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Education and Training Monitor 2013

(Volume 2: Country analysis - Part 2 of 7: Cyprus, Czech Republic, Denmark, Estonia)

Table of contents

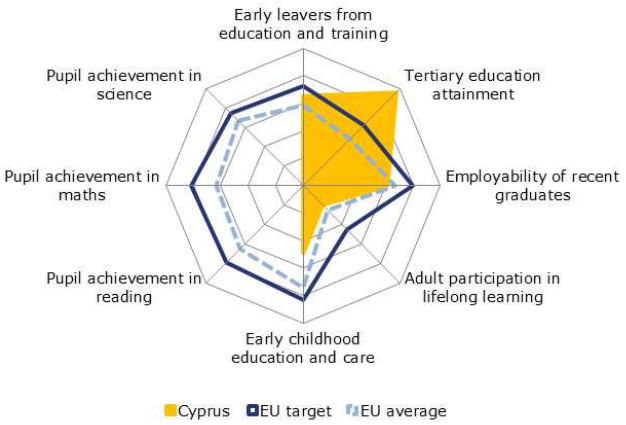
1. Key indicators and benchmarks

Europe 2020 headline targets			Cyprus 2009	Cyprus 2012	EU average 2009	EU average 2012	Europe 2020 target / Benchmark
1. Early leavers from education and training (age 18-24)			11.7%	11.4%	14.2% EU28	12.7% EU28	**EU target: 10%** National target: 10%
2. Tertiary educational attainment (age 30-34)			45.0%	49.9%	32.1% EU28	35.7% EU28	**EU target: 40%** National target: 46%
ET 2020 Benchmarks							
3. Early childhood education and care (4 years old - year before start of compulsory primary)			86.4%	85.0% 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	6.3%	7.1% 11	0.6%	0.7% 11	
	Higher Education	**b.** Erasmus inbound students as % of student population in host country		1.9% 11		1.1% 11	
		c. Inbound degree mobile students as % of student population in the host country		28.0% 11		7.0% 11	
6. Employment rate of graduates (age 20-34) having left education 1-3 years before reference year			81.1%	73.0%	78.3%	75.7%	**82%**
7. Adult participation in lifelong learning (age 25-64)			7.8%	7.4%	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		94.8%	92.4% 11	58.6%	60.8% 10	
Other ET 2020 Indicators							
9. Investment in education and training	**a.** General government expenditure on education (% of GDP)		7.2%	7.2% 11	5.5%	5.3% 11	
	b. Annual expenditure on public and private educational institutions per pupil/student in € PPS	ISCED 1-2	€ 8,491 08	€ 9,260 10	€ 5,732 08	€ 6,021 10	
		ISCED 3-4	€ 10,891 08	€ 10,849 10	€ 6,964 08	€ 7,123 10	
		ISCED 5-6	€ 10,343 08	€ 9,933 10	€ 9,309 08	€ 9,168 10	
10. Digital competences	**a.** Pupils in grade 4 (ISCED 1) using computers at school		:	:	60.7% 07	64.7% 11	
	b. Individuals aged 16-74 with high computer skills[2]		29.0%	23.0%	25.0%	26.0%	
11. Entrepreneurial competences	Individuals aged 18-64 who believe to have the required skills and knowledge to start a business		:	:	42.3% a	42.0% a	
12. Vocational education and training	Share of vocational students at ISCED 3		12.8%	12.7% 11	49.6%	50.3% 11	
13. Skills for future labour markets Projected change in employment 2010-2020 in %	High qualification		:	27.9%	:	19.1% EU28	
	Medium qualification		:	6.6%	:	4.6% EU28	
	Low qualification		:	-22.4%	:	-20.2% EU28	
14. Low-skilled adults	Literacy		:	11.8%	:	19.9% EU17	
	Numeracy		:	15.5%	:	23.6% EU17	
	Problem solving in technology rich environments[3]		:	20.2%	:	13.0% EU17	

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 refer to people without ICT experience and people who 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

Confronted with a difficult labour market, Cyprus faces a skills mismatch, which represents an obstacle to tackling unemployment and to supporting growth and innovation. With a threefold increase of the youth unemployment rate (15-24 years old) between 2008 and 2012 (from 9% to 27.8%), Cyprus had one of the highest year-on-year increases in the EU in 2011 and 2012. Cyprus has one of the highest shares in the EU of well-educated youngsters at tertiary level. However, the employment rate of tertiary graduates having graduated in the previous three years is one of the lowest in the EU (74.7% versus 81.5% in 2012).

Links between the labour market needs and the educational outcomes are still weak. In the EU, Cyprus has the lowest participation rate in upper secondary vocational education and training and one of the lowest share of young graduates in mathematics, science and technology[1]. Adult participation in lifelong learning remains below the EU average whilst there is a need to increase the low occupational mobility and to prepare people for the profound changes in the economic sectors[2]. The continuous increase in immigration rate, with a large proportion of low-skilled adults, will continue to require particular attention from education policies with the support of teachers and trainers well trained to address this issue.

The country has undergone a process of fiscal consolidation and is implementing the measures set out in the Economic Adjustment Programme (2013-2016) agreed in April 2013.

3. Investing in skills and qualifications

Investing in education and training in a context of economic crisis

Cyprus has the second highest general government expenditure in education and training as a share of GDP in the EU[3]. It has also a large private expenditure in education and training accounting in 2008 for 1.6% of GDP compared to less than 1% in most other EU Member State. Those last 4 years, investment in higher education increased much more than the EU average. Whilst there were no direct budget cuts for education in 2013, Cyprus anticipates by 2015 cutting current education expenditure by at least 3% including reducing human resource costs[4] through decrease of salaries and in the number of teachers. The Economic Adjustment Programme encompasses structural reforms related to the public service restructuring namely a scaled decrease of emoluments, limited measures specific to the educational system as of 2013 (e.g. a reduction of the number of teachers seconded to the Ministry of Education, elimination of the mentoring component for in-service training, reduction of the cost of afternoon and evening programmes) as well as adjustment of educational allowances from 2014. Important reforms in the field of education and training are currently co-financed by the European Social Fund. However, the absorption rate is lower than expected.

1 The 2011 share of MST graduates among 20 -29 years old in CY is 5.1% versus an EU average of 14.4%.
2 The Economic Adjustment Programme is aiming among others to support the downsizing of the banking sector and the shift towards growth enhancing sector namely the natural gas one
3 CY is one of the 4 EU countries with a more than 50% increase in the level of public spending during the last decade. See: Funding of Education in Europe. The Impact of the Economic Crisis. Eurydice Report March 2013
4 Funding of Education in Europe. The Impact of the Economic Crisis. Eurydice Report March 2013

Skills

As regards basic skills, according to a national survey[5] on 'Functional Illiteracy', the estimated percentages of pupils (6ths graders) with a high likelihood of remaining illiterate or with inadequate numeracy skills after completion of compulsory education decreased significantly (from 12.7% to 6.9% for the former, and from 8.3% to 5.5% for the latter) between 2007-8 and 2012-2013. Underperformance concerns mainly boys that do not speak Greek at home. On average students at ISCED 2 level learn 2 foreign languages.

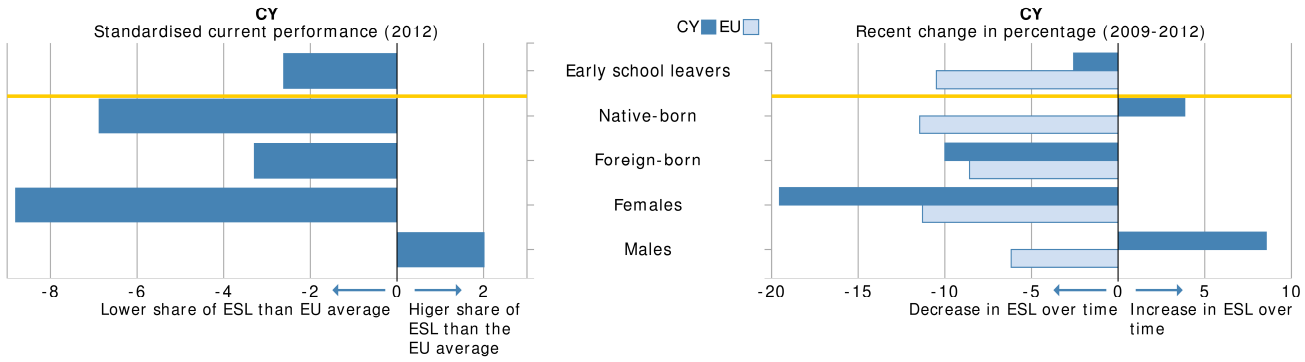
Progress is being made in the implementation of the 8 levels NQF (agreed in 2011) and in its referencing to EQF although there have been delays (planned by end 2013, initially expected by end 2012). This affects the integration of the system of vocational qualifications (SVQ) developed separately. Modest progress has been made in the implementation of the European Credit Transfer System for Vocational Education.

eEducation is one objective of the Digital Strategy (2012-2020). For this purpose the Ministry has initiated two strategic projects in 2012: the eContent and educational software acquisition and the creation of the Schoolnet DIA.S.(Educational Portal and LMS). Specific attention is given to the training of teachers ensuring their competence in using ICT tools and on pedagogical innovation and progress. An Action Plan covers the 2013-2015 period.

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

With a significant decrease from 14.9% to 11.4% of the early school leaving rate between 2006 and 2012, Cyprus performs better than the EU average (12.8% in 2012) and is now at 1.4 percentage point from its 10% national target. With a rate of 20.7% in 2012, foreign born people are much more at risk to be early school leavers than nationals. Boys with low socio-economic background are at the highest risk of dropping out of school. Moreover, this trend increased these last years opposed to the EU one. Many initiatives have been taken since 2007 with a strong focus on migrant pupils. However, comprehensive support for migrant pupils seems to be limited to ZEP schools (Educational Priority Zones)[6]. The evaluation of the Action Plan (2010-12) for the integration of migrants[7] is foreseen in 2013 in view of its renewal for the 2013-14 period[8].

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



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

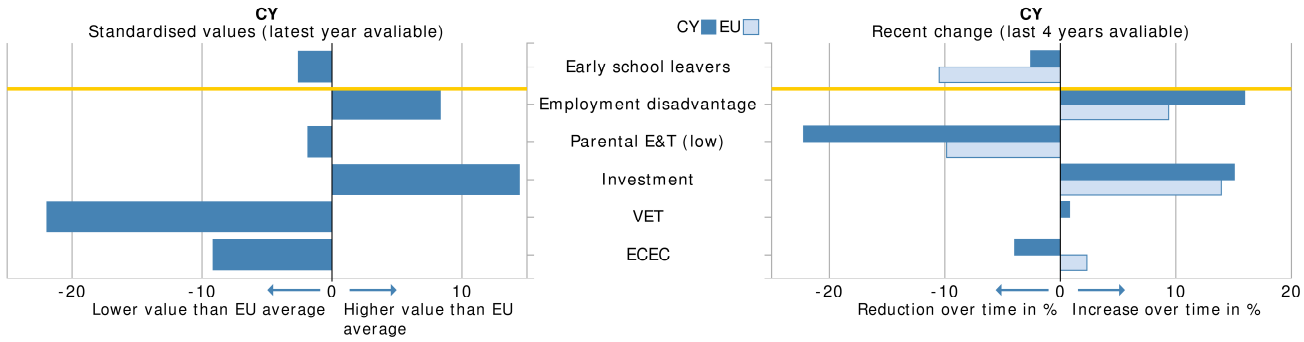
The share of female and male early school leavers in Cyprus is significantly different from the EU average: girls are much less represented contrary to the boys. Moreover this trend increased those last years and the share of native born boys is on the rise. As regard unemployment, early school leavers are comparatively more disadvantaged in Cyprus than on average in the EU. This trend increased these last years since the crisis.

Against the EU general trend, the participation in early childhood education, which is relevant for prevention of early school leaving, is stagnated since 2006 and remains below the EU average (85% vs. 93.2% in 2011) and 10 percentage points below the EU benchmark for 2020.

In a medium- to long-term perspective, improving school quality and outcomes may help reduce early school leaving. The new National Curriculum reform, which upgrades the curriculum for all public schools (from pre-primary to upper secondary education), has been gradually implemented in primary education and lower secondary education cycle (3 years Gymnasium) from the school year 2011-12. Complete implementation is planned by 2014-2015.

5 Results of the longitudinal national 'Literacy project' (for 6ths graders from the 2007-2008 and for 3rd grade from 2011-2012)
6 Study on educational support for newly arrived migrant children, European Commission, January 2013
7 National action Plan 2010-2012 for the integration of Third Country Nationals legally residing in Cyprus
8 Cyprus National Reform Programme 2013

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



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

Multiplying work-based learning and apprenticeships opportunities may also contribute to combat ESL, in particular considering the extremely low participation rate in VET. The first level of the New Apprenticeship System, started in October 2012-13, addresses youngsters (14- 16 years olds) who dropped out. A revised organisation model might be implemented for 2013-2014 on the basis of the lessons learned. Moreover, a reform restructuring upper secondary and upgrading secondary technical/vocational education to technological Lyceums is planned. The development of a new curriculum, which is part of the reform, seems postponed to 2015.

Evidence shows that school quality and outcomes strongly depend on the quality of the teaching force[9]. In response to austerity measures, the number of teachers will decrease after many years of increase. Despite the recent cut in public sector salary the teaching profession remains attractive and the demand for accessing the profession exceeds massively the offer. However, many consider that the capacity to attract and reward the best teachers is limited by the current selection (mainly based on a waiting list) and career path system. Reforms to modernise the selection and evaluation of the teaching profession have been under discussion with the teachers unions for many years now, without reaching agreement. Reorganisation will be needed in order to maintain the welcomed in-service training for teachers for which ad hoc support measures were stopped in 2013[10].

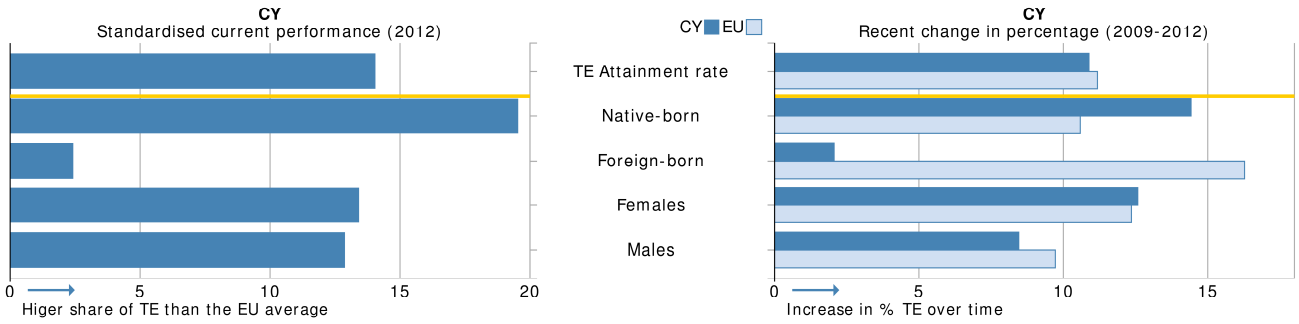
5. Encouraging participation in tertiary education and modernising higher education

With one of the highest tertiary attainment rates in the EU (49.9% compared to the European average of 35.8% in 2012), Cyprus has already reached its national target (46%). In recent years, increase in higher education investment has been largely above the EU average. At the same time, the employment advantage of higher education graduates is lower than in the EU average (see sub-indicators below). To complete the recent development of public universities, the set-up of a quality agency is progressing but slower than expected (planned by 2013). With the crisis and the higher-than-EU-average unemployment rate of recent tertiary graduates, one of the challenges for higher education is its relevance to labour market needs. Avenues for action remain to be explored in view of better guidance to youngsters on career opportunities, general introduction of a learning outcome approach, reform curricula allowing for recognised traineeships into higher education curricula and flexible modes of learning as well as measures to reinforce the link between higher educational outcomes and skills forecast.

With Greece and the UK being the most chosen destinations, student mobility is one of the highest in Europe. As a response to the crisis and to the lowering of educational grants, additional places are foreseen in the public universities[11] to compensate for an expected decrease in international mobility. Incoming mobility is traditionally lower, the language being considered as one of the main barriers.

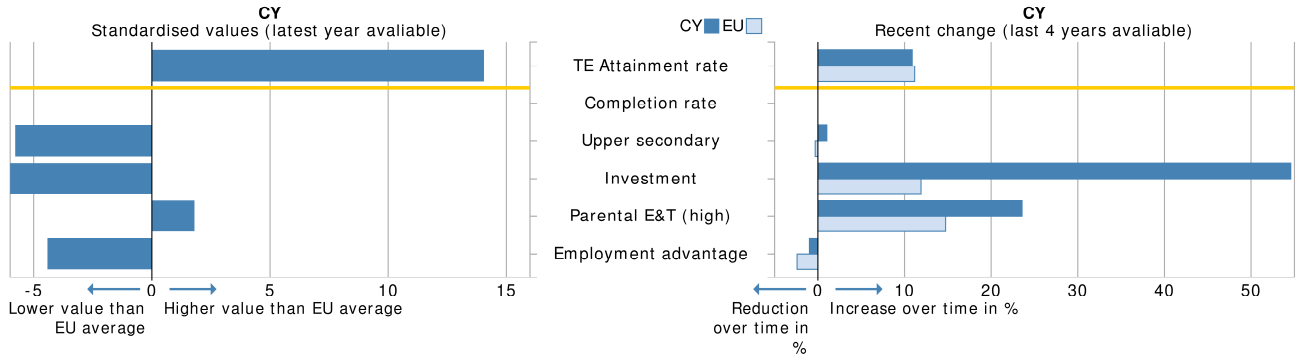
9 See European Commission (2012), Supporting the Teaching Professions for Better Learning Outcomes, SWD(2012) 374.
10 In the Economic Adjustment Programme
11 Cyprus national Reform Programme 2013

Figure 4. Tertiary education attainment: sub-groups



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

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 and reshaping vocational training

In 2012, the employment rates of recent graduates stagnated at 73.0% below the 75.7 % EU average. The 2013 National Reform Programme refers to plans to monitor the transition of VET graduates to the labour market and further education and training by using national monitoring systems.

Participation of upper secondary students in vocational education and training is the lowest in the EU (12.7% as against 50.3%, 2012) and below 5% for girls. Two reforms have been started to develop work-based learning and alternative pathways. Firstly, to decrease the drop-out rate and improve basic skills, Cyprus started in 2012-13 the implementation of the New Modern Apprenticeship (NMA) system, a two level system directed to youngsters between 14-25 years old. The NMA is expected to be fully operational in 2014-15. On the offer side, enterprises receive financial support to train apprentices. Secondly, in September 2012, Cyprus set up four post-secondary institutions for technical and vocational education and training, one in each district. Demand exceeded largely supply for both schemes (with the exception of NMA level2) for which a reinforcement is planned. It is a positive step forward despite the lack of quantified objectives for the number of apprenticeships and students. Close monitoring is called for to ensure that objectives are met in terms of addressing current skills shortages and in terms of flexibility to adapt to the changing skills needs.

A major reform related to upper secondary and upgrading of secondary technical/vocational education to technological Lyceums is under discussion. With modest progress in the discussion, the proposal is expected to be finalised by 2016[12]. Ways to develop a quality vocational education and training (VET[13]) could include reform curricula allowing for more work-based learning at an earlier stage, better guidance to youngsters on career

12 Cyprus 2013 National Reform Programme

13 With less than 15% of pupils, Cyprus is characterised by the lowest participation rate in upper secondary vocational education and training in EU and a very low participation of girls.

opportunities, actions to promote the attractiveness of VET, and measures to reinforce the link with future oriented-jobs. This is important because employment in medium and high qualification jobs is forecast to increase faster than the EU average up to 2020.

In addition to the NMA and the set-up of post-secondary institutions, focused initiatives have been taken to facilitate transition between education and work, like 'The job placement and training of unemployed tertiary education graduates scheme' (whose first results seem positive), accelerated initial training of newcomers, and a scheme for the enhancement of youth entrepreneurship.

7. Upgrading skills through lifelong learning

The Adult Skills Survey (PIAAC[14]) shows that adults (aged 16-65) in Cyprus score slightly below the EU average in the literacy and numeracy proficiency tests. Contrary to the results of most countries, the youngest generation (aged 16-24) scores worse than older generations. The performance of young people (aged 16-29) with upper secondary education is not significantly better than that of people with at most lower secondary education. Recent tertiary graduates (aged up to 29) have lower literacy and numeracy skills than recent upper secondary graduates in the best performing EU countries.

The Adult Skills Survey also reveals that the percentage of all adults with low skills is below the EU average (11% for literacy and 15% for numeracy, compared with 20% and 24% respectively). The difference in adult participation rates between lowest- and highest-skilled people is relatively small in Cyprus: low-skilled people in Cyprus are 3 times less likely to participate in job-related learning compared to high skilled people[15].

Cyprus is one of the few countries to have a national target for adult participation in lifelong learning set at 12% by 2020. Despite a Lifelong Learning Strategy (2007-2013), the adult participation in lifelong learning remains below the EU average (7.5% compared to 8.9% in 2011). Reaching the ambitious national target claims for reinforced efforts and a more ambitious policy.

The set-up of a consultative national forum for lifelong guidance was approved in March 2012 with the mandate of promoting a shared national policy in this area. This is a first step in view of an effective integrated delivery of guidance services cutting across the education and employment areas. Preparing people to the skills needed for the energy sector is key. As shown by a recent survey[16], this will require a cross sectoral approach and an appropriate organisation.

In 2010, 72% of enterprises provided vocational training to their staff in Cyprus, a rate slightly above the EU average[17]. Different measures have been taken or planned to secure the quality of the provision of trainings. The introduction of a system for the assessment and certification of training providers and trainers is considered a good practice[18].

14 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).

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

16 Survey on 'Early Identification of Employment and Training Needs for the effective utilisation of Natural Gas in Cyprus', Human Resource Development Authority, 2012

17 Continuing vocational training, Eurostat report, June 2013

18 Survey on 'Trainers in continuing VET : emerging competence profile, Cedefop, 2013

1. Key indicators and benchmarks

Europe 2020 headline targets			Czech Republic 2009	Czech Republic 2012	EU average 2009	EU average 2012	Europe 2020 target / Benchmark
1. Early leavers from education and training (age 18-24)			5.4%	5.5%	14.2% EU28	12.7% EU28	**EU target: 10%** National target: 5.5%
2. Tertiary educational attainment (age 30-34)			17.5%	25.6%	32.1% EU28	35.7% EU28	**EU target: 40%** National target: 32%
ET 2020 Benchmarks							
3. Early childhood education and care (4 years old - year before start of compulsory primary)			90.0%	87.8% 11	91.7%	93.2% 11	**95%**
4. Basic skills Low achievers (15 year-olds; Level 1 or lower in PISA study)	Reading		23.1%	:	19.6%	:	**15%**
	Mathematics		22.3%	:	22.2%	:	**15%**
	Science		17.3%	:	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	0.7%	0.1% 11	0.6%	0.7% 11	
	Higher Education	**b.** Erasmus inbound students as % of student population in host country		1.2% 11		1.1% 11	
		c. Inbound degree mobile students as % of student population in the host country		8.5% 11		7.0% 11	
6. Employment rate of graduates (age 20-34) having left education 1-3 years before reference year			84.5%	82.3%	78.3%	75.7%	**82%**
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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	
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	Medium qualification		:	-2.7%	:	4.6% EU28	
	Low qualification		:	-16.2%	:	-20.2% EU28	
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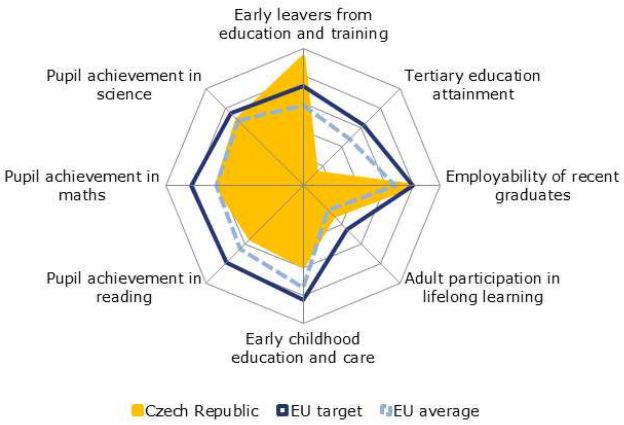


Source: DG EAC calculations on the basis of data from Eurostat (LFS 2012 and UOE 2011) and OECD (PISA 2009). *Note:* all scores are set between a maximum (the highest performers visualised by the outer ring) and a minimum (the lowest performers visualised by the centre of the chart).

2. Main challenges

The quality of compulsory and tertiary education remains a challenge, as identified by the Commission and Council in the European Semester 2013. Reforms have been initiated at all education levels to tackle these challenges, including curricular reforms, a new testing of pupils in 5th and 9th grade in reading, mathematics and foreign language, the setting up a of a new career system for teachers notably aimed at encouraging in-service training; a reform of the higher education sector was put again on the table after several trials in the past. These measures need to be pursued and reinforced, also through an improved use of EU funding. There is a need for preserving expenditure in education and training, which is lower than EU average.
As the country-specific recommendation of 2012 was only partially implemented, its objectives were continued through a more operational 2013 CSR: "Establish a comprehensive evaluation framework in compulsory education and take targeted measures to support schools that rank low in educational outcomes. Adopt measures to enhance accreditation and funding of higher education. Increase the share of performance-based funding of research institutions."

3. Investing in skills and qualifications

Investing in education and training in a context of economic crisis

While the public education spending as a percentage of GDP increased from 4.8% to 4.9% between 2010 and 2011, it remains lower than the EU average (5.3% in 2011)[19]. Public expenditure slightly increased at school level with a raise in teachers' salaries, and decreased in higher education/adult education, by 14% between 2008 and 2012[20]. Municipalities lacked the funds needed to adapt pre-primary provision to meet the rise in the birth rate from 2001. The Czech Republic aims to strengthen the links between funding and the quality of education provided, particularly with respect to the employability of graduates, and to further improve teachers' salaries[21]. The funding system of compulsory education will be revised, adding elements linked to number of classes/programmes to the per capita funding, with the aim of ensuring that quality is not compromised in regions with fewer children.

Skills

The percentage of 16-74 years-old with high computer skills has increased from a level much lower than EU average in 2009 (19% versus EU average of 25%) to the EU average of 26% in 2012. Financial literacy, entrepreneurial, ICT topics are being added to the curricula and steps have been taken to promote further use of ICT in education (digitalization of text books, teacher education, modernization of equipment, e-learning). The "Strategy for development of ICT in education" 2009-2013 also entails dedicated funding for ICT equipment. As regards entrepreneurship, only 39.2% of Czechs believe that they have the required knowledge, skills and

19 COFOG data, Eurostat
20 European University Association Public Funding Observatory
21 Eurydice, "Funding of education in Europe – the impact of the economic crisis", 2012

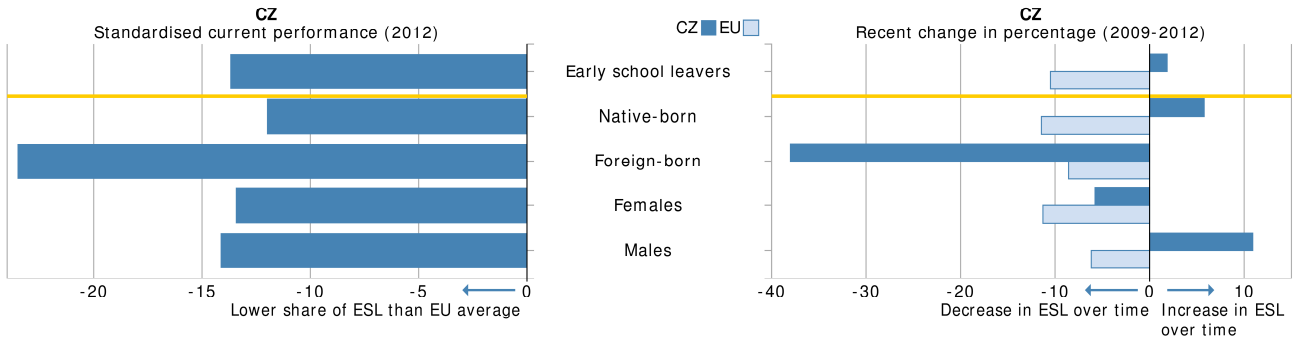
competence to set up a business which is rather low compared to other EU countries[22]. Teaching of a second language was introduced at primary level from September 2013[23].

The Lifelong Learning Strategy 2007-2015 and the Act on Verification and Recognition of Qualifications are the basis for the system of validation and recognition of qualifications, including those acquired through non-formal and informal learning. While it is still to be confirmed if the country will develop an overarching National Qualifications Framework (NQF), partial frameworks for vocational education and training (VET) and school education are in force, which were referenced to the European Qualifications Framework in 2011. The NQF for higher education is being developed.

4. Fighting against early school leaving and raising the bar in school education

The Czech Republic is one of the best EU-performers as to the headline target on early school leaving (ESL), with a rate of 5.5% in 2012, which is the level set for the national target 2020. ESL is mainly prevented by a high degree of permeability between education paths. Still, the increase in ESL from 4.9% in 2011 will have to be monitored closely in order to be constrained. The "Equal Opportunities" Action Plan adopted by the Government end 2012, together with EU-funded projects, could contribute to reducing the very high ESL rate among Roma children[24]. Only 24% of Roma children attend pre-school education and the education system fosters segregation[25].

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 and care declined between 2007 (92.6%) and 2011 (87.8%); facilities are insufficient, except for the last year of pre-school. Legal measures allowing employers to create company kindergartens (2012) and introducing new types of childcare services "children groups" (to be adopted in 2013) aim at increasing the offer, together with recent measures to increase quality[26].

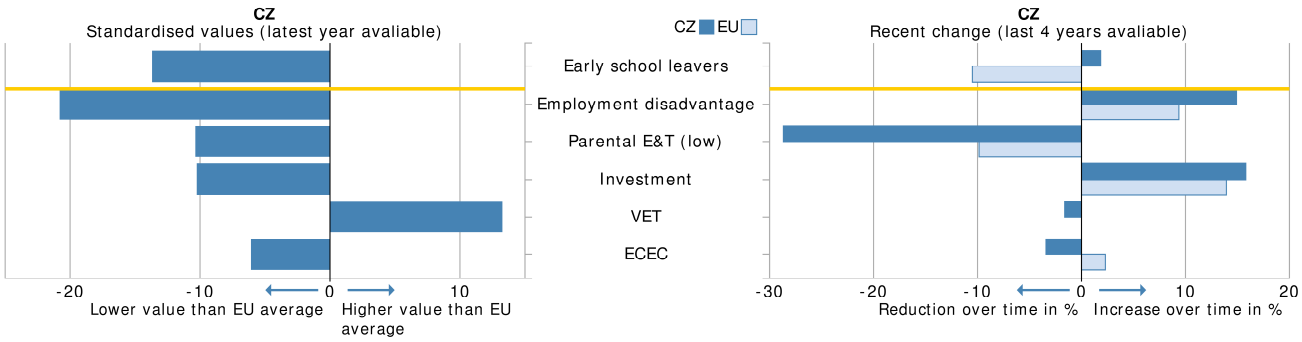
PISA results in 2009 pointed to a decline in students' learning outcomes compared to 2006 in mathematics and science[27], with high disparities in performance between schools (selective grammar vs other schools). The country is developing minimal educational standards, together with a national computer-based testing of pupils in grades 5 and 9, in the Czech language, mathematics and foreign language. The Government submitted end 2012 a proposal to strengthen the role of mathematics and science in the state Framework Education Programmes.

Teachers are currently badly remunerated at all school levels compared to other countries[28] and the teaching workforce is ageing rapidly. A new career-system for pedagogical staff is being prepared, aimed at improving the

22 2011 Global Entrepreneurship Monitor
23 2013 National Reform Programme (NRP)
24 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 97%, "Roma education in comparative perspective", UNDP/World Bank/EC regional survey
25 According to the Czech School Inspectorate, 26.4% of children educated in substandard schools designed to cater for the mentally challenged such schools were Roma in 2012. To be noted the positive trend from 35% in 2010.
26 2013 NRP
27 However, 2011 data from "Trends in International Mathematics and Science Study" (TIMMS) and "Progress in International Reading Literacy Study" (PIRLS) are on the rise compared to the previous editions.
28 Key data on teachers and school leaders in Europe 2013, Eurydice

quality and attractiveness of teaching through improved in-service training based on standards, increased teacher motivation through a widening of career possibilities and corresponding progression in salaries (change in legislation needed in 2014). The global envelope for teachers' salaries will need to be increased for the new system to give its full effects.

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



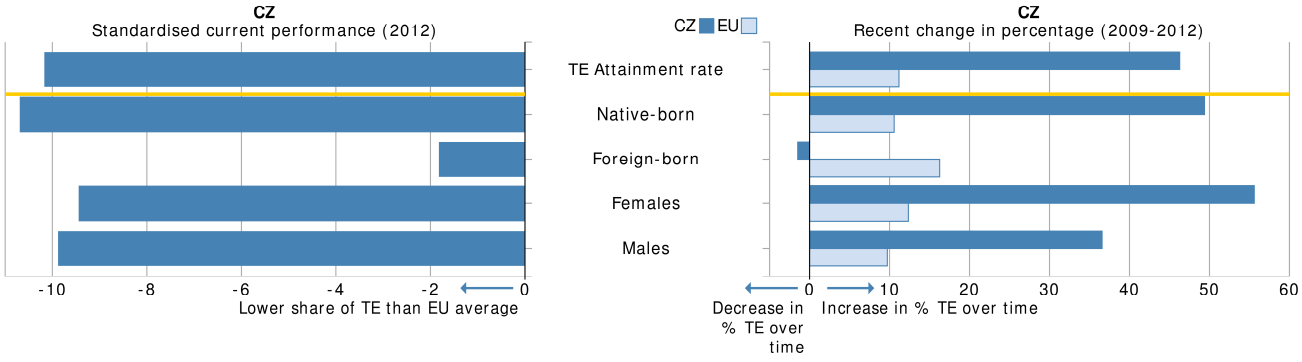
Source: JRC-CRELL. *Note:* see Annex 2 for an explanation of the sub-indicators.

5. Encouraging participation in tertiary education and modernising higher education

The Czech Republic's tertiary attainment rate (25.6% in 2012) is significantly lower than the EU average of 34.6%, but has nearly doubled since 2006. This increase, higher for females than for males, has shifted the focus of policy makers from quantity to quality and labour market relevance, also with the aim to reduce the drop-out rate. 2011 OECD data indicate that just above 70% of students who enter tertiary education do graduate with at least a first degree at this level[29]. The 32% national target for tertiary attainment is likely to be met. Employment rate of people aged 20-34 having achieved tertiary education was 87.1% in 2012, while it was 77.8% for those having achieved only upper-secondary education.

The share of performance-based funding of higher education institutions (HEIs) introduced in 2010, for which indicators cover i.a. research, teaching, internationalization, employability, was increased to 22.5% in 2013. A reform on accreditation, profiling and funding of HEIs should be adopted in the near future[30]. International student mobility is low. The government has submitted end 2012 a proposal for practical training in companies for students of upper secondary and HE. Previously envisaged introduction of generalised tuition fees and loans for students has been postponed due to strong resistance.

Figure 4. Tertiary education attainment: sub-groups

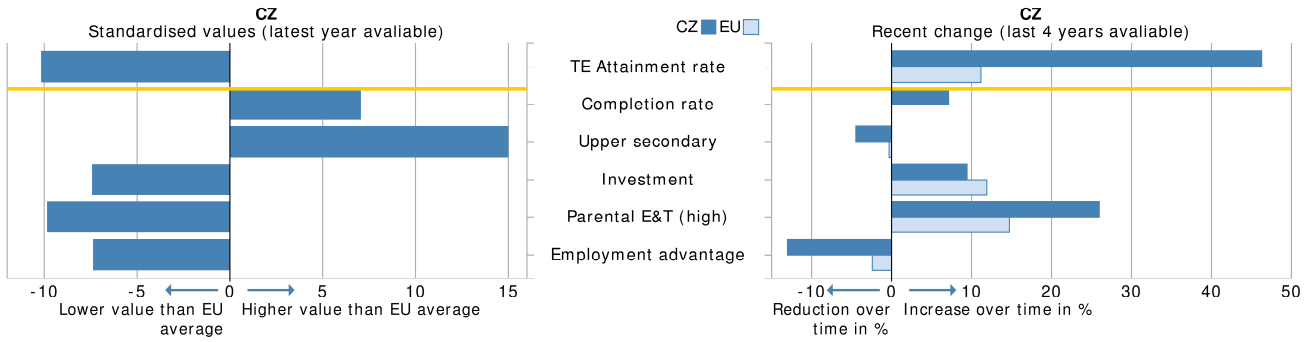


Source: JRC-CRELL. *Note:* TE = tertiary education. See Annex 2 for further information.

29 Education at a Glance 2013

30 2013 NRP announced 2013 but due to the fall of the Government and anticipated general elections, the process might be delayed.

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 school to work

The large VET sector (73% of students in upper secondary education were enrolled in VET in 2010 – EU average was 50%) is school-based[31]. Provision of training in VET is still variable and participation of companies in work place training provision is low. Social partners' involvement in VET is fragmented, not all sectors being covered at this stage. The government adopted in January 2013 an action plan so support VET, focusing on the need to further enhance cooperation between schools and businesses; cooperation was extended through the newly introduced final examination, involving employers[32]. End 2012, the Government submitted a proposal to improve the not-well developed career-guidance. Other on-going measures in the field of VET concern curricula, schools self-evaluation, development of qualification standards, tax deductions for businesses in view of supporting corporate investment in education[33].

While youth unemployment (15-24) has doubled since 2008, it still remains below EU average. The employment rate of graduates was among the highest in the EU in 2012 (82.3% vs 75.7%) and increased between 2011 and 2012[34]. Unemployment rate of the population having not attained upper-secondary level (25.5%) was much higher than the rate of those with higher levels of education[35].

Skills mismatches impact especially on disadvantaged groups - such as low-skilled or Roma - and regions and on young people and current initiatives to develop systematic anticipation of labour market needs and to involve employers more in VET are aimed at reducing the mismatches.

7. Upgrading skills through lifelong learning

The Survey of Adult Skills (PIAAC[36]) shows that adults (aged 16-65) in the Czech Republic perform significantly above the EU average in the proficiency tests on literacy and numeracy. The skills of the younger age groups are generally higher than those of the overall population. However, young people (aged up to 29) with tertiary educational attainment have a slightly lower performance in the literacy and numeracy proficiency tests compared to older cohorts (30-65) with the same level of education. The performance of young people (aged 16-29) with upper secondary education is close to that of people with at most lower secondary education.

The Czech Republic results however show a high share of highly-skilled individuals who are inactive (24%). In contrast to the good results on literacy and numeracy, the share of Czech adults with high digital problem-solving skills is only at the EU average.

Participation of adults in lifelong learning grew significantly in the last years and has reached 10.8% in 2012 vs 9% in the EU, showing that the Czech Republic would be well on track to reaching the EU benchmark by 2020 if efforts are sustained. The share of enterprises offering continuing training is higher than the EU average and the share of employees participating is the EU highest (72% of employees working in companies offering training

31 European Commmission Staff Working Document SWD(2012)375 final "Vocational education and training for better skills, growth and jobs" accompanying the Commission Communication "Rethinking Education: Investing in skills for better socio-economic outcomes"
32 2013 NRP
33 2013 NRP
34 Rate of people aged 20-34, upper-secondary and tertiary, having left education and training no more than 3 years before reference year, CRELL calculations based on Eurostat LFS data
35 Eurostat, LFS
36 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).

participated in 2010)[37]. Although PIAAC states that participation in lifelong learning is relatively equally distributed among highly or poorly skilled people, the Labour Force Survey indicates that participation is still low for those with low qualifications (2.8% in 2011), who would benefit most of further education.

One of the projects aiming at increasing the opportunities for Czech citizens to improve their skills is carried out with EU funds in line with the 2007 Strategy for Lifelong Learning and related action plan adopted in 2009 consisted in transforming 325 secondary schools into centres for lifelong learning offering – besides IVET – various forms of continuing education.

[37] Eurostat, CVTS 2011

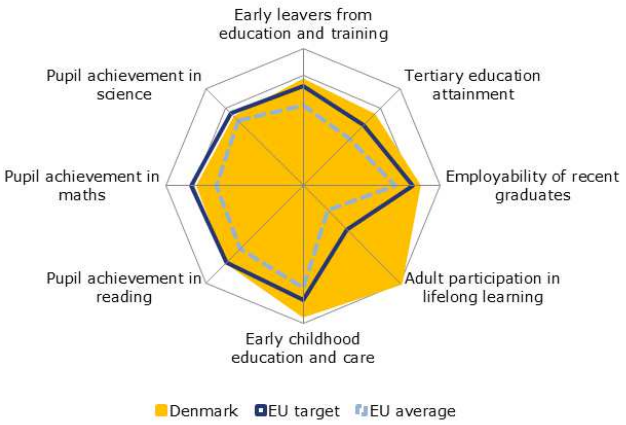
1. Key indicators and benchmarks

Europe 2020 headline targets			Denmark 2009	Denmark 2012	EU average 2009	EU average 2012	Europe 2020 target / Benchmark
1. Early leavers from education and training (age 18-24)			11.3%	9.1%	14.2% EU28	12.7% EU28	**EU target: 10%** National target: <10%
2. Tertiary educational attainment (age 30-34)			40.7%	43.0%	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)			91.9%	97.9% 11	91.7%	93.2% 11	**95%**
4. Basic skills Low achievers (15 year-olds; Level 1 or lower in PISA study)	Reading		15.2%	:	19.6%	:	**15%**
	Mathematics		17.1%	:	22.2%	:	**15%**
	Science		16.6%	:	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	1.0%	1.1% 11	0.6%	0.7% 11	
	Higher Education	**b.** Erasmus inbound students as % of student population in host country		2.6% 11		1.1% 11	
		c. Inbound degree mobile students as % of student population in the host country		7.8% 11		7.0% 11	
6. Employment rate of graduates (age 20-34) having left education 1-3 years before reference year			87.9%	84.1%	78.3%	75.7%	**82%**
7. Adult participation in lifelong learning (age 25-64)			31.2%	31.6%	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]		:	:	:	43.5% 11	
	b. ISCED 2 students learning two or more foreign languages		84.2%	81.5% 11	58.6%	60.8% 10	
Other ET 2020 Indicators							
9. Investment in education and training	**a.** General government expenditure on education (% of GDP)		8.0%	7.8% 11	5.5%	5.3% 11	
	b. Annual expenditure on public and private educational institutions per pupil/student in € PPS	ISCED 1-2	€ 7,949 08	€ 8,598 10	€ 5,732 08	€ 6,021 10	
		ISCED 3-4	€ 8,740 08	€ 9,177 10	€ 6,964 08	€ 7,123 10	
		ISCED 5-6	€ 13,810 08	€ 14,617 10	€ 9,309 08	€ 9,168 10	
10. Digital competences	**a.** Pupils in grade 4 (ISCED 1) using computers at school		78.8% 07	79.8% 11	60.7% 07	64.7% 11	
	b. Individuals aged 16-74 with high computer skills[2]		31.0%	42.0%	25.0%	26.0%	
11. Entrepreneurial competences	Individuals aged 18-64 who believe to have the required skills and knowledge to start a business		35.0%	31.0%	42.3% a	42.0% a	
12. Vocational education and training	Share of vocational students at ISCED 3		47.3%	46.1% 11	49.6%	50.3% 11	
13. Skills for future labour markets Projected change in employment 2010-2020 in %	High qualification		:	15.8%	:	19.1% EU28	
	Medium qualification		:	-15.0%	:	4.6% EU28	
	Low qualification		:	21.2%	:	-20.2% EU28	
14. Low-skilled adults	Literacy		:	15.7%	:	19.9% EU17	
	Numeracy		:	14.2%	:	23.6% EU17	
	Problem solving in technology rich environments[3]		:	21.7%	:	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

The main challenge of the Danish education system is its cost-effectiveness. Despite the considerable amounts spent on education as a percentage of GDP, indeed the highest share of GDP in Europe, upper secondary completion rate is low, largely due to high early drop-out rates from vocational education and training. In addition, the insufficient number of apprenticeships places for young people also leads to dropping out of education. Furthermore, despite progress in recent years, Denmark has one of the longest average transition periods from lower secondary to upper secondary and from higher education to work.

Although some measures were adopted and the government presented a proposal of a school reform and additional funds to be used to improve the quality VET and increase the number of apprenticeships, further effort is needed to face these challenges. Also improving the level of such key competencies as literacy and numeracy remains a challenge. Apprenticeships or work-based training together with targeted career guidance need further attention.

Therefore the 2013 European Semester country-specific recommendation (CSR) on education focused on four topics: improving the quality of vocational training to reduce drop-out rates, increasing the number of apprenticeships, implementing the reform of primary and lower secondary education in order to raise attainment levels and improving the cost-effectiveness of the education system.

3. Investing in skills and qualifications

Investing in education and training in a context of economic crisis

Denmark is keeping its position as the country within the EU where the government is spending most on education as a percentage of GDP (7.8% in 2011, compared to the EU average of 5.3 %).

The government devotes more than DKK 1 billion in 2012 and 2013 to VET. The budget agreement 2012 provides funding for 10.400 additional apprenticeship places and for creating 1.500 extra in-school training places. In the frame of 2013 budget there is an agreement to provide 3.1 billion DKK in the period 2013-2016 to ensure quality in vocational training and strengthen the so-called education guarantee (ensure the apprenticeship places).

With the Agreement on the Budget Bill for 2012 a total of DKK 420 million has been allocated for 2012 and DKK 630 million for 2013 to be spent on increased higher education activity. For 2013, in order to fight youth unemployment, the government proposed a new package stimulating job rotation, apprenticeships and vocational education. DKK 300 million are allocated to provide education for the unemployed who will lose their unemployment benefits in 2013 and DKK 600 million are allocated between 2012 and 2016 to tackle youth unemployment.

Skills

Denmark is above the EU benchmarks for the three basic skills in reading, mathematics and science. In the PISA survey, the performance in mathematics worsened significantly between 2006 and 2009, whereas the share of low-achievers in reading and science fell during the same period. Girls outperform boys in reading like in the other Nordic countries, whereas in Denmark boys have a lower percentage of low achievers in both mathematics

and science than girls. Denmark has a comparatively high penetration of computer use in schools (78.8% of pupils in 4th grade use computers at school (the average for countries where data is available is 60.7%). Likewise ICT skills of the population are above the EU average. As regards entrepreneurship, the share of the population believing to have the required knowledge to start a business is 31%, as against the EU average of 42% in 2012. Foreign language learning starts in primary education where all pupils learn English as a first foreign language and this continues into lower secondary education (ISCED 2) 2 foreign language is compulsory from 5 class from the school year 2014/15 (the political agreement of 7/6-2013). Danish pupils study more foreign languages (1.8 in 2012) than the EU average.

Educational goals are defined at a central level. For example, since 2009, all curriculum subjects in primary and lower secondary schools share the common objective of improving pupils' reading skills. National tests in Danish reading have been introduced and are conducted regularly to identify individual learning needs. Specialist reading teachers are widely available in the country as are digital reading and writing programmes for students. Available evidence also shows that the test results are used actively by teachers for improving skill levels of pupils.

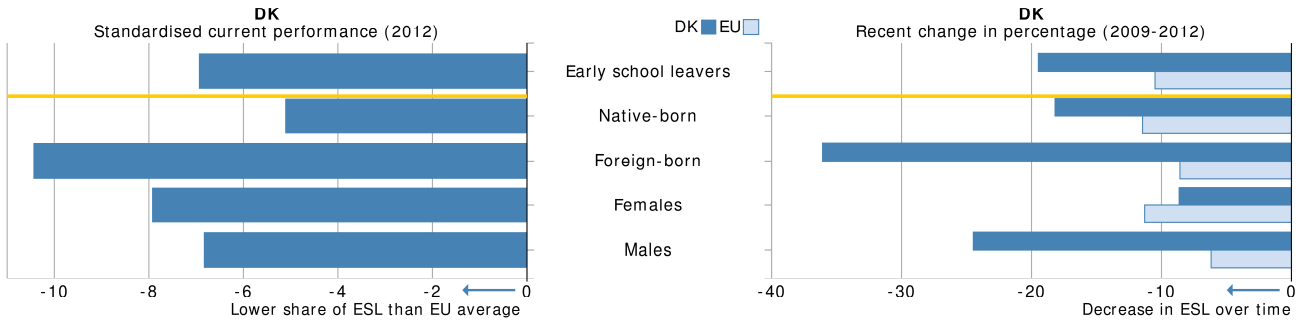
The forecast for the Danish employment pattern up to 2020 would increase the demand for high and low skilled persons whereas the demand for medium skilled would fall significantly. This forecasted employment pattern is in marked contrast to the overall EU forecast of a positive demand for medium skilled people and a negative development for the low skilled.

Denmark has national qualifications frameworks 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

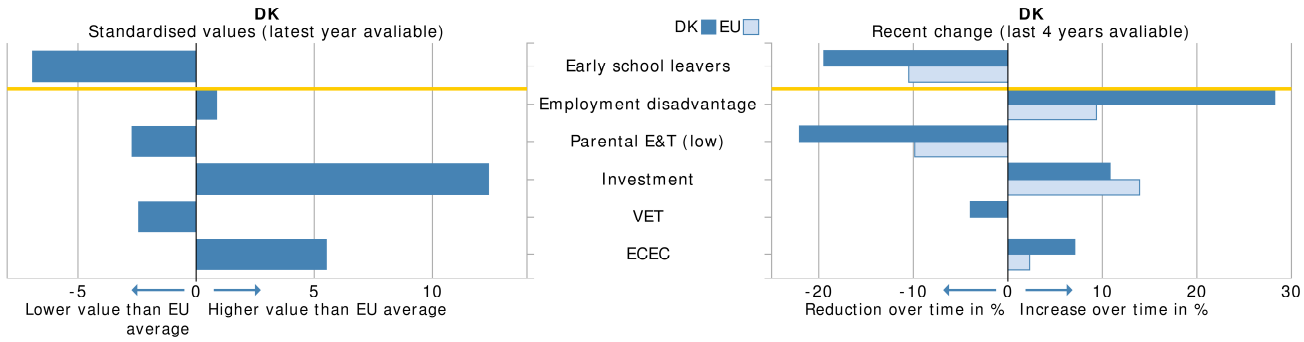
As regards the early leaving school rate (9.1% in 2012), it has decreased significantly in recent years (11.3% in 2009; 11.0% in 2010 and 9.6% in 2011). The trend has been similar for those born abroad (decrease from 15.8% in 2009 to 10.1% in 2012). The EU and the national (10%) targets have already been achieved.

Figure 2. Early school leavers of specific population sub-groups



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

Figure 3. Early school leavers and sub-indicators



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

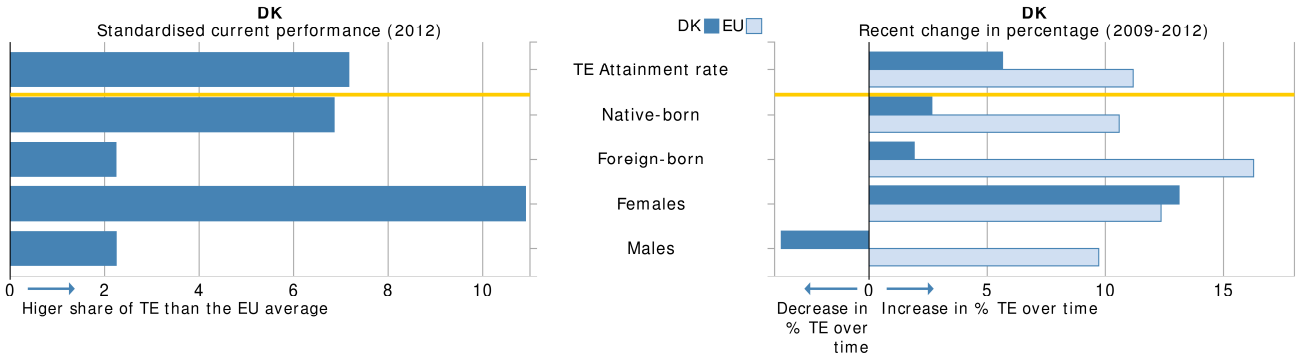
In June 2013 the Government (consisting of the parties 'Socialdemokraterne', 'Radikale Venstre' and 'Socialistisk Folkeparti') found a political agreement first with the parties 'Venstre' and 'Dansk Folkeparti' and shortly later also with the party 'Konservative' about the future of the Danish municipal primary and lower secondary school. The reforms will be implemented in the school year 2014-2015. The agreement foresees longer school hours spent on core subjects such as Danish, maths and English and more emphasis on practical training, e.g. art, music and activity-based education and improving basic skills.

The other reform that is planned is in upper secondary vocational education and training. The aim is to improve cost-effectiveness, enhancing quality and decreasing the number of drop-outs. This should be achieved by securing more apprenticeships places, improving guidance services and fostering more cooperation between VET schools and companies by providing companies with additional incentives. The student grant reform was agreed and made into legislation in June 2013.

5. Encouraging participation in tertiary education and modernising higher education

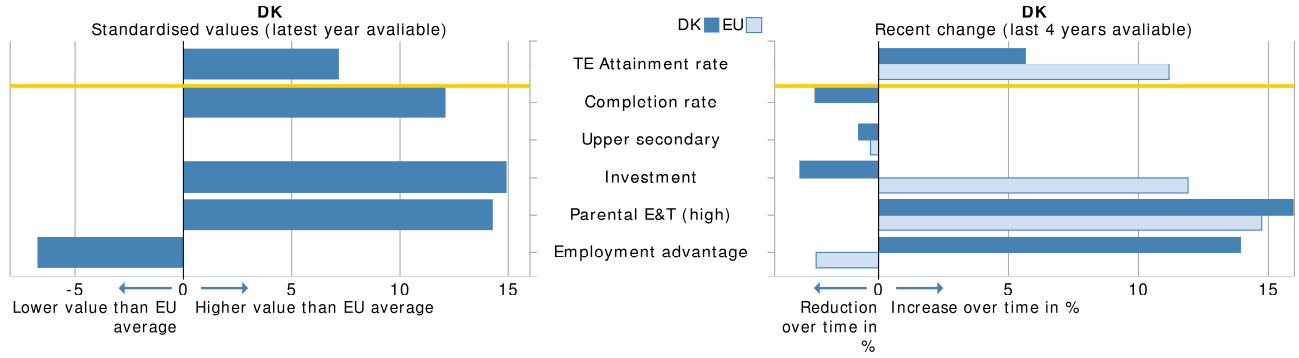
As regards the Europe 2020 target on tertiary education, Denmark's tertiary attainment rate is well above the EU average (43% as against 35.7% in 2012). More women (52.6%) than men (33.7%) have tertiary education, while the differences between native-born (43.5%) and foreign-born (39.3%) are less significant[38].

Figure 4. Tertiary educational attainment of specific population sub-groups



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

Figure 5. Tertiary educational attainment and sub-indicators



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

The Government set a national target of 60% of the young people to complete at least one tertiary education programme by 2015. To this end, the Agreement on the Budget Bill for 2012 a total of DKK 420 million have been allocated for 2012 and DKK 630 million for 2013 to be spent on higher education.

Lengthy study periods at tertiary level have long been characteristics of the Danish higher education system. Denmark also has one of the longest average transition periods from lower secondary to upper secondary and from higher education to work (on average graduates from tertiary education are nearly 28 years old before they start work in 2011, in 2001 this figure stood at nearly 29 years).

[38] Source: Eurostat (LFS).

Following a decision in June 2013, changes to the *state education grant system* (SU) will be gradually implemented from 1 July 2014 to 1 January 2016.[39] The main aim of this reform is to create incentives for getting students faster through the education system and into the labour market. One element is that, for students starting their tertiary education more than two years after the qualifying examination, the duration of the State education grant system will be limited to the standard length of the course in question. Other students will be allowed an additional six months for a bachelor's degree and in addition extra six months for a master's degree. This will be complemented by a new framework for higher education supporting the completion of studies and increasing demands on universities for improving their education provision, for example through improving possibilities for students to obtain credits for prior education, or better and more flexible transition between bachelor and master's degree.

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

Participation of upper secondary students in vocational education and training (VET) is slightly below the EU average (46.1% as against 50.3% in 2011). The high drop-out rate in VET (almost 50 per cent) is linked to the fact that there are not sufficient apprenticeships places available, especially in the context of the current economic crisis. In 2012, 3700 students could not find an apprenticeship place. In fact, employers lacked incentives to create apprenticeship places. Furthermore, low basic skills of VET pupils is another factor contributing to the high drop-out rate.

To this end, vocational education and training is being reformed and negotiations are on the way with social partners and municipalities. The reform should further strengthen the roles of guidance centres and trade committees for matching VET with labour market needs, develop incentives for the creation of more apprenticeship places and support high-quality and attractive vocational upper secondary education through the application of the European Quality Assurance Framework for VET and also through the introduction of training placements abroad in VET programmes (including considering the introduction of shorter programmes for the most vulnerable young people). The Expert Committee on Vocational Youth Education set up in 2012 by the Danish Government (with representatives of trade unions and employers) is due to make its final proposals in autumn 2013 in order to find a lasting solution to the continuing problem of a lack of private apprenticeships and high drop-out rates. There are discussions on introducing flexible, shorter VET cycles for the most vulnerable learners. The reform also aims to strengthen the role of guidance centres and trade committees and support high-quality and attractive upper secondary VET.

The reform is backed up by financial resources. The government devotes more than DKK 1 billion in 2012 and 2013 to VET. The budget agreement 2012 provides funding for 10.400 additional apprenticeship places and for creating 1.500 extra in-school training places. The 2013 budget agreement includes provision of 3.1 billion DKK in the period 2013-2016 to ensure quality in vocational training and strengthen the so-called education guarantee (ensure the apprenticeship places).

Transition from school to the labour market for young people has become more challenging. The employment rate of graduates (ISCED 3-6) aged 20-34, who have graduated no more than three years ago, decreased from a pre-crisis level of 90.8% in 2007 to 84.1% in 2012, while remaining markedly above the EU average (75.6%). Furthermore, the share of young people aged 18-24 not in employment and not in any education and training increased from 5.7% in 2008 to 8.8% in 2012, although it remains one of the lowest in the EU.

For 2013, in order to fight youth unemployment, the government proposed a new package stimulating job rotation, apprenticeships and vocational education. DKK 300 million are allocated to provide education for the unemployed who will lose their unemployment benefits in 2013 and DKK 600 million are allocated between 2012 and 2016 to tackle youth unemployment.

7. Upgrading skills through lifelong learning

The Survey of Adult Skills (PIAAC[40]) shows that adults (aged 16-65) in Denmark perform significantly above the EU average in numeracy and above the EU average both in literacy and in problem solving in technology rich (ICT) environments. The proportion of adults with no ICT experience is very low (2%, compared to an EU average of 12%).

[39] For details see Danish Agency for Higher Education and Educational Support (http://www.su.dk/Nyheder/Sider/su-reformenervedtaget.aspx)

[40] 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 performance of young people (aged up to 29) with tertiary education is not significantly better than of those with upper secondary education. Furthermore, the gap in literacy proficiency is rather large between the foreign- and native-born (26 points in literacy i.e. equivalent to 4 years of education) compared to the EU average.

Lifelong learning is deeply rooted in the Danish tradition and culture. Denmark is one of the EU leaders in adult participation in lifelong learning with a rate of 31.6% in 2012 against an EU average of 9%. More women participate in lifelong learning (37.8%) than men (25.4%), but there is no significant difference between native-born (31.6%) and foreign-born (31.5%)[41].

While in adult education in the EU by far the most learning activities are of non-formal nature, this is less the case in Denmark, where almost 6% of adults report having participated in formal learning during the last twelve months (EU: 2.4%)[42].

Access to enterprise-provided vocational training is as well high, with 85% of enterprises reporting to have offered such courses (EU: 66%)[43]. Nevertheless, the majority of learning happens outside companies: more than three times as many adults report to have participated in "other job-related learning activities" than in activities sponsored by enterprises[44].

41 Eurostat, LFS 2011.
42 Eurostat, AES 2011.
43 Source: Eurostat, CVTS 2011.
44 Eurostat, AES 2011.

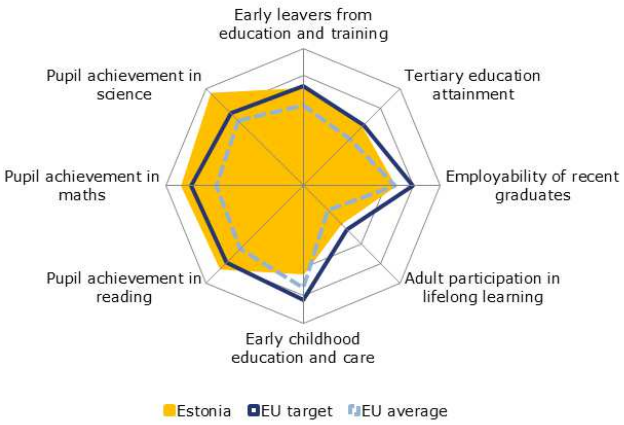
1. Key indicators and benchmarks

Europe 2020 headline targets			Estonia 2009	Estonia 2012	EU average 2009	EU average 2012	Europe 2020 target / Benchmark
1. Early leavers from education and training (age 18-24)			13.9%	10.5%	14.2% EU28	12.7% EU28	**EU target: 10%** National target: 9.5%
2. Tertiary educational attainment (age 30-34)			35.9%	39.1%	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)			95.7%	89.1% 11	91.7%	93.2% 11	**95%**
4. Basic skills Low achievers (15 year-olds; Level 1 or lower in PISA study)	Reading		13.3%	:	19.6%	:	**15%**
	Mathematics		12.7%	:	22.2%	:	**15%**
	Science		8.3%	:	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	2.5%	2.6% 11	0.6%	0.7% 11	
	Higher Education	**b.** Erasmus inbound students as % of student population in host country		1.2% 11		1.1% 11	
		c. Inbound degree mobile students as % of student population in the host country		2.1% 11		7.0% 11	
6. Employment rate of graduates (age 20-34) having left education 1-3 years before reference year			67.6%	75.1%	78.3%	75.7%	**82%**
7. Adult participation in lifelong learning (age 25-64)			10.5%	12.9%	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]		:	61.0% 11	:	43.5% 11	
	b. ISCED 2 students learning two or more foreign languages		:	:	58.6%	60.8% 10	
Other ET 2020 Indicators							
9. Investment in education and training	**a.** General government expenditure on education (% of GDP)		7.2%	6.5% 11	5.5%	5.3% 11	
	b. Annual expenditure on public and private educational institutions per pupil/student in € PPS	ISCED 1-2	€ 4,432 08	€ 4,108 10	€ 5,732 08	€ 6,021 10	
		ISCED 3-4	€ 4,871 08	€ 5,355 10	€ 6,964 08	€ 7,123 10	
		ISCED 5-6	€ 4,500 08	€ 5,038 10	€ 9,309 08	€ 9,168 10	
10. Digital competences	**a.** Pupils in grade 4 (ISCED 1) using computers at school		:	:	60.7% 07	64.7% 11	
	b. Individuals aged 16-74 with high computer skills[2]		28.0%	32.0%	25.0%	26.0%	
11. Entrepreneurial competences	Individuals aged 18-64 who believe to have the required skills and knowledge to start a business		:	43.0%	42.3% a	42.0% a	
12. Vocational education and training	Share of vocational students at ISCED 3		33.0%	34.4% 11	49.6%	50.3% 11	
13. Skills for future labour markets Projected change in employment 2010-2020 in %	High qualification		:	6.5%	:	19.1% EU28	
	Medium qualification		:	7.5%	:	4.6% EU28	
	Low qualification		:	17.8%	:	-20.2% EU28	
14. Low-skilled adults	Literacy		:	13.0%	:	19.9% EU17	
	Numeracy		:	14.3%	:	23.6% EU17	
	Problem solving in technology rich environments[3]		:	27.1%	:	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

The main challenge for Estonia will remain the improvement of the quality of the education system, while pursuing its adaptation to its demographic situation as well as to the requirements of the labour market.

As regards upper-secondary level there is an identified need to re-organise the existing network of schools. For vocational education and training (VET), it will be important for Estonia to make VET more relevant for both the present labour market as well as for future skills needs. Finally, in higher education there is clearly a necessity to steer more students towards the fields of study required by the future labour market, in particular as regards science, technology, engineering and mathematics (STEM).

Estonia also aims at increasing the adult participation rate in lifelong learning to 20%, in which the inclusion of low-skilled remains a particular concern, and reducing the share of adults without professional or vocational education to below 30%, hence further efforts will be essential in this area.

Participation of children in early childhood education and care (ECEC), especially under the age of 3, also remains a concern.

Consequently, the 2013 European Semester country-specific recommendation (CSR) on education focuses on the further adaptation of the Estonian education and training system to the needs of the labour market, the participation of the low-skilled in life-long learning, as well as on the cooperation of higher education institutions with business and research.

3. Investing in skills and qualifications

Investing in education and training in a context of economic crisis

Public spending on education (COFOG data) continues to be relatively high in comparison with the EU average; in 2011 it was at 6.5% of GDP versus 5.3 % for the EU-27. It has only slightly decreased throughout the period 2008-11.

The authorities gave priority to the investment in education in recent years in Estonia. The education sector is named a priority in the current government coalition programme. Investment in education has enjoyed priority over the past years and remained stable during the economic crisis. The government expenditure on education is set to play an even more prominent role, i.e. given also the importance of sizable EU transfers. It will be however important in the future to combine the relatively high level of expenditure with the planned efficiency gains, such as the improvement of the delivery of educational services by local authorities, as suggested by the OECD[45].

Skills and qualifications

In terms of basic skills, 15-year-olds' performance on 2009 PISA tests in literacy, numeracy and science continues to largely outperform the EU average, and is consistent with results of previous PISA tests.

[45] OECD Public Governance Reviews - Estonia: Towards a Single Government Approach, see in particular case study 1: Estonian education – sustaining high quality schools,
link http://www.oecd.org/estonia/oecdpublicgovernancereviews-estoniatowardsasinglegovernmentapproach.htm

Foreign language skills are more developed than the EU average. For entrepreneurship, 43 % of 18-64 years old population are believed to have the required skills and knowledge to start a business.

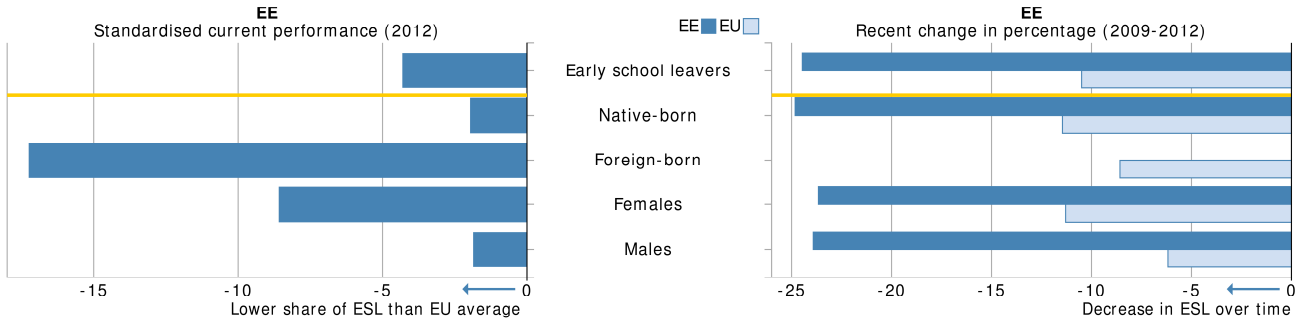
ICT skills of the population are slightly above the EU average with 32% of individuals aged 16-74 in 2012 with high computer skills. Estonia is also intensely investing in the use of new technologies and digital skills, by e.g. updating the ICT skills of students, teachers and teacher educators (*"Õppiv Tiiger"* - The Learning Tiger Programme 2008-13 in general as well as vocational education and the *"Tiigriülikool"* - Tiger [Leap] - Programme 2009-12 in higher education). The Estonian government has very recently launched a pilot project for computer based statistics education in lower and upper secondary school. The project includes the development of a new conceptual approach and digital learning material.

Estonia has a national qualifications framework (NQF) in force. Estonia has also already referenced the Estonian qualifications framework to the European Qualifications Framework (EQF) in 2011.

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

Estonia performs slightly better than the EU average for the early school leaving rate (12.9% in 2012). It is relatively close to both the EU deadline target for 2020 (10%) as well as its national target (9.5%). It is also worth noting that a significant reduction of the early school leaving rate for males took place in recent years, but it still remains twice as high as for females. As regards the period 2011-12 the ESL rate has all in all decreased by 0.4 p.p.

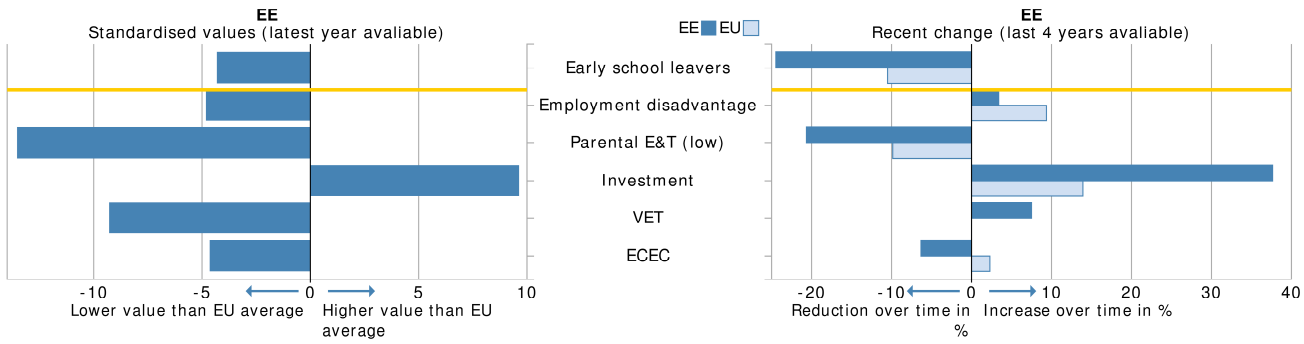
Figure 2. Early leavers from education and training: sub-groups



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

Investment is strong and it is increasing. Labour market disadvantage is not so strong, but perhaps a stronger parental education has built a tradition for further learning.

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



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

In the spring of 2012 Estonia initiated preparations for the basic school and upper secondary school reform: changes in the Basic School and Upper Secondary School Act were approved in the Parliament in June 2013 and came into effect on 1 September 2013. The main change includes a clear distinction between basic school and

upper secondary school in order to increase the attractiveness of vocational school education in relation to upper secondary school, especially upon completion of basic education. The financing rules for schools were made more transparent and the working arrangements for teachers were made more flexible as well as more attention is given to the teaching profession and to increasing the responsibilities of school directors in school management. The process also includes the consolidation of the upper secondary school network and the launching of a programme of investment with local authorities, aimed at raising the quality of the school system, at obtaining relevant key competences, and at matching educational outcomes with the needs of the job market, as well as at adapting educational provision to Estonia's adversely evolving demographic situation, including through reallocation of infrastructure and resources. The initial funding for the programme amounts to 24 million EUR p.a. for the period 2012-15. The reform is a step in the right direction and is expected to provide for a smoother transition to vocational education after basic school. However, its impact will only probably show in the future and the implementation will require further monitoring.

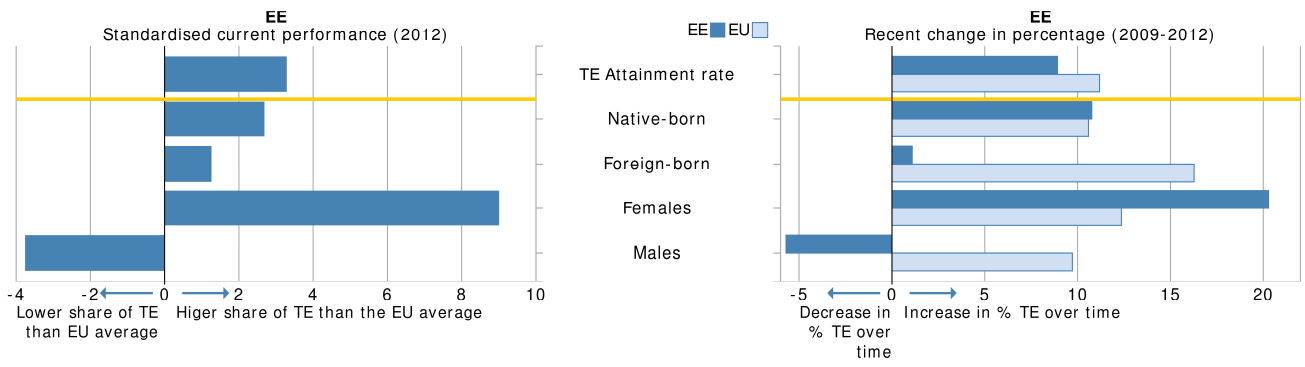
One of the impacts of this reform outlined by Ministry of Education and Research in their preliminary assessment includes a more precise division of responsibilities between the state, local government and the school level (school directors). This includes e.g. better defined responsibilities for financing of teacher salaries. However, the reform of the upper-secondary school network may prove difficult and take a long time. It remains also to be seen whether it is feasible to implement this long-term initiative independently from a possible future territorial reform of the country, providing for the efficient delivery of educational services for the Estonian population, as suggested by the OECD.

Participation in early childhood education was at 89.1% in 2011, slightly below the EU average. Participation of children in ECEC especially under the age of 3 remains a concern.

5. Encouraging participation in tertiary education and modernising higher education

Estonia performs better that the EU average for the tertiary attainment rate (39.1% in 2012). It has almost reached in this area both its national, as well as the EU target for 2020. In addition, a strong increase in tertiary attainment of females was noted for Estonia and the rate remains almost twice as high as for males. As regards the period 2011-12 the completion rate has decreased by 1.2 pp. The number of graduates in science, mathematics and technology is still low when compared to the EU average.

Figure 4. Tertiary education attainment: sub-groups



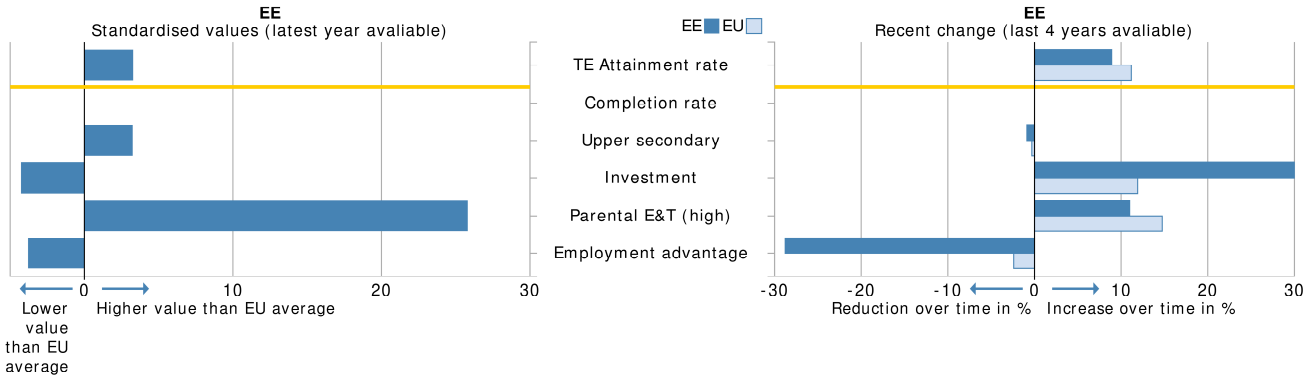
Source: JRC-CRELL. *Note:* TE = tertiary education. See Annex 2 for further information.

Investment is low but has been increasing. Like with ESL, the incentive to continue with tertiary attainment is rather low (limited employment advantage) and has been decreasing considerably. But also here a strong parental education might point towards a tradition of learning.

Estonia proceeded with the adoption of the New Higher Education Act in May 2012. The major aims of the reform are to increase the fairness of the higher education system and the efficiency of studies, to reduce the division between the various fields of higher education and to increase the accountability of institutions of higher education in ensuring the quality of education. In addition the reform intends to steer more students towards mathematics, science and technology (MST) subjects, corresponding to the current and future skills needs of the labour market (e.g. as regards the so far unmet demand for ICT specialists). At present the Ministry of Education and Research (MoER) is in the process of implementing this important reform, *inter alia* through the conclusion of performance agreements between the Ministry and universities. However, this new institutional arrangement will have to be balanced against the need to preserve the high degree of autonomy and the governance structures of Estonian universities. As regards the cost of this reform, it is estimated for the State budget at € 6.1 million in 2013, € 18.8 million in 2014 and € 33.0 million in 2015, but there is also a possible

risk of insufficient public budget compensation for a certain number of higher education institutions (HEIs), thus not fully covering the potential loss of currently important private funding.

Figure 5. Tertiary education attainment: sub-indicators



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

Together with the reform, the Government adopted the amendments to the Study Allowances and Study Loans Act in December 2012, with which the needs-based study allowance was introduced. The new allowance is a national allowance which is designed to support students from financially disadvantaged backgrounds in terms of their access to higher education, success in their studies and completion of a study programme within a nominal duration. The system of needs-based study allowances was effectively introduced as of the 2013-14 academic year and will apply to all students entering higher education.

The establishment of performance agreements between the MoER and 6 higher education institutions (HEIs) is a step in the right direction, i.e. by allowing the steering of students towards areas with the most promising employment outlook (STEM) in a context in which the number of graduates in science, mathematics and technology is still low in EU comparison. This orientation also seems to be corresponding to the future skills needs of the country, as outlined by future skills forecasts. It is also worth mentioning that the process is now well on track with the conclusion of all the 6 performance agreements in early 2013 and the inception of the new arrangements as of September 2013. It is expected that the reform will lead to a rise in education quality, provide better access to higher education and make university graduates more competitive on the job market.

6. Facilitating the transition from education to work

Estonia is faced with a problem of a high number of people without any professional qualifications, since about 30.3% of Estonians aged 25-64 years in 2012 have graduated from neither VET nor university. Therefore this group has only compulsory or upper-secondary general education at the moment. A number of ambitious initiatives (e.g. TULE, KUTSE) intend to address these two important challenges in the field of education and training, often with the assistance of financing from EU structural funds, in particular the European Social Fund (ESF). A recent Eurostat study shows that 68% of Estonian enterprises provided in 2010 continuous vocational education and training (CVET) for its employees, slightly higher than the 66% EU-average.

Estonia decided to pursue the modernisation effort regarding its vocational education and training (VET) sector, in particular via the revision of the VET Institutions Act presented by the government in late 2012, which was adopted on 12 June 2013 and entered into force as of 1 September 2013.

The reform focuses on the improvement of quality, modernisation of curricula in order to make them more flexible and better corresponding to industry needs, as well as the raising of professional standards for educators. The act defines new types of vocational education which can be acquired and are in line with the Estonian qualifications framework. Also, an effort is made to attract adults to acquire vocational education or improve their current qualifications. In the framework of the reform, a new vocational education standard has been introduced that foresees a new level of training in vocational education institutions for high level professionals and specialists. In order to include employers more in the development of vocational education, a system of quality assessment for vocational education institutions has been introduced which foresees the inclusion of employers' organisations and professional associations. The aim of this initiative is also for VET students to acquire better and up-to-date qualifications for the employers by the time of graduation. Preliminary plans include establishing a managing centre for apprenticeship training, in order to foster the extended use of this type of training form in VET. It is set to support schools and enterprises, and create 2.000 apprenticeship places in co-operation with VET institutions and employers. This is a very useful and important new action as work-based training will be made more prevalent and the so-far very limited apprenticeships opportunities will be enhanced.

This initiative will, however require substantive public and private funding, e.g. with the co-financing of future structural funds, and a high degree of cooperation of social partners, in particular the enterprise sector, in order to make it a fully-fledged success.

Estonia is experiencing a relatively high level of youth unemployment (23.1% in the first quarter of 2013) and will have to continue efforts in order to modernise and adapt its education system to the future needs of the Estonian labour market. The employment rate of graduates suffered from the recent economic crisis, but after reaching its lowest level at 64.3% in 2010 it rebounded in 2011 and remained stable in 2012 (at 75.1%)

Estonia's employment pattern up to 2020 is forecast to diverge markedly from the EU average in both high and low qualification jobs, with a modest increase in the former and a large increase in the latter. Employment in low qualification jobs is projected to rise by 17.8% by 2020 while demand for high qualifications is set to increase by only 6.5% during this same period.

7. Upgrading skills through lifelong learning

Estonia is confronted with relatively significant skill mismatches with regard to the current needs of the labour market, as a result of a major structural shift from non-tradable to tradable sectors in recent years

The Survey of Adult Skills (PIAAC[46]) shows that adults (aged 16-65) in Estonia perform above the EU average in the proficiency tests on literacy and numeracy. The same holds true for young adults (aged 16-24). In particular, young tertiary graduates (aged up to 29) score highest in literacy among the EU countries participating in the survey. The younger generation scores better in literacy (11 points, i.e. equivalent to skills usually acquired with 1 to 2 years of education) than the overall population. The share of low-skilled adults is below 15%, significantly below the EU average. However, the low-skilled are 4 times less likely to participate in job-related learning than high skilled adults[47]. Finally, the highly developed literacy and numeracy skills do not necessarily translate into large productivity gains for the economy.

As regards progress by Estonia towards the European benchmark on adult participation in lifelong learning, there is a clear increase from 6.5% in 2006 to 12.9% in 2012. But it remains much lower for the 50+ age group and the foreign-born persons.

In July 2012 the Estonian government decided to set up an inter-ministerial Life-long Learning Strategy Task Force, whose aim is to elaborate a new national LLL Strategy for 2014-20, which is a long-awaited and key element for the strategic development of education policy in Estonia. It remains to be seen whether the new strategy, set to be presented to the government in late 2013, will be based on the proposal previously formulated by the Estonian Cooperation Assembly, the Estonian Education Forum and the Ministry of Education and Research (MoER) and called 'Estonian Education Strategy: 2012-20'. This already existing blue-print comprehensively tackles the main challenges of the sector in Estonia, including the one related to the strengthening of linkages between education and the knowledge-based society, as well as the innovation economy. The adoption of a national LLL strategy is a necessity for Estonia and would not only demonstrate the country's commitment to this important principle but also greatly facilitate in the future the use of structural funds, in line with the priorities established within such a long-term strategic document.

Providing opportunities for low-skilled workers to take part in lifelong learning still remains a challenge for Estonia, and until now there are no specific measures planned to increase participation in lifelong learning among this group.

[46] 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).

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

Annex 1. Summary statistics on the headline target

Early leavers from education and training

European Union (EU 28)

EU Benchmark	**10** %
EU average (2009)	**14.2** %
EU average (2012)	**12.7** %
Evolution 2009/12	**-1.5** p.p.

		OVERVIEW					SUB-GROUPS / EU average *(2012)*									SUB-INDICATORS / EU average *(latest year available)*									
							Standardized level values					Graphic display					Standardized level values						Graphic display					
		2009 (%)	2012 (%)	Position / EU benchmark (p.p.)	Position / EU Average (p.p.)	Evolution 2009/2012 (p.p.)	Early leavers	Native-born	Foreign-born	Females	Males	Early leavers	Native-born	Foreign-born	Females	Males	Early leavers	Employment disadvantage (difference low/medium educ)	Parental educ. and training (low)	Investment in prim-sec educ	Participation in VET (ISCED 3 level)	Particip. early childhood educ	Early leavers	Employment disavantage	Prental educ. (low)	Invest. prim-sec educ.	Participation in VET	Particip. early educ.
BE	Belgium	11.1	**12.0**			▲ 0.9	-1.5	-2.0	-2.0	-3.3	-1.2						-1.5	-4.9	0.8	7.4	13.1	5.3						
BG	Bulgaria	14.7	**12.5**			▼ -2.2	-0.6	2.0	-17.3	4.4	-4.8						-0.6	-13.7	-6.6	-10.1	1.1	-7.4						
CZ	Czech Republic	5.4	**5.5**			≈ 0.1	-13.7	-12.0	-23.5	-13.4	-14.1						-13.7	-20.8	-10.4	-10.3	13.3	-6.1						
DK	Denmark	11.3	**9.1**			▼ -2.2	-6.9	-5.1	-10.4	-7.9	-6.8						-6.9	0.9	-2.7	12.4	-2.5	5.5						
DE	Germany	11.1	**10.5** p			▼ -0.6	-4.3	-4.9	-3.5	-2.6	-6.4						-4.3	-1.6	-7.8	-2.0	2.6	3.4						
EE	Estonia	13.9	**10.5**			▼ -3.4	-4.3	-2.0	-17.3	-8.6	-1.9						-4.3	-4.8	-13.5	9.6	-9.3	-4.6						
IE	Ireland	11.6	**9.7**			▼ -1.9	-5.8	-4.7	-9.0	-6.2	-6.2						-5.8	-1.5	-0.6	7.4	-9.5	7.1						
EL	Greece	14.5	**11.4**			▼ -3.1	-2.6	-6.5	11.1	-4.2	-2.3						-2.6	17.6	4.6	(:)	-10.9	-20.7						
ES	Spain	31.2	**24.9**			▼ -6.3	22.7	19.3	10.2	21.6	21.1						22.7	7.6	11.8	-2.1	-2.9	7.4						
FR	France	12.2	**11.6**			▼ -0.6	-2.3	-1.6	-1.8	-2.6	-2.8						-2.3	3.2	2.6	-4.3	-3.3	7.4						
HR	Croatia	3.9	**4.2**			≈ 0.3	-16.1	-14.6	-17.3	-16.3	-16.5						-16.1	0.6	-1.2	-12.1	12.4	-25.1						
IT	Italy	19.2	**17.6**			▼ -1.6	9.0	6.3	9.1	7.7	8.2						9.0	2.8	9.8	0.2	5.7	3.9						
CY	Cyprus	11.7	**11.4**			≈ -0.3	-2.6	-6.9	-3.3	-8.8	2.0						-2.6	8.4	-1.9	14.5	-22.0	-9.2						
LV	Latvia	13.9	**10.5**			▼ -3.4	-4.3	-2.0	-17.3	-10.6	-1.1						-4.3	5.5	-13.7	-1.7	-7.3	-0.7						
LT	Lithuania	8.7	**6.5**			▼ -2.2	-11.8	-10.2	-17.3	-14.1	-10.9						-11.8	-12.1	-15.1	-9.9	-12.8	-10.1						
LU	Luxembourg	7.7	**8.1** p			≈ 0.4	-8.8	-8.9	-10.1	-12.1	-7.0						-8.8	13.8	-0.9	-9.0	6.5	2.5						
HU	Hungary	11.2	**11.5**			≈ 0.3	-2.4	-0.4	-17.3	-0.7	-4.7						-2.4	-10.9	-3.8	-10.0	-14.1	1.3						
MT	Malta	36.8	**22.6**			▼ -14.2	18.4	21.8	-17.3	14.5	19.1						18.4	-9.8	25.9	11.4	-6.7	7.4						
NL	Netherlands	10.9	**8.8** p			▼ -2.1	-7.5	-5.9	-9.0	-8.2	-7.8						-7.5	1.3	0.7	-2.8	11.0	7.0						
AT	Austria	8.7	**7.6**			▼ -1.1	-9.8	-11.0	-5.3	-8.2	-11.3						-9.8	-4.9	-2.8	0.3	15.1	1.1						
PL	Poland	5.3	**5.7** p			≈ 0.4	-13.3	-11.6	-17.3	-16.5	-11.5						-13.3	-7.9	-10.3	-3.3	-1.2	-16.5						
PT	Portugal	31.2	**20.8**			▼ -10.4	15.0	18.3	-3.6	7.3	18.5						15.0	16.1	24.6	7.5	-4.6	2.3						
RO	Romania	16.6	**17.4**			▲ 0.8	8.6	11.4	-17.3	12.6	4.4						8.6	7.9	-1.7	-26.7	7.5	-12.5						
SI	Slovenia	5.3	**4.4**			▼ -0.9	-15.8	-14.6	-24.1	-17.2	-15.2						-15.8	-4.1	-5.1	9.7	8.8	-0.4						
SK	Slovakia	4.9	**5.3**			≈ 0.4	-14.1	-12.4	-17.3	-14.1	-14.3						-14.1	-24.7	-10.6	-13.8	12.0	-18.1						
FI	Finland	9.9	**8.9**			▼ -1.0	-7.3	-5.7	-27.3	-6.4	-8.4						-7.3	-1.5	-10.1	5.5	11.3	-21.3						
SE	Sweden	7.0	**7.5**			≈ 0.5	-9.9	-9.6	-8.6	-10.4	-10.4						-9.9	0.0	-6.1	5.2	3.5	2.2						
UK	United Kingdom	15.7	**13.5**			▼ -2.2	1.3	4.1	-9.0	3.1	-0.9						1.3	-1.6	-0.8	11.1	-8.4	4.1						

Source: DG EAC, based on Eurostat data (LFS) and CRELL calculations

Legend:

p.p. : variation in percentage points **p**: provisional

Country position / benchmark and EU average

- BELOW or EQUAL to the EU benchmark/average
- CLOSE to the EU benchmark/average (0.1 - 1 p.p.)
- ABOVE the EU benchmark/average (> 1 p.p.)

Country's evolution 2009/2012 + performance

- ▼ Decrease — Highest performers
- ≈ Stable (+/- 0.5 p.p.)
- ▲ Increase — Lowest performers

Sub-indicators and standardized level values

For more information, please see Annex 2

Tertiary educational attainment

European Union (EU 28)

EU Benchmark	**40** %
EU average (2009)	**32.1** %
EU average (2012)	**35.7** %
Evolution 2009/12	**3.6** p.p.

		OVERVIEW					SUB-GROUPS / EU average *(2012)*										SUB-INDICATORS / EU average *(latest year available)*										
							Standardized level values					Graphic display					Standardized level values						Graphic display				
		2009 (%)	2012 (%)	Position / EU benchmark (p.p.)	Position / EU Average (p.p.)	Evolution 2009/2012 (p.p.)	Tertiary educ. attainment	Native-born	Foreign-born	Females	Males	Early leavers	Native-born	Foreign-born	Females	Males	Tertiary educ. attainment	Completion rate at ISCED 5A	Upper sec. educ. attainment	Investment in tertiary educ.	Parental education & training (high)	Employment advantage (difference medium/high educ.)	Tertiary educ. attainment	Completion rate ISCED 5A	Upp. sec. educ. attainment	Invest. tertiary educ.	Parental educ. (high)	Employment advantage
BE	Belgium	42.0	**43.9**			▲ 1.9	8.1	9.8	0.2	9.3	5.9						8.1	1.0	-6.1	4.3	6.6	2.3						
BG	Bulgaria	27.9	**26.9**			▼ -1.0	-8.9	-9.5	(:)	-5.5	-11.9						-8.9	(:)	12.7	-6.4	6.1	9.3						
CZ	Czech Republic	17.5	**25.6**			▲ 8.1	-10.2	-10.7	-1.8	-9.4	-9.9						-10.2	7.1	15.0	-7.4	-9.8	-7.4						
DK	Denmark	40.7	**43.0**			▲ 2.3	7.2	6.9	2.3	10.9	2.3						7.2	12.1	0.0	14.9	14.3	-6.7						
DE	Germany	29.4	**31.9**			▲ 2.5	-3.9	-3.2	-2.2	-6.2	-0.6						-3.9	7.1	4.2	(:)	2.6	-2.5						
EE	Estonia	35.9	**39.1**			▲ 3.2	3.3	2.7	1.3	9.0	-3.8						3.3	(:)	3.3	-4.3	25.8	-3.8						
IE	Ireland	48.9	**51.1**			▲ 2.2	15.3	13.0	8.0	15.5	13.3						15.3	(:)	-1.9	(:)	7.1	10.7						
EL	Greece	26.5	**30.9**			▲ 4.4	-4.9	-2.5	-8.3	-5.0	-4.3						-4.9	(:)	8.5	(:)	-4.7	13.3						
ES	Spain	39.4	**40.1**			▲ 0.7	4.3	8.8	-3.8	4.6	3.7						4.3	10.1	-21.3	9.2	-3.1	6.3						
FR	France	43.2	**43.6**			≈ 0.4	7.8	8.0	1.6	7.5	7.4						7.8	(:)	-6.4	0.5	0.4	-1.1						
HR	Croatia	20.6	**23.7**			▲ 3.1	-12.1	-12.3	-4.0	-9.7	-13.1						-12.1	(:)	22.0	-6.5	-2.5	17.1						
IT	Italy	19.0	**21.7**			▲ 2.7	-14.1	-12.0	-8.0	-11.9	-15.5						-14.1	(:)	5.6	-7.2	-9.0	-2.5						
CY	Cyprus	45.0	**49.9**			▲ 4.9	14.1	19.6	2.4	13.4	12.9						14.1	(:)	-5.8	-6.0	1.8	-4.4						
LV	Latvia	30.1	**37.0**			▲ 6.9	1.2	0.8	-0.5	7.0	-6.0						1.2	(:)	6.1	-5.5	5.9	19.8						
LT	Lithuania	40.6	**48.7**			▲ 8.1	12.9	11.5	(:)	14.2	9.8						12.9	(:)	9.2	2.2	11.5	25.5						
LU	Luxembourg	46.6	**49.6**			▲ 3.0	13.8	5.1	8.1	7.7	20.2						13.8	(:)	-4.8	(:)	3.4	9.9						
HU	Hungary	23.9	**29.9**			▲ 6.0	-5.9	-6.6	1.3	-3.9	-7.4						-5.9	-20.2	9.4	(:)	-2.8	6.1						
MT	Malta	21.0	**22.4**			▲ 1.4	-13.4	-14.8	1.8	-13.9	-11.7						-13.4	(:)	-7.0	-6.3	-15.0	-2.5						
NL	Netherlands	40.5	**42.3** p			▲ 1.8	6.5	7.6	-0.1	4.2	8.9						6.5	4.0	-2.8	3.5	3.6	-9.1						
AT	Austria	23.5	**26.3**			▲ 2.8	-9.5	-9.5	-4.8	-11.6	-6.0						-9.5	-3.0	14.3	2.5	-7.8	-5.9						
PL	Poland	32.8	**39.1** p			▲ 6.3	3.3	2.5	(:)	5.6	0.3						3.3	-6.1	9.7	6.1	-5.4	15.4						
PT	Portugal	21.1	**27.2**			▲ 6.1	-8.6	-8.6	-3.5	-8.6	-7.8						-8.6	-1.0	-11.4	0.8	-8.4	-2.1						
RO	Romania	16.8	**21.8**			▲ 5.0	-14.0	-14.4	(:)	-14.6	-11.9						-14.0	(:)	5.1	-12.9	-12.0	11.2						
SI	Slovenia	31.6	**39.2**			▲ 7.6	3.4	4.7	-7.5	8.3	-2.3						3.4	(:)	15.8	10.0	-1.4	10.3						
SK	Slovakia	17.6	**23.7**			▲ 6.1	-12.1	-12.5	(:)	-10.2	-13.1						-12.1	3.0	11.3	-10.6	-6.4	-8.2						
FI	Finland	45.9	**45.8**			≈ -0.1	10.0	10.3	0.0	13.3	5.5						10.0	8.1	15.7	27.7	18.3	-1.3						
SE	Sweden	43.9	**47.9**			▲ 4.0	12.1	12.3	4.3	11.9	11.6						12.1	-20.2	6.3	19.4	17.4	-11.8						
UK	United Kingdom	41.5	**47.1**			▲ 5.6	11.3	7.7	8.0	8.8	13.3						11.3	0.0	-8.2	4.6	12.1	-9.1						

Source: DG EAC, based on Eurostat data (LFS) and CRELL calculations

Legend:

p.p. : variation in percentage points **p**: provisional

Country position / benchmark and EU average

- ABOVE or EQUAL to the EU benchmark/average
- CLOSE to the EU benchmark/average (- 1/<0 p.p.)
- BELOW the EU benchmark/average (< -1 p.p.)

Country's evolution 2009/2012 + performance

- ▲ Increase
- ≈ Stable (+/- 0.5 p.p.)
- ▼ Decrease

Highest performers

Lowest performers

Sub-indicators and standardized level values

For more information, please see Annex 2

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-groups[48] and sub-indicators are compared to the corresponding EU averages[49] 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[50].
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[51].
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).

48 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.

49 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.

50 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.

51 Ibid.