¹¹
	Higher Education	b. Erasmus inbound students as % of student population in host country			0.2% ¹¹		1.1% ¹¹
		c. Inbound degree mobile students as % of student population in the host country			1.8% ¹¹		7.0% ¹¹
6. Employment rate of graduates (age 20-34) having left education 1-3 years before reference year	77.6%	69.4%	78.3%	75.7%	82%		
7. Adult participation in lifelong learning (age 25-64)	1.5%	1.4%	9.3%	9.0%	15%		

Proposed ET 2020 benchmark

8. Foreign languages skills	a. ISCED 2 students at proficiency level B1 or higher in first foreign language ¹	:	:	:	43.5% ¹¹
	b. ISCED 2 students learning two or more foreign languages	96.0%	95.5% ¹¹	58.6%	60.8% ¹⁰

Other ET 2020 Indicators

9. Investment in education and training	a. General government expenditure on education (% of GDP)		4.1%	4.1% ¹¹	5.5%	5.3% ¹¹
	b. Annual expenditure on public and private educational institutions per pupil/student in € PPS	ISCED 1-2	€ 2,221 ⁰⁸	€ 1,674 ¹⁰	€ 5,732 ⁰⁸	€ 6,021 ¹⁰
		ISCED 3-4	€ 2,106 ⁰⁸	€ 1,680 ¹⁰	€ 6,964 ⁰⁸	€ 7,123 ¹⁰
		ISCED 5-6	€ 3,673 ⁰⁸	€ 2,956 ¹⁰	€ 9,309 ⁰⁸	€ 9,168 ¹⁰
10. Digital competences	a. Pupils in grade 4 (ISCED 1) using computers at school		:	37.8% ¹¹	60.7% ⁰⁷	64.7% ¹¹
	b. Individuals aged 16-74 with high computer skills ²		9.0%	8.0%	25.0%	26.0%
11. Entrepreneurial competences	Individuals aged 18-64 who believe to have the required skills and knowledge to start a business		27.0%	38.0%	42.3% ^a	42.0% ^a
12. Vocational education and training	Share of vocational students at ISCED 3		63.7%	63.1% ¹¹	49.6%	50.3% ¹¹
13. Skills for future labour markets Projected change in employment 2010-2020 in %	High qualification		:	23.1%	:	19.1% ^{EU28}
	Medium qualification		:	-1.8%	:	4.6% ^{EU28}
	Low qualification		:	-11.5%	:	-20.2% ^{EU28}
14. Low-skilled adults	Literacy		:	:	:	19.9% ^{EU17}
	Numeracy		:	:	:	23.6% ^{EU17}
	Problem solving in technology rich environments ³		:	:	:	26.9% ^{EU13}

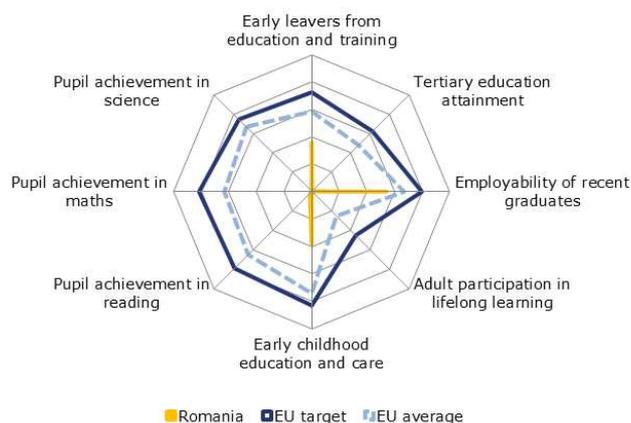
Source: Cedefop: 13 / EAC: 10a,b / European Survey on Language Competences (ESLC): 8a / Eurostat (Government finance statistics): 9a / Eurostat (LFS): 1, 2, 6, 7 / Eurostat (ISS): 10b / Eurostat (UOE): 3, 8b, 9b, 10c, 12 / IEA TIMSS: 10a / Global Entrepreneurship Monitor: 11 / OECD (PIAAC): 14 / OECD (PISA): 4

Notes: ⁰⁷ = 2007, ⁰⁸ = 2008, ⁰⁹ = 2009, ¹⁰ = 2010, ¹¹ = 2011, e= estimate, a= unweighted average b= break, p= provisional

Number of countries included in EU average: PISA=25, Entrepreneurship=18, Language skills=13, ICT/Computers at school=13, others: EU27

¹= average of skills tested in reading, listening, writing, ²= having carried out 5-6 specific computer related activities, ³= Results cover people with scores below level 1 as well as people who have no computer experience or failed the ICT test

Figure 1. Position in relation to highest (outer ring) and lowest performers (centre)



Source: DG EAC calculations on the basis of data from Eurostat (LFS 2012 and UOE 2011) and OECD (PISA 2009). Note: all scores are set between a maximum (the highest performers visualised by the outer ring) and a minimum (the lowest performers visualised by the centre of the chart).

2. Main challenges

Romania faces a major challenge in raising the quality of education and training. The new education law adopted in 2011 is a major reform of the entire education system, setting a long term agenda for upgrading the quality of education at all levels. In order to be an effective and successful reform, implementation needs to be continued, with building up of administrative capacity and evidence-based policymaking at both central and local level.

Early school leaving is significantly above the EU average. Problems persist especially in rural areas and for Roma people. Access to quality and affordable early childhood education and care remains problematic. Mismatches between skills and labour market demand are characteristic of a large proportion of vocational and tertiary education programmes, with the poor level of vocational skills being a specific challenge. The high unemployment rate among tertiary graduates and the rate of over-qualification make a further alignment of tertiary education with the labour market a high priority.

The country-specific recommendation (CSR) on education and training in the 2013 European Semester thus recommends to speed up the education reform, including the building up of administrative capacity at both central and local level, and evaluate the impact of the reforms. Furthermore it is proposed to step up reforms in vocational education and training, further align tertiary education with the needs of the labour market and improve access for disadvantaged people and implement a national strategy on early school leaving focusing on better access to quality early childhood education, including for Roma children.

3. Investing in skills and qualifications

Investing in education and training in a context of economic crisis

General government expenditure on education as a share of GDP in Romania is well below the EU average (4.1% vs. 5.3% in 2011) and is the third-lowest in the EU. The education budget has decreased considerably in the last three years, becoming one of the smallest in the EU. This low level of expenditure is reflected at the primary and secondary levels where it was the lowest in the EU in 2010, and at tertiary level where it was significantly lower than the EU average. At pre-primary level expenditure was however higher than the EU average. This issue is aggravated by the low absorption of EU Funds in the education sector.

Skills

According to the OECD PISA tests there has been an improvement from 2006 to 2009 in pupil achievement in reading, maths and science. However Romania still remains with 41.4% of low achievers the worst performer in science, and with 40.4% and 47.0% in reading and maths respectively the second worst performer in the EU.

At 8% in 2012 Romania has the lowest share of individuals aged 16-74 with high computer skills. The average level of foreign languages learnt per pupil at ISCED level 2 in Romania has been constant over the last years and is above the EU average. Upgrading of skills is a big challenge that Romania is going to face, especially in the perspective of future economic changes which will have an impact on the labour market. According to CEDEFOP skill forecasts, Romania will register a deficit of medium and high level skills in 2020.

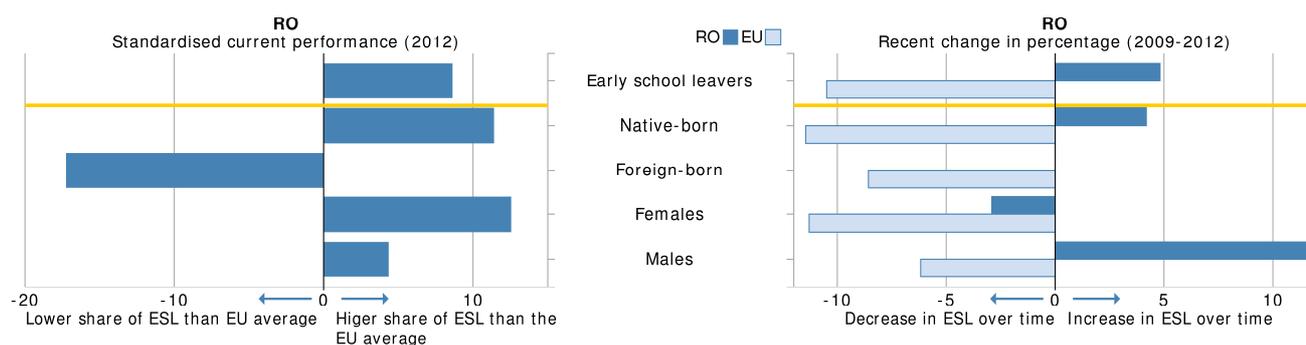
Romania has developed a comprehensive learning outcomes-based national qualifications framework. This brings together nationally recognised qualifications from both initial and continuing VET, apprenticeship at the workplace, general and higher education, and helps integrate the validation of non-formal learning into the

national qualification system. The National Qualifications Framework in Higher Education which describes 573 qualifications in terms of competences is related to the European Qualifications Framework for Higher Education. The National Qualifications Framework in Higher Education will be integrated in the National Qualifications Framework which is being elaborated.

4. Tackling early school leaving and raising the bar in school education

Early school leaving (ESL) is a significant challenge; at 17.4% in 2012, the Romanian ESL rate is well above both the EU average of 12.7%. The national target of 11.3% for 2020 will be difficult to attain without major efforts. Problems persist especially in rural and remote areas and for the Roma. Romania also lacks an adequate data collection mechanism regarding early school leavers; a comprehensive strategy, to be finalised by end 2013, could help in this regard.

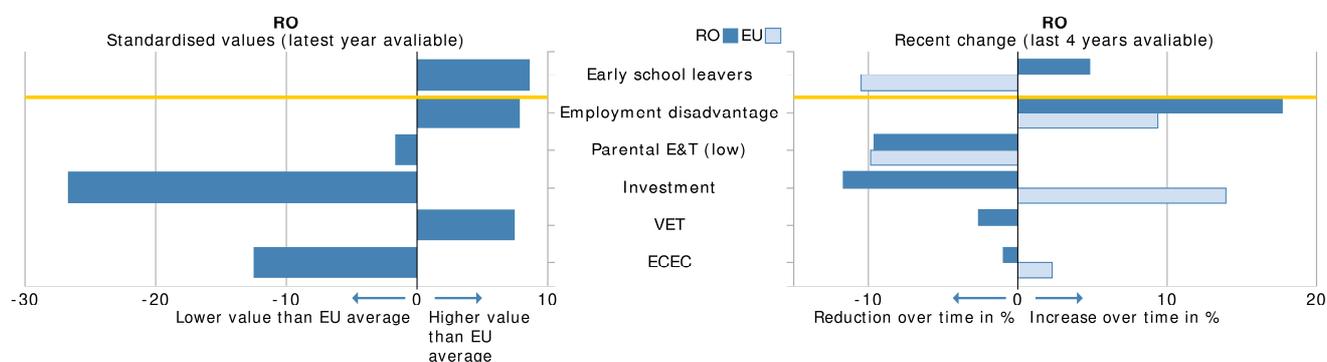
Figure 2. Early leavers from education and training: sub-groups



Source: JRC-CRELL. Note: ESL = early school leaving. See Annex 2 for further information.

The JAF sub-indicators show a very low level of investment which has been decreasing further. Likewise early childhood care and education is low and decreasing as well.

Figure 3. Early leavers from education and training: sub-indicators



Source: JRC-CRELL. Note: see Annex 2 for an explanation of the sub-indicators.

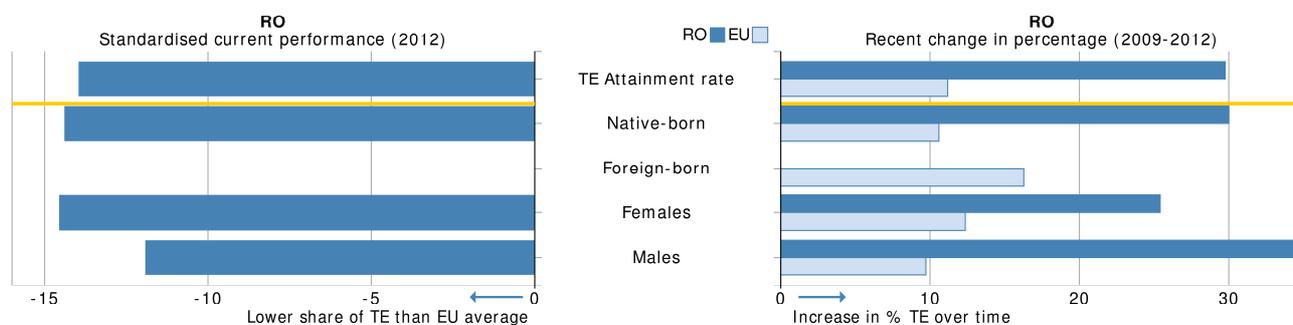
To prevent and combat ESL and to support re-enrolment in school, yearly social support programmes are provided which are conceived to assist students from disadvantaged areas - i.e. *School supplies, Money for High-school, Euro 200, the Croissant and milk programme* and programmes designed to ensure the transportation of students and pupils, i.e. *Reimbursement of travel expenses and School shuttles*. Through the *Law on National Education*, programmes with direct implications on preventing and combating ESL, namely *School after School, Second Chance and Functional Literacy* are foreseen.

Efforts are being made in reforming early education and an agreement on the preparatory class was reached in January 2013. The preparatory class for children aged 6 is maintained within the compulsory primary education. At the beginning of the school year 2012-2013, implementation of some priority actions for the entire primary and secondary education levels was started, aiming at increasing access of all children to quality education and raising school attainment rate. Schools were notified to apply initial assessment tests for students at the beginning of the school year and to take remedy actions conceived to foster school attainment. A framework programme to county school inspectorates to be detailed at local level (i.e. county, school and teacher levels) was issued and is designed to improve the results of national evaluation exams.

5. Encouraging participation in tertiary education and modernising higher education

Although tertiary education has been expanding rapidly in the past years with 21.8% in 2012, approaching the attainment of the 2020 national target of 26.7%, the participation rate in Romania is still among the lowest in Europe (around 14 percentage points below the EU average). There is a significant mismatch between the education offer of universities and the labour market needs which is visible in the unemployment rates (particularly high among university graduates).

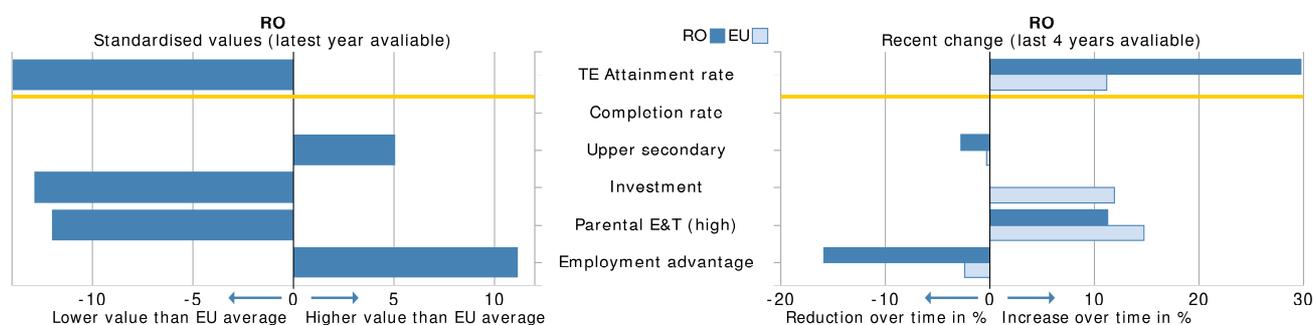
Figure 4. Tertiary education attainment: sub-groups



Source: JRC-CRELL. Note: TE = tertiary education. See Annex 2 for further information.

The JAF sub-indicators highlight the low level of investment which is further decreasing and that upper secondary is much more prevalent than tertiary attainment (although the latter has been increasing). The employment advantage of tertiary attainment is strong but has been decreasing considerably.

Figure 5. Tertiary education attainment: sub-indicators



Source: JRC-CRELL. Note: see Annex 2 for an explanation of the sub-indicators.

The new education law adopted in 2011 is a step forward in strengthening quality in higher education and the new university ranking allows a more strategic use of funding in supporting quality. The reform also overhauls the management of higher education institutions and raises requirements for the organisation of masters and doctoral courses.

Attracting more students from lower income families in higher education, particularly from rural areas, remains an important challenge. Recent surveys found considerable differences between Roma and non-Roma in Romania, with less than 10% of the Roma household members aged 20 to 24 being reported to have completed general or vocational upper-secondary education, compared to more than 60% of non-Roma.

In order to monitor the higher-education graduates' insertion on labour market – the *National Study of Monitoring the Labour Market Insertion of Higher Education Graduates* also known as *University Graduates and Labour Market – Romanian Tracer Study* is being implemented, and a *National Forecast and Statistics Council in Higher Education* was founded and its internal regulations were approved.

Social scholarships and programmes for students through which the state supports students' transportation, meals and accommodation are offered; 564 distinct vacancies for Roma candidates were foreseen in state universities in the 2012-2013 academic year.

6. Facilitating the transition from education to work and reshaping vocational training

To address youth unemployment, the Romanian government amended the law on apprenticeships in the workplace, implemented measures to monitor the insertion of higher education graduates on the labour market, as well as measures for job subsidising and training for young people. Information campaigns were also carried out in educational establishments.

The authorities are currently preparing the National Jobs Plan focused on the situation of youth in order to translate the main actions mentioned in the Youth Opportunities Initiative and the Youth Employment Package (in particular the implementation of the Youth Guarantee). However, the effectiveness of the Plan may benefit from better coordination and partnership across policy fields for ensuring quality jobs, apprenticeships and traineeships and an improved cooperation between schools/universities, enterprises and employment agencies, including through practical training in companies.

Quality issues and skills mismatches with labour market demand affect a large share of vocational and tertiary education. The main challenge in increasing the supply of skills remains the underfinancing of the sector. In the school year 2012-2013 there was the re-launch of the 2 years Vocational Education and Training (VET) system based on contracts concluded with business enterprises/public bodies, the latter providing internships for VET students. The students are granted monthly scholarships (approx. 45 Euro/student). Roughly 12,500 students are enrolled in the current VET school year.

7. Upgrading skills through lifelong learning

Adult participation in lifelong learning remains stagnant at very low levels, registering a significant gap compared to EU average (1.4% vs. 9% in 2012). Participation rates are particularly low among low skilled adults. With regard to lifelong learning and the issue of skills mismatch, Romania also lacks an adequate skills forecasting system which could provide better guidance to individuals and industry as to the future needs of the labour market.

Efforts are being made to re-launch the development of the National Lifelong Learning Strategy by means of an EU funded project for which the terms of references are currently being elaborated. The strategy will be elaborated by January 2014.

1. Key indicators and benchmarks

Europe 2020 headline targets	Slovakia		EU average		Europe 2020 target / Benchmark
	2009	2012	2009	2012	
1. Early leavers from education and training (age 18-24)	4.9%	5.3%	14.2% ^{EU28}	12.7% ^{EU28}	EU target: 10% National target: 6%
2. Tertiary educational attainment (age 30-34)	17.6%	23.7%	32.1% ^{EU28}	35.7% ^{EU28}	EU target: 40% National target: 40%

ET 2020 Benchmarks

3. Early childhood education and care (4 years old - year before start of compulsory primary)	77.9%	76.9% ¹¹	91.7%	93.2% ¹¹	95%		
4. Basic skills Low achievers (15 year-olds; Level 1 or lower in PISA study)	Reading	22.3%	:	19.6%	:	15%	
	Mathematics	21.0%	:	22.2%	:	15%	
	Science	19.3%	:	17.7%	:	15%	
5. Learning mobility	Initial vocational training (IVET)	a. Students participating in Leonardo da Vinci programs as a share of vocational students at ISCED 3		0.0%	0.1% ¹¹	0.6%	0.7% ¹¹
	Higher Education	b. Erasmus inbound students as % of student population in host country			0.5% ¹¹		1.1% ¹¹
		c. Inbound degree mobile students as % of student population in the host country			3.9% ¹¹		7.0% ¹¹
6. Employment rate of graduates (age 20-34) having left education 1-3 years before reference year	74.4%	68.6%	78.3%	75.7%	82%		
7. Adult participation in lifelong learning (age 25-64)	2.8%	3.1%	9.3%	9.0%	15%		

Proposed ET 2020 benchmark

8. Foreign languages skills	a. ISCED 2 students at proficiency level B1 or higher in first foreign language ¹	:	:	:	43.5% ¹¹
	b. ISCED 2 students learning two or more foreign languages	22.5%	52.2% ¹¹	58.6%	60.8% ¹⁰

Other ET 2020 Indicators

9. Investment in education and training	a. General government expenditure on education (% of GDP)		4.3%	4.0% ¹¹	5.5%	5.3% ¹¹
	b. Annual expenditure on public and private educational institutions per pupil/student in € PPS	ISCED 1-2	€ 3,070 ⁰⁸	€ 4,168 ¹⁰	€ 5,732 ⁰⁸	€ 6,021 ¹⁰
		ISCED 3-4	€ 3,283 ⁰⁸	€ 3,466 ¹⁰	€ 6,964 ⁰⁸	€ 7,123 ¹⁰
		ISCED 5-6	€ 5,130 ⁰⁸	€ 5,318 ¹⁰	€ 9,309 ⁰⁸	€ 9,168 ¹⁰
10. Digital competences	a. Pupils in grade 4 (ISCED 1) using computers at school		46.7% ⁰⁷	70.0% ¹¹	60.7% ⁰⁷	64.7% ¹¹
	b. Individuals aged 16-74 with high computer skills ²		21.0%	24.0%	25.0%	26.0%
11. Entrepreneurial competences	Individuals aged 18-64 who believe to have the required skills and knowledge to start a business		:	50.0%	42.3% ^a	42.0% ^a
12. Vocational education and training	Share of vocational students at ISCED 3		71.6%	70.9% ¹¹	49.6%	50.3% ¹¹
13. Skills for future labour markets Projected change in employment 2010-2020 in %	High qualification		:	38.0%	:	19.1% ^{EU28}
	Medium qualification		:	-4.5%	:	4.6% ^{EU28}
	Low qualification		:	-12.6%	:	-20.2% ^{EU28}
14. Low-skilled adults	Literacy		:	11.6%	:	19.9% ^{EU17}
	Numeracy		:	13.8%	:	23.6% ^{EU17}
	Problem solving in technology rich environments ³		:	33.1%	:	26.9% ^{EU13}

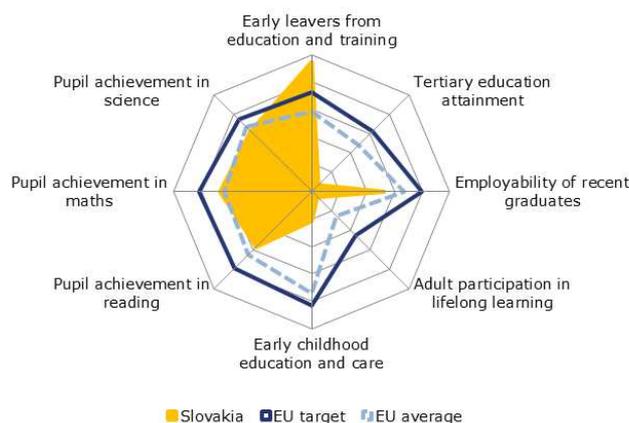
Source: Cedefop: 13 / EAC: 10a,b / European Survey on Language Competences (ESLC): 8a / Eurostat (Government finance statistics): 9a / Eurostat (LFS): 1, 2, 6, 7 / Eurostat (ISS): 10b / Eurostat (UOE): 3, 8b, 9b, 10c, 12 / IEA TIMSS: 10a / Global Entrepreneurship Monitor: 11 / OECD (PIAAC): 14 / OECD (PISA): 4

Notes: ⁰⁷ = 2007, ⁰⁸ = 2008, ⁰⁹ = 2009, ¹⁰ = 2010, ¹¹ = 2011, e= estimate, a= unweighted average b= break, p= provisional

Number of countries included in EU average: PISA=25, Entrepreneurship=18, Language skills=13, ICT/Computers at school=13, others: EU27

¹ = average of skills tested in reading, listening, writing, ² = having carried out 5-6 specific computer related activities, ³ = Results cover people with scores below level 1 as well as people who have no computer experience or failed the ICT test

Figure 1. Position in relation to highest (outer ring) and lowest performers (centre)



Source: DG EAC calculations on the basis of data from Eurostat (LFS 2012 and UOE 2011) and OECD (PISA 2009). Note: all scores are set between a maximum (the highest performers visualised by the outer ring) and a minimum (the lowest performers visualised by the centre of the chart).

2. Main challenges

Recent and on-going reforms to improve the quality and labour-market relevance of education at all levels need to be stepped up to further ease school-to-job transition. Youth unemployment rose to 34% in 2012, while companies report skills shortages. Global public expenditure on education, as well as its share for teaching activities (teachers, material, equipment), are low. The attractiveness of the teaching profession is very low. Systematic forecasts of future labour market needs remain insufficient. The announced measures in vocational education and training (VET) towards "flexible" dual education and higher education (HE) (focus on employability, promotion of studies in certain fields more needed on the labour market) are positive and require support notably in terms of funding and better quality of teaching staff. Positive initiatives were launched to improve the situation of vulnerable groups, in particular marginalised Roma communities, aimed at increasing their educational achievements in mainstream education; to give their full effect, they will need to be encompassed in a comprehensive set of concrete measures as announced by the government.

Based on this, the following CSR was formulated in the 2013 European Semester: "4. Step up efforts to address high youth unemployment, for example through a Youth Guarantee.] Take steps to attract young people to the teaching profession and raise educational outcomes. In vocational education and training, reinforce the provision of work-based learning in companies. In higher education, create more job-oriented bachelor programmes. Foster effective knowledge transfer by promoting cooperation between academia, research and the business sector. Step up efforts to improve access to high-quality and inclusive pre-school and school education for marginalised communities, including Roma."

3. Investing in skills and qualifications

Investing in education and training in a context of economic crisis

Education expenditure as a share of GDP remains among the lowest in the EU in 2011 at all levels of education and has decreased from 4.5% of GDP in 2010 to 4% in 2011 (EU average was 5.3% in 2011)²³. In addition, funding mechanisms favour quantity more than quality and adapt insufficiently to local needs. There has been a recent change in higher education to strengthen the link between research performance and public funding; further changes will aim at discouraging tertiary schools from retaining non-performing students. Funds to schools are not allocated according to the needed number of classes but according to the number of students. The 2013 National Reform Programme (NRP), based on the "Report on the situation in education in Slovakia for public discussion" issued in March 2013 by the Ministry of Education, sets the objective of gradually increasing public expenditure on education to 6% of GDP by 2020. It also aims at increasing efficiency by adjusting the number of schools and teachers to demographic developments and to better reflect the employability of (VET) graduates. It announces that funding of vocational schools will be updated to reflect higher costs.

Skills

Aggregate PISA score has improved since 2006 but is still below OECD average. The disparity in performance between schools is large, having led the Government to adopt measures aimed at improving the quality of pre-primary and compulsory education. A national system for the testing of the mother tongue language and mathematics (3 stages in the 4th, 9th grade and at the upper secondary leaving exam) provides a good basis for analysis and evidence-based policy. External and internal quality evaluation of schools will be enhanced and

²³ COFOG data, Eurostat.

enable a more autonomous management of schools, notably as regards teaching material, in line with the curricular reform launched in 2008 introducing two-level (state and school) curricula.

ICT skills of the population are slightly below EU average. The provision of ICT infrastructures in schools remains significantly below the EU average, especially at primary and lower secondary schools. Supply of quality digital learning content including Open Educational Resources seems insufficient. Development of the knowledge society, computerisation and digitalisation are among the key objectives of the "Programme Declaration 2012-2016". Education to entrepreneurship is integrated in the curricula and supported notably through State and NGO projects. The share of the population believing to have the required skills and knowledge to start a business (50%) is comparatively high. The average number of foreign languages learned per pupil is still close to EU average level; however the obligation to learn a second foreign language in compulsory education will be suppressed from the state curricula, even if the openness of the Slovak economy would justify continuing the emphasis on language skills.

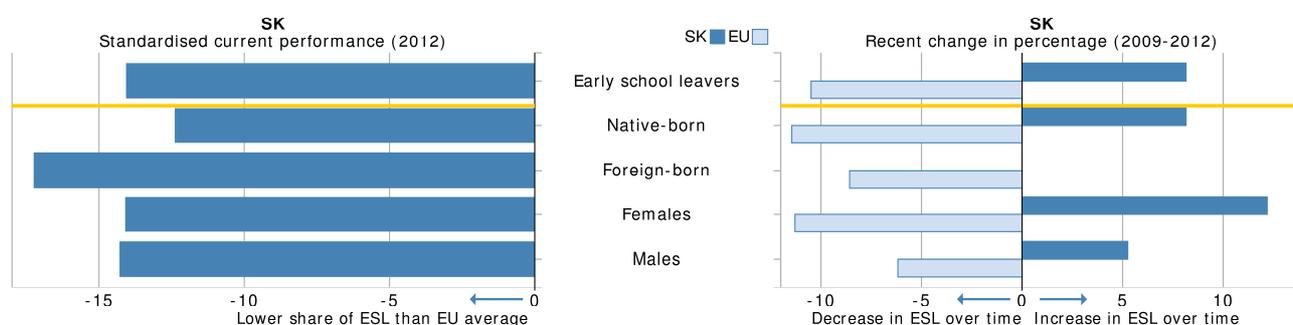
Anticipation of changes in employment till 2020 point to a sharp increase in high qualifications skills.

The National Qualifications Framework (NQF) is still under development, after several postponements. In 2011, a set of level descriptors for a comprehensive NQF for lifelong learning was approved by the Ministry of Education; it will include qualifications from all subsystems of formal education and training. A national register of qualifications – the backbone of the national qualification system and the NQF – is being established with the aim of including all national full and partial qualifications with qualifications and assessment standards. Referencing to the European Qualifications Framework is planned for 2014.

4. Tackling early school leaving and raising the bar in school education

Slovakia is one of the EU best performers for early school leaving (ESL), with a rate of 5.3% in 2012, compared to the EU average of 12.7%. While it already meets its national target of 6%, ESL rate has been increasing recently, in particular for girls. The target takes into account the increasing proportion of children from marginalised Roma communities, whose vast majority leave school early²⁴. Roma children are often segregated and put in special schools. On-going measures (often supported by EU funds) to better integrate them into mainstream education need to be enhanced (e.g. zero-classes, all-day programmes, teacher assistants, inclusive education). Statistical data gathering including will be launched which should enable monitoring ESL.

Figure 2. Early leavers from education and training: sub-groups



Source: JRC-CRELL. Note: ESL = early school leaving. See Annex 2 for further information.

Participation in early childhood education is low compared to EU average (76.9% vs. 93.2% in 2011), with a slightly negative trend. The Government will adjust capacities in view of achieving a 95% attendance of children over 4 by 2020²⁵.

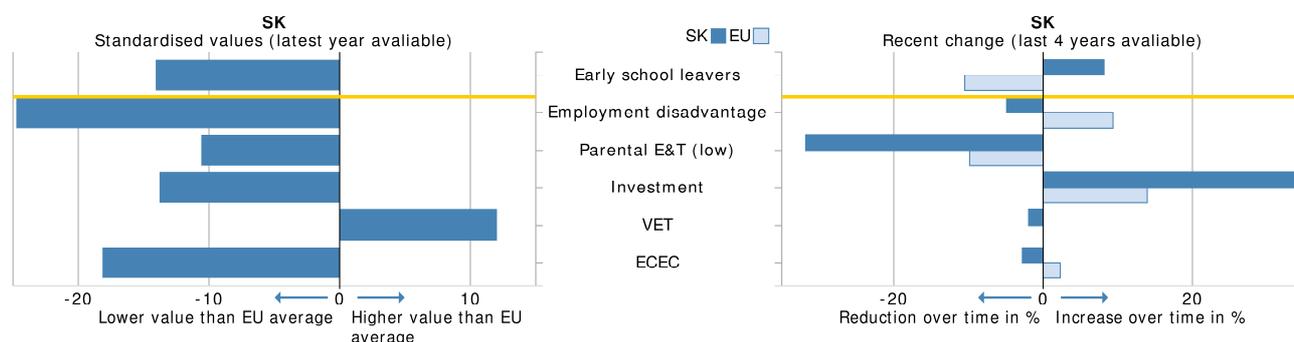
The teaching profession's attractiveness is particularly low, teachers' relative wages being the lowest among OECD countries²⁶. The recently introduced career-system for teachers could partly contribute to improving the quality of educational outcomes by increasing the attractiveness of the profession and encouraging teachers to participate in in-service training. It will be essential to ensure that professional learning opportunities respond to the specific needs of each individual teacher and the global financial envelope for teachers' salaries increases for

²⁴ In Slovakia, the share of Roma and non-Roma living in close proximity to Roma households, aged 18-22, not attending school and not having completed higher than lower secondary or short-term upper-secondary education in 2011 was 95%, "Roma education in comparative perspective", UNDP/World Bank/EC regional survey, 2013 NRP.

²⁶ Teachers' wages are 44% of the average earnings of tertiary education graduates in Slovakia, while the OECD average varies from 77% to 85%, OECD Economic Review, December 2012 – They were raised by 5% in 2012, teachers asking for a further increase of 5% in 2013.

the system to really become attractive to teachers. Professional standards for beginning teachers will be developed and future teachers will spend more time in practical training²⁷.

Figure 3. Early leavers from education and training: sub-indicators

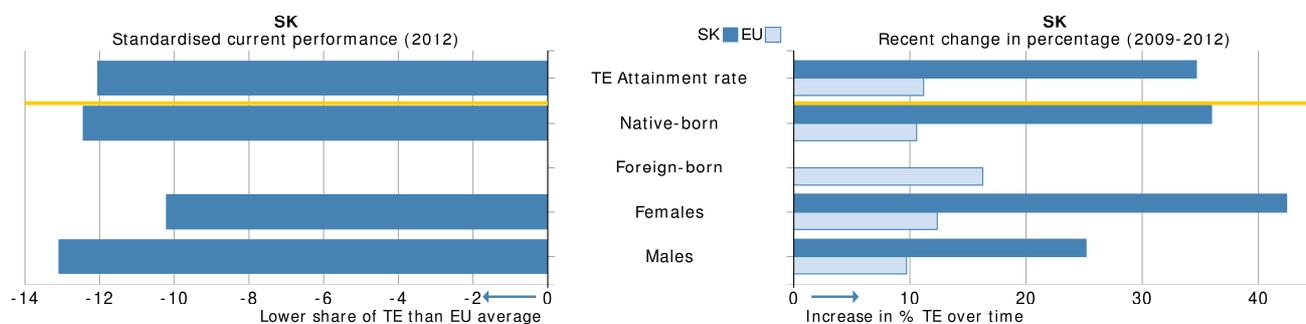


Source: JRC-CRELL. Note: see Annex 2 for an explanation of the sub-indicators.

5. Encouraging participation in tertiary education and modernising higher education

Although Slovakia's tertiary attainment of 23.7% in 2012 is lower than the EU average of 35.7%, the number of new entrants has risen rapidly, calling for increased efforts to improve quality and labour market relevance. The national target is 40%. Slovak HE graduates frequently experience horizontal (a quarter are in jobs not corresponding to their field of studies) and vertical (more than a third of them are in positions that only require upper-secondary level of education) mismatches. 2011 OECD data indicate that just above 70% of students who enter tertiary education do graduate with at least a first degree at this level²⁸. Employment rate of people aged 20-34 having achieved tertiary education was 75.2% in 2012, much higher than the 61.6% for those having achieved only upper-secondary education.

Figure 4. Tertiary education attainment: sub-groups



Source: JRC-CRELL. Note: TE = tertiary education. See Annex 2 for further information.

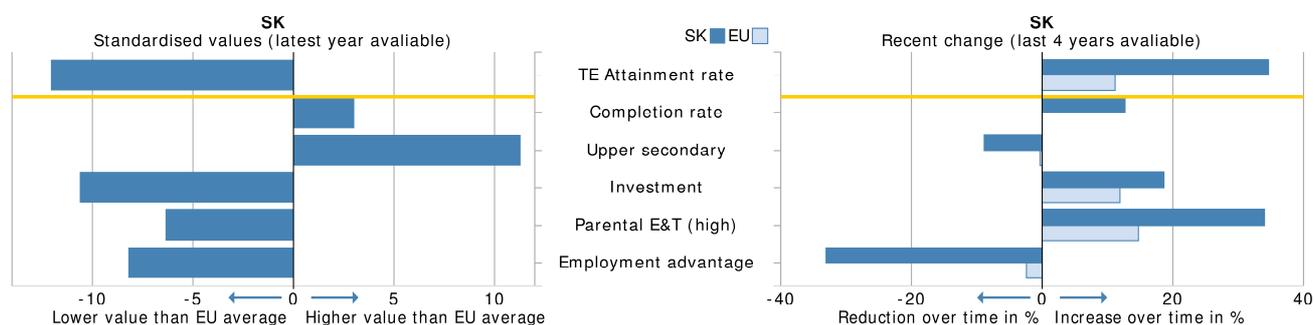
Besides existing funding mechanisms based also on performance, amendments to the Higher Education Act were adopted in 2012 to improve quality, covering notably the obligatory development of internal quality assurance systems, conditions for teachers, internationalisation, part-time studies and improved support to students with special needs. The current funding system of higher education institutions (HEIs) does not stimulate the creation of more vocationally-oriented bachelor degrees with practical experience organised with companies but encourages the vast majority of students to continue studying to obtain Master degrees. The Ministry intends to open up discussions with employers on potential enhanced cooperation with HEIs and to enhance quality assurance.

²⁷ 2013 NRP.

²⁸ Education at a Glance 2013 – NB, national data gives a higher figure, see Information Portal on HE, Ministry of Education, Science, Research and Sport.

Slovak open universities participate in the first pan-European Massive Open Online Courses initiative (MOOCs) launched in 2013, which offers courses on a wide variety of subjects free of charge²⁹.

Figure 5. Tertiary education attainment: sub-indicators



Source: JRC-CRELL. Note: see Annex 2 for an explanation of the sub-indicators.

6. Facilitating the transition from education to work

Youth unemployment rate was 34% in 2012 and had risen by more than 76% since 2008, employment of graduates in 2012 being at 68.6%, comparing to the 75.7% EU average. Structural mismatches partly explain these rates. While the proportion of work-based learning in initial VET is rather high (41%), it takes predominantly place in vocational schools facilities without the involvement of companies in providing apprenticeship places; reforms adopted in 2012 have created legal framework for systematic involvement of social partners in view of improving labor market relevance of VET (VET concerns more than 70% of secondary pupils). This has notably led to the creation of more than 20 pilot projects in the automotive sector, the aim being to mainstream such schemes in the most suitable sectors. Law amendments adopted in 2012 also introduce regulation of number of students/classes in various fields, stricter conditions for accessing VET, publication of employability of graduates twice a year. It will be essential to make sure that the definition of skills needs is appropriately carried out in a comprehensive way by the labor sector and that the cooperation with the education sector and incentives for employers to recruit apprentices are efficient. The decentralization of curricular development at school level, based on national curricula, should enable a better reflection of local and regional labor market needs. A national quality assurance scheme is still missing. There are no short-term VET schemes allowing for certification of vocational skills for simple works (crafts) only, while these could contribute helping low-achievers entering the labour market³⁰. Slovakia signed in December 2012 a Memorandum on European cooperation in vocational education and training, calling for concrete actions to enhance i.a. VET quality and labor market relevance.

7. Upgrading skills through lifelong learning

The findings of Survey of Adult Skills (PIAAC³¹) reveal that adults (aged 16-65) in Slovakia perform above the EU average in the literacy and numeracy proficiency tests. However, young people aged 16-19 with upper secondary education perform below the EU average in the literacy proficiency tests and not better than older cohorts with similar qualifications. The gap in proficiency skills for literacy between the generations aged 25-34 and 55-65 is low in Slovakia (between 12 and 15 points only, i.e. equivalent to skills usually acquired with 2 years of education), while in the EU it is on average equivalent to skills usually acquired with 5 years of education.

While employed people have on average higher skills than unemployed people at EU level, the gap is even more pronounced in numeracy for Slovakia (27 points, i.e. equivalent to skills usually acquired with 4 years of education). In parallel, Slovakia also has a large proportion of inactive people among the high skilled population (about 24%). The difference between native- and foreign-born adults is one of the lowest across EU countries in both literacy and numeracy skills.

About 20% of adults (aged 16-65) have no computer experience. However young people perform better than the older generations and closer to the EU average.

²⁹ Initiative led by the European Association of Distance Teaching Universities (EADTU), see portal www.OpenupEd.eu.

³⁰ VET in Slovakia 2012, Refernet.

³¹ Volume I of the Education and Training Monitor (chapter 6) provides an overview of the results of the survey. Skills levels are presented either in terms of average score points or proportion of adults at a given proficiency level in literacy or numeracy (level 1 to 5) or problem solving in technology-rich (ICT) environments (level 1 to 3 or no ICT experience).

The share of low-skilled people (those with at most level 1) is close to 11% for literacy and 13% for numeracy, much better than the EU average. However, low skilled people are much less likely to participate in job-related learning compared to high skilled people.

Participation in lifelong learning is among the lowest in the EU and is decreasing (3.1% vs. 9% EU average in 2012), in particular among the long-term unemployed population. Still, the 2010 Continuous Vocational Training Survey points to a higher share in Slovak enterprises offering continuous training to their employees than EU average (69% vs. 66%), together with a higher share of employees in these companies taking part in the courses than EU average (58% vs. 48%). The law on lifelong learning was amended in September 2012, creating an alternative way for adults to enter the labour market through retraining within accredited short practice-oriented courses. Financial incentives for individuals and employers are missing. Validation of non-formal learning is announced to be included in the law in the near future³². Due to the absence of quality data on future skills needs, a career oriented guidance and counselling for pupils, students and adults is absent.

Annex 2. Explaining the sub-indicators for the headline target

The country reports contain figures that provide a more in-depth look at the performance as regards the twofold Europe 2020 headline target on education and training: early school leaving and tertiary attainment. In these figures, the latest values of particular sub-groups³³ and sub-indicators are compared to the corresponding EU averages³⁴ and also to past values (in percentage terms). Sub-indicators are used to shed light on the broader context of the country performance in early school leaving and tertiary education attainment and hint to policy levers that can be used to reach national targets by 2020, or to bring about change in the longer term.

Early leavers from education and training: sub-indicators	
Employment disadvantage	Difference in the employment rate in percentage points between individuals aged 20 to 64 with an education level corresponding to ISCED 0-2 and those with an education attainment corresponding to ISCED 3-4. A higher disadvantage in employment rates might therefore increase the incentives to stay longer in the education and training system.
Parental E&T (low)	Proportion of females aged 45 to 54 whose education attainment corresponds to ISCED 0-2. The education attainment of this female cohort is a proxy for the family background of the target population. A vast literature highlights mother's education as a key determinant for explaining differences in education attainment.
Investment	Annual expenditure on public and private education institutions in EUR PPS at primary and secondary levels (ISCED 1 to 4) divided by the size of the cohort aged 6-18 and compared to the GDP per capita in EUR PPS. This constitutes the measure of investment in education and training systems and is a proxy for the quality of the supply of education ³⁵ .
VET	Proportion of ISCED 3 students who participate in vocational education and training (VET). The number of students enrolling in VET programmes is believed to be associated with subsequent school outcomes. Vocational programmes help reducing early leaving from education and training and might help to make education systems more socially inclusive.
ECEC	Proportion of pupils aged between 4 years and the starting age of compulsory education who are participating in early childhood education and care (ECEC). Early childhood education and care is found to be associated with better performance later in life.
Tertiary education attainment: sub-indicators	
Employment advantage	Difference in percentage points in employment rate between individuals whose education attainment is equal to ISCED5-6 and those whose educational attainment corresponds to ISCED3-4. A higher return is believed to increase the incentives to stay longer in the education and training system.
Parental E&T (high)	Percentage of females aged 55-64 having completed ISCED 5-6. The education attainment of this female cohort is a proxy for the family background of the target population. A vast literature highlights mother's education as a key determinant for explaining differences in education attainment.
Investment	Annual expenditure on tertiary education (ISCED 5-6) divided by the size of the cohort aged 20-24 and compared to the GDP per capita expressed in PPS. This constitutes the measure of investment in education and training systems and is a proxy for the quality of the supply of education ³⁶ .
Upper secondary	Percentage of population aged 20-24 having attained at least upper secondary education. Rising skill demands in European countries have made qualifications at the upper secondary level the minimum credential for successful entries in the labour market. Upper secondary education attainment informs about the pool for new entrants into higher education.
Completion rate	Proportion of those who enter a tertiary-type A programme and go on to graduate from at least a first tertiary-type A programme. The completion rate in tertiary education allows contrasting countries in terms of the internal efficiency of the tertiary education system.

Note: This methodology is based on the Joint Assessment Framework (JAF) – the monitoring tool for the Europe 2020 strategy. Sub-groups and sub-indicators for the twofold Europe 2020 target on education and training are based on data provided by Eurostat (except from the completion rate, which comes from the OECD) and were developed by the JRC's Centre for Research on Lifelong Learning (CRELL).

³³ Native-born, foreign-born, female, male. The figures for foreign-born students are not always provided, following the approach of Eurostat, which does not provide figures for the subset of the foreign-born population. For early leavers from education and training, this data is not available for the following countries: BG, EE, HR, HU, LT, LV, MT, PL, RO, SK. Moreover, the data for CZ, SI and FI lack reliability due to small sample sizes and should therefore be interpreted with caution. For tertiary education attainment, data is not available for the following countries: BG, LT, PL, RO, SK. Furthermore, the data for EE, MT, SI and HR lack reliability due to small sample size and should therefore be interpreted with caution.

³⁴ When comparing sub-groups and sub-indicators to the corresponding EU average, standardised values are adopted. These standardised values are obtained by subtracting the EU weighted average and dividing by the standard deviation. In other words, the EU average becomes the reference point ("0") and the deviation from this reference point becomes comparable across different sub-groups and sub-indicators. Although data reported here refers to 28 EU countries, the EU weighted average is estimated across 27 countries as provided by Eurostat. Furthermore, the figures for the sub-group foreign-born are not always provided for all countries (see also footnote 2). Therefore, the standard deviation for this group is estimated only on available data.

³⁵ The indicator takes into account demographic effects and avoids penalising countries with a high share of students that spend less on a per capita basis compared to other countries that spend more on relatively fewer students.

³⁶ Ibid.