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**Education and Training Monitor 2013**

**(Volume 2: Country analysis - Part 1 of 7: Austria, Belgium, Bulgaria and Croatia)**

## Table of contents

Austria .....	2
Belgium .....	9
Bulgaria .....	16
Croatia.....	21

### Annexes

Annex 1. Summary statistics on the headline target .....	27
Annex 2. Explaining the sub-indicators for the headline target .....	29

## 1. Key indicators and benchmarks

	Austria		EU average		Europe 2020 target / Benchmark
	2009	2012	2009	2012	
<b>Europe 2020 headline targets</b>					
<b>1. Early leavers from education and training</b> (age 18-24)	8.7%	7.6%	14.2% <sup>EU28</sup>	12.7% <sup>EU28</sup>	<b>EU target: 10%</b> National target: 9.5%
<b>2. Tertiary educational attainment</b> (age 30-34)	23.5%	26.3%	32.1% <sup>EU28</sup>	35.7% <sup>EU28</sup>	<b>EU target: 40%</b> National target: 38% <sup>4</sup>

## ET 2020 Benchmarks

3. Early childhood education and care (4 years old - year before start of compulsory primary)			91.3%	94.3% <sup>11</sup>	91.7%	93.2% <sup>11</sup>	95%
4. Basic skills Low achievers (15 year-olds; Level 1 or lower in PISA study)	Reading		27.5%	:	19.6%	:	15%
	Mathematics		23.2%	:	22.2%	:	15%
	Science		21.0%	:	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	0.1%	0.8% <sup>11</sup>	0.6%	0.7% <sup>11</sup>	
		b. Erasmus inbound students as % of student population in host country		1.5% <sup>11</sup>		1.1% <sup>11</sup>	
	Higher Education	c. Inbound degree mobile students as % of student population in the host country		14.7% <sup>11</sup>		7.0% <sup>11</sup>	
6. Employment rate of graduates (age 20-34) having left education 1-3 years before reference year			88.6%	91.2%	78.3%	75.7%	82%
7. Adult participation in lifelong learning (age 25-64)			13.8%	14.1%	9.3%	9.0%	15%

## Proposed ET 2020 benchmark

<b>8. Foreign languages skills</b>	a. ISCED 2 students at proficiency level B1 or higher in first foreign language <sup>1</sup>	:	:	:	43.5% <sup>11</sup>
	b. ISCED 2 students learning two or more foreign languages	8.2%	9.4% <sup>11</sup>	58.6%	60.8% <sup>10</sup>

## Other ET 2020 Indicators

<b>9. Investment in education and training</b>	a. General government expenditure on education (% of GDP)	5.7%	5.6% <sup>11</sup>	5.5%	5.3% <sup>11</sup>
	b. Annual expenditure on public and private educational institutions per pupil/student in € PPS				
	ISCED 1-2	€ 8,156 <sup>08</sup>	€ 8,774 <sup>10</sup>	€ 5,732 <sup>08</sup>	€ 6,021 <sup>10</sup>
	ISCED 3-4	€ 9,311 <sup>08</sup>	€ 9,136 <sup>10</sup>	€ 6,964 <sup>08</sup>	€ 7,123 <sup>10</sup>
<b>10. Digital competences</b>	a. Pupils in grade 4 (ISCED 1) using computers at school	37.4% <sup>07</sup>	42.8% <sup>11</sup>	60.7% <sup>07</sup>	64.7% <sup>11</sup>
	b. Individuals aged 16-74 with high computer skills <sup>2</sup>	29.0%	33.0%	25.0%	26.0%
<b>11. Entrepreneurial competences</b>	Individuals aged 18-64 who believe to have the required skills and knowledge to start a business	:	50.0%	42.3% <sup>a</sup>	42.0% <sup>a</sup>
<b>12. Vocational education and training</b>	Share of vocational students at ISCED 3	77.3%	76.1% <sup>11</sup>	49.6%	50.3% <sup>11</sup>
<b>13. Skills for future labour markets</b> Projected change in employment 2010-2020 in %	High qualification	:	32.0%	:	19.1% <sup>EU28</sup>
	Medium qualification	:	-0.7%	:	4.6% <sup>EU28</sup>
	Low qualification	:	-9.3%	:	-20.2% <sup>EU28</sup>
<b>14. Low-skilled adults</b>	Literacy	:	15.3%	:	19.9% <sup>EU17</sup>
	Numeracy	:	14.3%	:	23.6% <sup>EU17</sup>
	Problem solving in technology rich environments <sup>3</sup>	:	23.6%	:	26.9% <sup>EU13</sup>

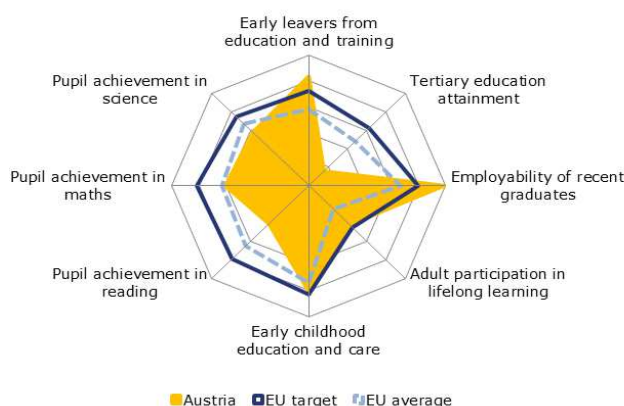
Source: Cedefop: 13 / EAC: 10a,b / European Survey on Language Competences (ESLC): 8a / Eurostat (Government finance statistics): 9a / Eurostat (LFS): 1, 2, 6, 7 / Eurostat (ISS): 10b / Eurostat (UOE): 3, 8b, 9b, 10c, 12 / IEA TIMSS: 10a / Global Entrepreneurship Monitor: 11 / OECD (PIAAC): 14 / OECD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

Notes: <sup>07</sup> = 2007, <sup>08</sup> = 2008, <sup>09</sup> = 2009, <sup>10</sup> = 2010, <sup>11</sup> = 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

<sup>1</sup> = average of skills tested in reading, listening, writing, <sup>2</sup> = having carried out 5-6 specific computer related activities, <sup>3</sup> = Results cover people with scores below level 1 as well as people who have no computer experience or failed the ICT test <sup>4</sup> = Tertiary educational attainment: the national target is defined differently and includes postsecondary attainment qualifications at ISCED level 4/4a (following this national definition, the 2012 value is 38.3%)

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 Austrian education system needs to improve performance in order to mitigate demographic trends and the trend towards a more skills-intensive economy. Education outcomes as measured by PIRLS, TIMSS and PISA tests are below average both among 10 and 15 year olds, even though Austria's investment in education and training for primary and secondary schools is slightly above EU average. More than one out of four young people aged 15 have poor reading skills, and results are only slightly better in mathematics. These young people face difficulties to access initial vocational education and training, which is crucial for later access to the labour market<sup>1</sup>.

The socio-economic background continues to have one of the most important impacts on educational achievement with a distinct achievement gap also for young people from a migration background. A main challenge remains addressing this issue and in particular raising the participation and attainment level of migrants that constitute a growing part of the young population in education, in particular in urban areas<sup>2</sup>.

In higher education, increasing numbers of enrolled students put pressure on financial and organisational aspects, while the share of students completing their programmes successfully has started to increase only recently<sup>3</sup>. As a consequence, relatively high dropout rates from universities combined with a comparatively low share of people having completed tertiary or equivalent education remain distinct challenges in Austria.

Therefore the Commission proposed for 2013 the following country specific recommendations (CSR 5): "Improve educational outcomes, in particular of disadvantaged young people, including by enhancing early childhood education and reducing the negative effects of early tracking. Further improve strategic planning in higher education and enhance measures to reduce drop-outs."

## 3. Investing in skills and qualifications

### Investing in education in times of crisis

Austria has kept its investment in 2011 in education relatively stable with 5.6% of GDP compared to 5.7% both in 2010 and 2009. This remains slightly above the EU average of 5.3%. As part of the 2012 consolidation package, Austria envisages additional public funds for tertiary education of about 1 bn €.

Austria has one of the highest levels of expenditure-per-student among all OECD countries. It spends considerably more per student per year than the OECD average in primary and secondary education.<sup>4</sup> The share of private expenditure is one of the smallest among OECD countries.<sup>5</sup>

<sup>1</sup> A recent regional study for Upper Austria finds that 92 per cent of employers complain about the lack of skills of apprentices at the moment when they are hired (ibw-Forschungsbericht Nr. 168 - Fachkräftebedarf der Wirtschaft in Oberösterreich, page 115).

<sup>2</sup> Children with a migration background are three times more likely to leave the school system without an upper secondary qualification than the children of natives.

<sup>3</sup> The rate of first-time graduates of tertiary-type A programmes has increased by 5%-points to 35% between 2010 and 2011 (table A3.1a, Education at a Glance 2013).

<sup>4</sup> OECD Education at a Glance, Country Note Austria.

<sup>5</sup> OECD: Austria registers only 5% private expenditure of expenditure on primary through post-secondary non -tertiary education institutions compared to the 8% OECD average and 12% on tertiary education compared to a 32% OECD average.

## Skills

Education outcomes as measured by PIRLS, TIMSS and PISA tests are below average both among 10 and 15 year olds<sup>6</sup>. More than one out of four young people aged 15 have poor reading skills, and results are only slightly better in mathematics. These young people face difficulties to access initial vocational education and training, which is crucial for later access to the labour market.

Skills as measured by PISA for 15 year-olds have deteriorated between 2006 and 2009 for reading, mathematics and science and remained below the EU average<sup>7</sup> the distance even increased in particular in reading from 1.8 to 7.9 percentage points. Girls perform significantly better in reading and better in science but worse in mathematics than boys.<sup>8</sup> PIRLS 2011 confirms the below average performance as Austria ranks only 14<sup>th</sup> out of the 20 participating EU countries for reading of 4<sup>th</sup> grade, 10 year old, having girls performing better than boys<sup>9</sup> and also registering a decline compared to 2006.<sup>10</sup> TIMSS 2011 registers a slight reverse of the downward trend in mathematics for 4<sup>th</sup> grade.<sup>11</sup> The same trend could be observed for TIMSS 4<sup>th</sup> grade science where Austria is in addition better positioned 6<sup>th</sup> out of 21 participating EU countries and above average.<sup>12</sup>

Austria shows a strong influence of socio-economic background on educational achievement. In Austria, students from low socio-economic status are 2.27 times more likely to be low performers than their peers with high socio-economic status, according to PISA 2009, which is below the OECD average (2.37 times). Students with a migrant background are also at higher risk of low performance by 2.16 times, and so are boys in comparison to girls (1.74 times)<sup>13</sup>.

The average number of foreign languages learned per pupil at ISCED 2 level in 2011 was 1.1<sup>14</sup> and this is below the longstanding EU average of 1.5.

In Austria 33% of individuals (16-74 age group) showed high computer skills in 2012, up by 3 percentage points compared to 2009 and above the 2012 EU average of 26%.<sup>15</sup> In 2007 37.4% of fourth graders used computers in schools. This was below the EU 13 average (60.7%) at the time.

In 2012 50 per cent of the 18-64 age group believed in Austria having the right skills to start a business. This places Austria among the best performing European countries with regard to entrepreneurial skills.<sup>16</sup>

The development of the National qualifications framework (NQF) started in 2007 and is a long-term and comprehensive reform that is touching at all levels of education and needs close involvement of all stakeholders. At this stage it covers higher education, VET and pre-VET programme qualifications, but it does not yet integrate qualifications from general education, which is currently discussed. The NQF is being developed in consultation with all relevant stakeholders.<sup>17</sup>

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

Austria performs well with regard to early school leaving (ESL): the ESL rates are decreasing (8.3% in 2011 and 7.6% in 2012) and they are already below the national 2020 target of 9.5%. Even so the gap between foreign-born and native-born could be narrowed (22.5%/6.2% (2009) to 17.7%/6% (2012)) the rate of early school leavers remains significantly higher under foreign-born.

Participation in early childhood education and care (ECEC) has been improving from 84.6% (2000) to 94.3% (2011). A strategy against ESL following the Council Recommendation has been adopted, even if full implementation remains lacking so far.

A sustainable strategy underpinned by sufficient financial resources is necessary for early language learning since 23% of pupils entering schools have difficulties in the language of instruction. The additional EUR 5 million a year (to be topped up by the Länder), which will be allocated to early German language training in kindergartens from 2012 until 2014 are an important first step, but do not appear fully adequate to meet the challenge.

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<sup>6</sup> Reading 2006 AT: 21.5% (EU 23.1%), 2009 AT: 27.5% (EU 19.6%)  
 Mathematics 2006 AT: 20% (EU 24%, 2009 AT 23.2% (EU 22.2%)  
 Science 2006 AT: 16.3% (EU 20.3%), 2009 AT 21% (EU 17.7%)

<sup>7</sup> PISA 2006: mathematics (20%), reading (27.5%), science (16.3%) /2009: mathematics(23.2%), reading (27.5%), science to be provided by A4.

<sup>8</sup> PISA 2009: Reading 20.3% girls/35.2% boys, science 20.3% girls/21.6% boys, mathematics 25.1% girls/21.3% boys.

<sup>9</sup> PIRLS 2011 girls 533, boys 525.

<sup>10</sup> PIRLS 2011 reading 529 (2006:538).

<sup>11</sup> TIMSS 1995: 531; 2007: 505; 2011: 508 and shows that boys (513) do better in mathematics than girls (504).

<sup>12</sup> TIMSS 1995: 538; 2007: 526; 2011: 532 and shows that boys (513) do better in mathematics than girls (504).

<sup>13</sup> OECD: Equity and Equality in Education: Supporting disadvantaged Students and Schools, 2012, Paris).

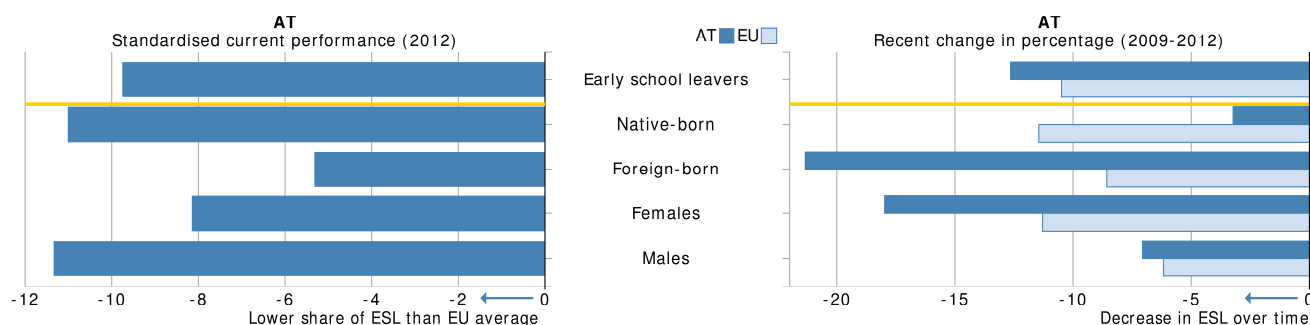
<sup>14</sup> Source: Eurostat

<sup>15</sup> Source: Eurostat ICT household survey

<sup>16</sup> Global Entrepreneurship Monitor registered for 2012, Poland 54%, Slovenia 51%, Austria, Spain and the Slovak Republic all 50%.

<sup>17</sup> Analysis and overview of NQF developments in European countries. Annual report 2012.

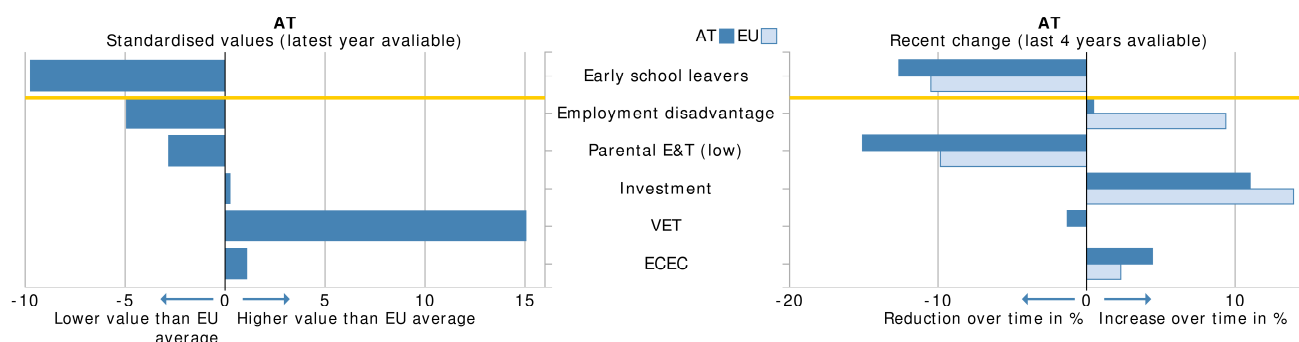
Figure 2. Early leavers from education and training: sub-groups



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

The employment rate of graduates<sup>18</sup> has consistently increased to 91.2% in 2012 and remains significantly above the EU average of 75.7% (2012). Participation in initial vocational education and training is significantly higher in Austria 76.8% (2010) than the EU average of 49.8% (2010)<sup>19</sup>. An attractive VET system has assisted in keeping the rate of early school leavers low, also among foreign born, compared to the EU average. It might also explain the fact that the unemployment rate among early school leavers remains low with 24.8% compared to the EU average of 40.1%.

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



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

Austria is currently implementing the replacement of General Secondary Schools (Hauptschule) by New Secondary Schools (Neue Mittelschule). The New Secondary School reform does not abolish the issue of early streaming, i.e. the early tracking of children into either Hauptschule or Gymnasium (secondary academic school, lower level) at the age of ten. By 2018/19 all classes of the General Secondary Schools are supposed to be transformed into the new system. New pedagogical concepts as an integral part of the reform entail a more individualised approach to learning, a more differentiated teaching, including team teaching, and a more favourable teacher-pupil ratio, which go hand in hand with supplementary financial support<sup>20</sup>.

High quality teaching is one key element for maintaining and improving the quality of education. Basic agreements at government level have been reached for the important reform of teacher education. However, specific legal and administrative measures have still to be passed and it is planned to implement the reform in steps starting 2014/15. Quality should be further improved by introducing competence oriented teaching, a central administered "Matura", upper secondary leaving exam as of 2014/15 that is meant to increase transparency and to facilitate access to higher education. A quality process was initiated in schools in 2013/14. The initiative 'Quality of general Education at Schools'<sup>21</sup>, introduced education standards and a continuous process of quality assurance in schools.

The comprehensive reform of teacher education (*new teacher education - PädagogInnenbildung NEU*) launched in 2009/2010 has been adopted in Parliament in June 2013 (BGBl. 124/2013). It established concrete requirements and recommendations for the education, training and continuing professional development of

<sup>18</sup> From upper secondary and tertiary education (20-34 years).

<sup>19</sup> CEDEFOP, "On the way to 2020: data for vocational education and training policies" (2013) EU-27 average.

<sup>20</sup> Compare the remark to the Austrian ESL strategy.

<sup>21</sup> Schulqualität Allgemeinbildung, or SQA.

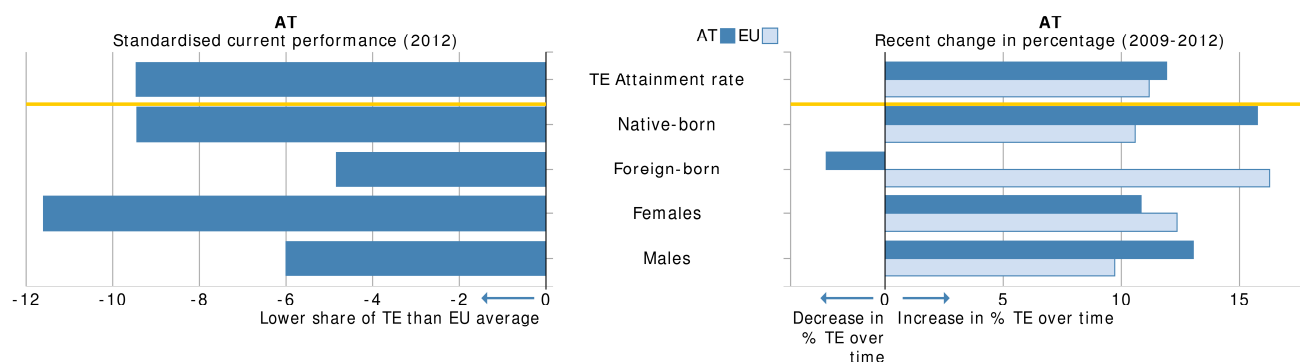
persons in the teaching professions with the intention to offer the first new teacher education courses in the 2014/2015 academic year. It was approved by the government in December 2012 but is still awaiting the adoption of specific legal and administrative measures in Parliament. One of the suggested measures is the harmonization of teacher education for primary and secondary academic school teachers at university level<sup>22</sup>. However, educators of preschool education and care are not subject to the current legal efforts to harmonise the education requirements of teachers.

Finally, in order to increase efficiency Austria will implement a six point plan for simplifying and improving the governance of the education system, including the abolition of school authorities at district level.

## 5. Encouraging participation in tertiary education and modernising higher education

Austria's tertiary attainment (ISCED levels 5 and 6) is 26.3% in 2012, which is low in comparison to the EU average of 35.7%. However due to the specific role of VET in Austrian education, a large part of its higher-skilled labour force graduated from VET colleges that grant ISCED 4a level qualifications. Austria decided to include these categories into its Europe 2020 national target of 38% for 2020, which lifts its current performance according to this specific national definition to 38.3% in 2012.

Figure 4. Tertiary education attainment: sub-groups



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

In response to the challenges in the area of higher education, notably the steadily growing number of students, high drop-out rates<sup>23</sup>, and long study periods as well as partially over crowded subjects, additional budgetary resources have been made available since 2012 to start implementing the Austrian Higher Education plan step by step until 2021. The Austrian Higher Education plan has been designed to deal with these issues including the fact that certain disciplines have known unusually high incoming mobility from abroad<sup>24</sup> and the difficulties in combining work and studies. The additional funds are intended inter alia to create additional study places, to promote mathematics, science and technology (MST) subjects and to mitigate quality problems in oversubscribed disciplines.

Austria is implementing a reform on university funding in order to increase tertiary attainment and to reduce university drop outs leading to targeted investments in university education combining structural and capacity-based funding.<sup>25</sup> It is envisaged to linking university funding to the capacity and the number of students attending university. Funding is scheduled to start gradually from 2016 onwards targeting 2019/2020 for full implementation. After a constitutional court ruling in 2011 challenged the rules for tuition fees there were reintroduced targeting foreign students and those that overrun standard study time by two semesters.

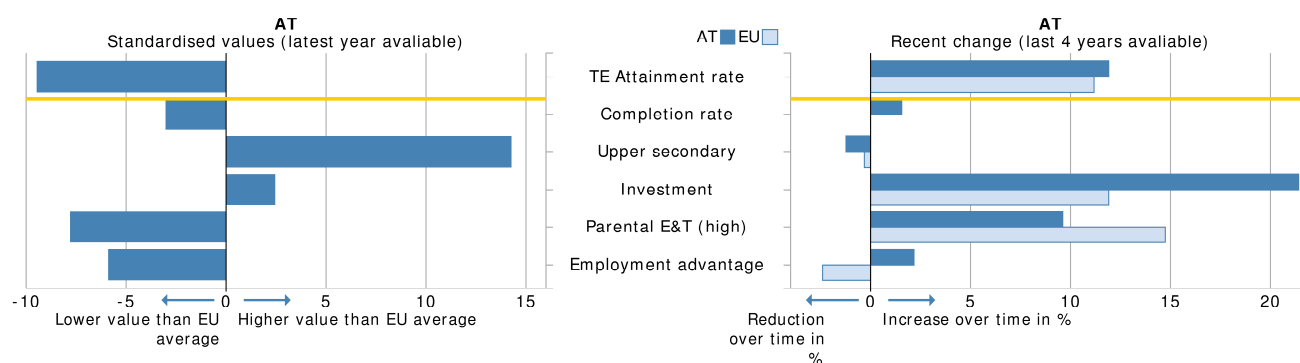
<sup>22</sup> The curricula of the teachers education are adapted to the new structure recommended by the Bologna Process consisting of four years of bachelor studies and two years of master studies.

<sup>23</sup> In Austria, 65% of students in general tertiary education and 73% in vocationally oriented tertiary study, complete their studies. The former is below the EU 21 average (69%) and the latter is above (59%). The relatively low completion rate may indicate inefficiency of the education system, the ability of students to find employment during their studies, or the need of student to change the degree programme. Source: OECD Education at a glance 2013.

<sup>24</sup> In particular students from Germany that don't find access to certain study disciplines due to the numerus clausus opted to inscribe themselves in Austrian faculties, like medicine.

<sup>25</sup> Compare, Austria's 2012-2016 stability package (Second Stability Act 2012, Federal Law Gazette I 32/2012) and as key control instrument include the University Structural Funds Ordinance (Hochschulraum-Strukturmittelverordnung).

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

The employment rate of graduates (age 20-34 from upper secondary and tertiary level) is high (91.2% in 2012 compared to the EU average of 75.7%). It actually increased by 2.6 percentage points since 2009.<sup>26</sup> In particular the Austrian dual VET system facilitates integration into the labour market due to its intensive company based component.

However the Cedefop skills forecast points to future challenges, as the number of jobs that require tertiary attainment is forecast to increase by 32% until 2020 and the number of jobs that require medium and low qualifications to decrease by -0.7% and -9.3%, respectively.<sup>27</sup> Efforts are under way to increase tertiary attainment, to reinforce counselling<sup>28</sup> both at pre-university and at university level to enable students to make informed choices and to facilitate the transition school to work. Starting in January 2013, a youth coaching programme is being implemented in stages throughout all of Austria's federal provinces providing advising and support for youths from the 9th year of school onward. It is designed to help them find an educational or vocational path which suits their personal needs.

Each young person who wants to take up an apprenticeship is entitled to a training slot as promised by the Training Guarantee, which was introduced in 2008 under the Youth Employment Package (Jugendbeschäftigungspaket) - youth guarantee.<sup>29</sup>

In addition to improving higher education, improvements in initial educational outcomes and a continued focus on vocational training are essential with a view of ensuring the provision of skilled labour. There is still scope to facilitate transfer in the education system between different types of education since the Austrian education system starts to segregate at the age of 10. Even so the education system segregates early it remains conceptually fully open.

The Austrian VET system is performing well but there is still room for improvement with regards to school drop outs, in particular for those coming from a disadvantaged social or migrant background. The VET Quality Initiative<sup>30</sup> aims to implement systematic quality management in vocational schools. This quality management system not only comprises the level of individual schools, but also includes all control levels (including management of the education system and school supervision).

<sup>26</sup> Source: CRELL calculations based on Eurostats LFS data.

<sup>27</sup> Cedefop, 2012 forecast

<sup>28</sup> E.g. Studienchecker.

<sup>29</sup> If upon completion of compulsory education young apprenticeship-seekers cannot be placed in a formal apprenticeship programme, they will be offered ('guaranteed') the opportunity to enter a full-fledged apprenticeship programme in a supra-company training entity. The public employment service's support to would-be apprentices does not end with their entry into supra-company training but will continue throughout training with the aim of eventually placing them in a company-based apprenticeship for the remainder of their training period, as this promises better integration into the labour market. If this fails, apprentices may also receive all of their training under the supra-company scheme and take the officially recognised final apprenticeship examination there.

<sup>30</sup> QualitätsInitiative Berufsbildung, or QIBB.



## 7. Upgrading skills through lifelong learning

Adults (aged 16-65) in Austria score far above the EU average in the numeracy proficiency tests of the Survey of Adult Skills (PIAAC<sup>31</sup>). The same holds true for young people (aged 16-24). Austrian adults perform slightly above the EU average in the literacy tests.

The gap in literacy proficiency between the foreign- and native-born is close to the EU average. The share of people with low literacy or numeracy skills (at most level 1) is significantly below the EU average. However, low-skilled people are 6 times less likely to participate in job-related learning compared to high-skilled people<sup>32</sup>.

Adult participation in lifelong learning (LLL) in 2012 was at 14.1% and hence clearly above the EU average of 9%. It has overall increased by 1 percentage point since 2006, but not with a straight pattern.<sup>33</sup>

In Austria, a very high share of employees has in principle access to continuing vocational training, since 87% of enterprises in Austria report to provide training. This is far above the EU average of 66% and the time of training spent per participant amounts to 30 hours, which again is more than the EU average (25%). However, only 31% of the workforce benefit from training, that is below the EU average of 48%.<sup>34</sup>

A particular challenge is to increase the participation of the foreign-born since they are participating significantly less compared to natives and the EU average, and because Austria has one of the largest shares of working-age immigrants in the OECD.

Only 11.7% foreign-born participated in 2012 in LLL compared to 14.7% native-born. This means a distance of 3 percentage points whereas on EU average more foreign-born than native-born participate in lifelong learning.<sup>35</sup> The distance for female participation is less distinct in 2012 compared to the EU level.<sup>36</sup>

A comprehensive Lifelong Learning Strategy 2020 covering all levels of education and training was presented in July 2012. So far, a dedicated budget and a comprehensive evaluation mechanism are missing.

<sup>31</sup> 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).

<sup>32</sup> At EU level, low skilled adults are 5 times less likely to participate in job-related learning than high skilled adults.

<sup>33</sup> Eurostat (LFS): 2006 (13.1%), 2007 (12.8%), 2008 (13.2%), 2009 (13.8%), 2010 (13.7%), 2011 (13.4%)

<sup>34</sup> Source: Eurostat news release 89/2013

<sup>35</sup> Eurostat 2012: AT native-born 14.7%, foreign-born 11.7%, EU native-born 8.9%, foreign born 10.7%

<sup>36</sup> Eurostat 2012: AT female 15.2%, male 13%, EU female 9.7%, male 8.3%

## 1. Key indicators and benchmarks

	Belgium		EU average		Europe 2020 target / Benchmark
	2009	2012	2009	2012	
<b>Europe 2020 headline targets</b>					
<b>1. Early leavers from education and training</b> (age 18-24)	11.1%	12.0%	14.2% <sup>EU28</sup>	12.7% <sup>EU28</sup>	<b>EU target: 10%</b> National target: 9.5%
<b>2. Tertiary educational attainment</b> (age 30-34)	42.0%	43.9%	32.1% <sup>EU28</sup>	35.7% <sup>EU28</sup>	<b>EU target: 40%</b> National target: 47%

## ET 2020 Benchmarks

3. Early childhood education and care (4 years old - year before start of compulsory primary)		99.3%	98.1% <sup>11</sup>	91.7%	93.2% <sup>11</sup>	95%	
4. Basic skills Low achievers (15 year-olds; Level 1 or lower in PISA study)	Reading	17.7%	:	19.6%	:	15%	
	Mathematics	19.1%	:	22.2%	:	15%	
	Science	18.0%	:	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	0.3%	0.3% <sup>11</sup>	0.6%	0.7% <sup>11</sup>	
				1.7% <sup>11</sup>		1.1% <sup>11</sup>	
	Higher Education	c. Inbound degree mobile students as % of student population in the host country		8.2% <sup>11</sup>		7.0% <sup>11</sup>	
6. Employment rate of graduates (age 20-34) having left education 1-3 years before reference year		81.0%	80.9%	78.3%	75.7%	82%	
7. Adult participation in lifelong learning (age 25-64)		6.8%	6.6%	9.3%	9.0%	15%	

## Proposed ET 2020 benchmark

<b>8. Foreign languages skills</b>	a. ISCED 2 students at proficiency level B1 or higher in first foreign language <sup>1</sup>	:	30.2% <sup>11</sup>	:	43.5% <sup>11</sup>
	b. ISCED 2 students learning two or more foreign languages	26.3%	26.4% <sup>11</sup>	58.6%	60.8% <sup>10</sup>

## Other ET 2020 Indicators

<b>9. Investment in education and training</b>	a. General government expenditure on education (% of GDP)		6.2%	6.2% <sup>11</sup>	5.5%	5.3% <sup>11</sup>
	b. Annual expenditure on public and private educational institutions per pupil/student in € PPS	ISCED 1-2	€ 6,669 <sup>08</sup>	€ 6,818 <sup>10</sup>	€ 5,732 <sup>08</sup>	€ 6,021 <sup>10</sup>
		ISCED 3-4	€ 8,219 <sup>08</sup>	€ 8,476 <sup>10</sup>	€ 6,964 <sup>08</sup>	€ 7,123 <sup>10</sup>
		ISCED 5-6	€ 11,745 <sup>08</sup>	€ 11,691 <sup>10</sup>	€ 9,309 <sup>08</sup>	€ 9,168 <sup>10</sup>
<b>10. Digital competences</b>	a. Pupils in grade 4 (ISCED 1) using computers at school		:	68.8% <sup>11, FL</sup>	60.7% <sup>07</sup>	64.7% <sup>11</sup>
	b. Individuals aged 16-74 with high computer skills <sup>2</sup>		18.0%	23.0%	25.0%	26.0%
<b>11. Entrepreneurial competences</b>	Individuals aged 18-64 who believe to have the required skills and knowledge to start a business		37.0%	37.0%	42.3% <sup>a</sup>	42.0% <sup>a</sup>
<b>12. Vocational education and training</b>	Share of vocational students at ISCED 3		72.8%	72.8% <sup>11</sup>	49.6%	50.3% <sup>11</sup>
<b>13. Skills for future labour markets</b> Projected change in employment 2010-2020 in %	High qualification		:	15.9%	:	19.1% <sup>EU28</sup>
	Medium qualification		:	13.9%	:	4.6% <sup>EU28</sup>
	Low qualification		:	-18.7%	:	-20.2% <sup>EU28</sup>
<b>14. Low-skilled adults</b>	Literacy		:	14.0% <sup>FL</sup>	:	19.9% <sup>EU17</sup>
	Numeracy		:	13.4% <sup>FL</sup>	:	23.6% <sup>EU17</sup>
	Problem solving in technology rich environments <sup>3</sup>		:	25.8% <sup>FL</sup>	:	26.9% <sup>EU13</sup>

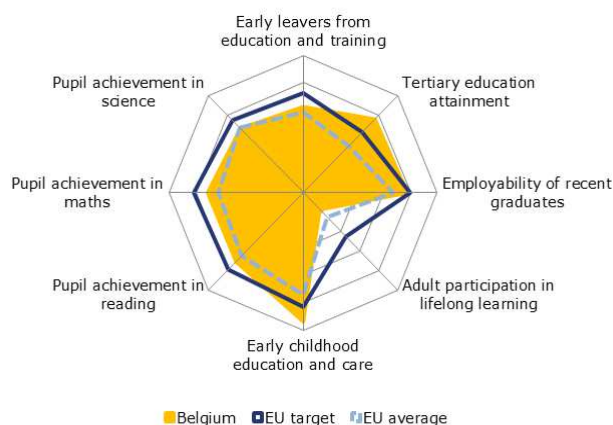
Source: Cedefop: 13 / EAC: 10a,b / European Survey on Language Competences (ESLC): 8a / Eurostat (Government finance statistics): 9a / Eurostat (LFS): 1, 2, 6, 7 / Eurostat (ISS): 10b / Eurostat (UOE): 3, 8b, 9b, 10c, 12 / IEA TIMSS: 10a / Global Entrepreneurship Monitor: 11 / OECD (PIAAC): 14 / OECD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

Notes: <sup>07</sup> = 2007, <sup>08</sup> = 2008, <sup>09</sup> = 2009, <sup>10</sup> = 2010, <sup>11</sup> = 2011, e = estimate, a = unweighted average b = break, p = provisional, FL = Flemish Community

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

<sup>1</sup> = average of skills tested in reading, listening, writing, <sup>2</sup> = having carried out 5-6 specific computer related activities, <sup>3</sup> = 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

Belgium's education system is faced with poor educational achievements of pupils enrolled in VET, a significant educational gap depending on the socio-economic background in particular for migrants pupils, persisting differences in early school leavers rate<sup>37</sup> and basic skills performance between the communities and regions. Belgium is confronted with a skills mismatch in terms of levels and relevance to labour needs, which represents an obstacle in tackling unemployment and in supporting growth. Skills shortages for technical and future-oriented occupations are observed at all levels of education. School leavers in Belgium, in particular the ones without upper secondary education, are faced with more difficult transition to work than in most other OECD countries<sup>38</sup> reflecting both inappropriate skills and limited opportunities.

Whilst there is a need to increase the occupational and interregional mobility as well as the participation rate to the labour market, adult participation in lifelong learning is far below the EU average (6.6% vs. 9% in 2012) notably for the older workers and low-skilled<sup>39</sup> and declined significantly in the last years (8.5% in 2005).

These challenges are reflected in one of the 2013 European Semester country specific recommendations: measures should be taken to reinforce the coherence between labour matching, education, lifelong learning and vocational training policies for older people and youth. Attention should be given to social-inclusion strategies for people with a migrant background.

## 3. Investing in skills and qualifications

### Investing in education and training in a context of economic crisis

With no significant impact of the crisis, public spending on education as a share of GDP in Belgium remains one of the highest in the EU with 0.9 percentage point above the EU average (6.2% vs. 5.3% in 2011). The share of private expenditure on all levels of education in Belgium is one of the lowest among OECD countries (5% vs. 16% on average)<sup>40</sup>. The proportion of annual education expenditure dedicated to human resource costs, close to 85%, ranks amongst the highest in EU<sup>41</sup>, far above the 70% EU average. However, during 2011-2012 a considerable increase in capital expenditure<sup>42</sup> is observed for the German-speaking and the Flemish Communities. In 2013, the French-speaking community approved a significant budget to respond to the important needs in capital forecast in the coming years.

Communities are taking measures of different scope to increase the efficiency of spending whilst ensuring quality education for all. A 2009 reform of the funding of Flemish universities introduced performance criteria; there are concerns regarding the right balance between quantitative and qualitative criteria<sup>43</sup>. A 2012 study analysed potential savings in the Flemish education sector<sup>44</sup>. Pressure on smart funding is especially high<sup>45</sup> in the French-speaking Community. Measures have been taken to lower the repetition years. However, the 'differentiated

<sup>37</sup> 2012 early school leavers rate : 12.2% in Belgium, 15.3% and 19.9% in the Walloon and Brussels regions respectively ; source : Eurostat

<sup>38</sup> OECD eco review- 15 Jan 2013, Enhancing the inclusiveness of the labour market in Belgium By Jens Høj eco/wkp(2013)1 no 1009

<sup>39</sup> Eurostat 2011 Belgium learning participation rate of adults 7.1%, of older workers 3.9% and of low-skilled 3.1%

<sup>40</sup> Education at a Glance, 2013, country note on Belgium

<sup>41</sup> Funding of Education in Europe. The Impact of the Economic Crisis. Eurydice Report March 2013

<sup>42</sup> Funding of Education in Europe. The Impact of the Economic Crisis. Eurydice Report March 2013

<sup>43</sup> See: <http://www.pascalsmet.be/articles/onderwijs/oproep-academici-een-belangrijk-sigitaal>

<sup>44</sup> Carl van Keirsbllick(2012) Besparingen in het onderwijs : 3 pijlers, Itinera Institute

<sup>45</sup> Public spending on education in the French-speaking Community as a share of GDP is slightly above the national and EU average rates and demographic pressure is high in particular in the Brussels region

measures' is questioned<sup>46</sup>: it does not address systemic reform but simply provides additional resources to certain schools and the measures seems not sufficiently focused. A 2011 report<sup>47</sup> makes different recommendations for more efficient spending in tertiary education. However, the 2013 bill on the modernisation of the higher education landscape of the French community does not revise the current funding system. Closer synergies between education and training providers are expected to lead to more efficient spending<sup>48</sup>.

There are concerns in all communities regarding the financing of the planned reforms which will request appropriate prioritisation, close monitoring and efficient spending.

### Skills

In terms of basic skills, 15-year-olds' performance on 2009 PISA test is better than the EU average in reading and mathematics and very close to it for science, with the Flemish, German and French speaking communities PISA results significantly above, close and below the EU average respectively. At national and community levels, the gap between the top and lower achievers is one of the highest of the OECD. Underperformance reflects socio-economic differences and youngsters with migrant background are much more exposed, in particular in Flanders<sup>49</sup>. In general, those youngsters are twice more at risk to be early school leavers. 10 year-olds Flemish pupils ranked amongst the top performers for mathematics and the lowest ones for science in the 2011 TIMSS survey. French speaking community average results of 10 years-olds in Literacy at the 2011 PIRLS remain below the average with modest improvement since 2006.

Belgium is developing and implementing more than one national qualifications framework (NQF). As stated in 2012 by the relevant Belgian Federal Law, the European qualifications framework (EQF) levels will be used as a common reference for the three communities. However, they will reference separately to the EQF<sup>50</sup>. The Flemish qualification framework is now reaching early operational stage. In view of clarifying the placing of professional qualifications, an updated referencing report is planned in 2013. In the French and German speaking communities, NQF preparation is now well advanced. The adoption of the French community's NQF and its referencing to the EQF are expected by the end of 2013.

The use of ICT is key to support flexible and modular learning in all educational pathways in the Flemish community. The 2012 Media Literacy Policy Plan broadens the policy on ICT towards the field of digital media. It includes a 40-point action plan encompassing measures related to teacher education and to the development and use of open educational resources as illustrated by the launch of the educational portal (klascement<sup>51</sup>) for teachers. The Flemish education committee advice on the integration of ICT in compulsory education encourages each school to develop an ICT strategy<sup>52</sup>. Other community and/or regional strategies focus on equipment and training provision for teachers. Teacher's competences need to be further developed in order to introduce innovative pedagogical approaches. Use of a virtual community and open educational resources are part of the key pilot project 'Lift up' (see point 4). The Walloon region cooperates with the communities for some initiatives (Digital school of tomorrow, 2011) or develops specific ones.

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

In 2012, Belgium was still slightly better than the EU average (12.0% vs. 12.7% in 2012) on early school leaving (ESL) despite no significant improvement and increasing gaps between regions<sup>53</sup>. In 2012, a declining rate was observed in Flanders which is launching a new comprehensive ESL strategy as a result of a 2012 agreement between the Flemish Government and the Social Partners on Professional Careers<sup>54</sup>. Against the EU general trend, ESL rates have been rising again in Wallonia and the Brussels region reaching worrisome levels (15.3% and 19.9% respectively). First steps have been taken in June 2013 towards a comprehensive ESL strategy: 1) an agreement between the many competent governments<sup>55</sup> to develop a register of trajectories of pupils and learners from secondary education to the labour market; 2) two draft project decrees approved by the French community government aiming at a better coordination of education and youth policies.

<sup>47</sup> Among others, Pisa results attest of very different levels of results for schools with similar socio-economic backgrounds  
Académie Royale de Belgique, Groupe de travail sur le financement de l'enseignement supérieur en Communauté Française, rapport intermédiaire du 15 juillet 2011

<sup>48</sup> 2012 National Reform Programme.

<sup>49</sup> In the 2009 PISA tests, the proportion of low performing students with an immigrant background was nearly three times the proportion of low performing native students. Source: OCDE

<sup>50</sup> Cedefop, Analysis and overview of NQF developments in European countries. Annual report 2012

<sup>51</sup> The KlasCement initiative was launched in 1998 by a teacher and a group of volunteers, its value has been progressively acknowledged at both community level (the initiative has been under the remit of the Flemish Minister for Education and Training since January 2013) and outside the country. KlasCement has been indeed replicated in the Netherlands into two versions, namely 'klascement.nl' (addressed to Dutch teachers) and 'klascement.eu' (for teachers all around the EU)

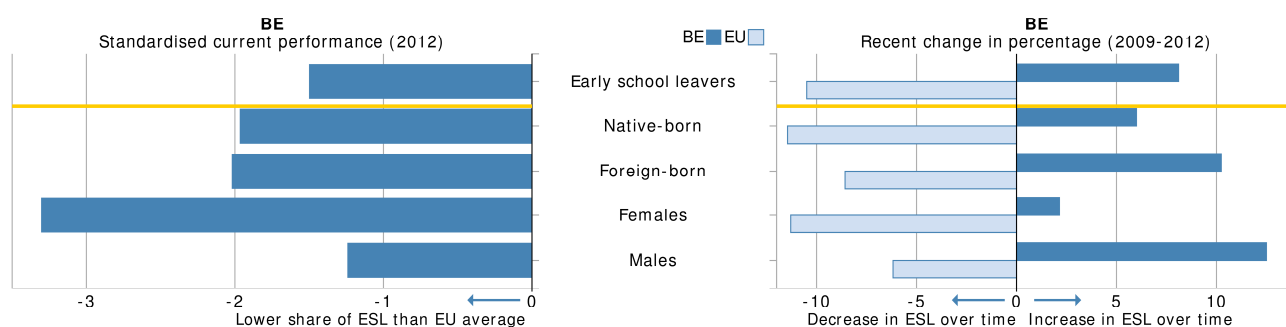
<sup>52</sup> VLOR, 'Advies over ICT-integratie in het leerplicht onderwijs', May 2013

<sup>53</sup> The Flemish Government has set an additional ESL target at 5.2 % by 2020

<sup>54</sup> Vesoc agreement on Career Policy (17 February 2012)

<sup>55</sup> The respective governments of Wallonia, the French and German communities, the Brussels region and the 'CoCOF'.

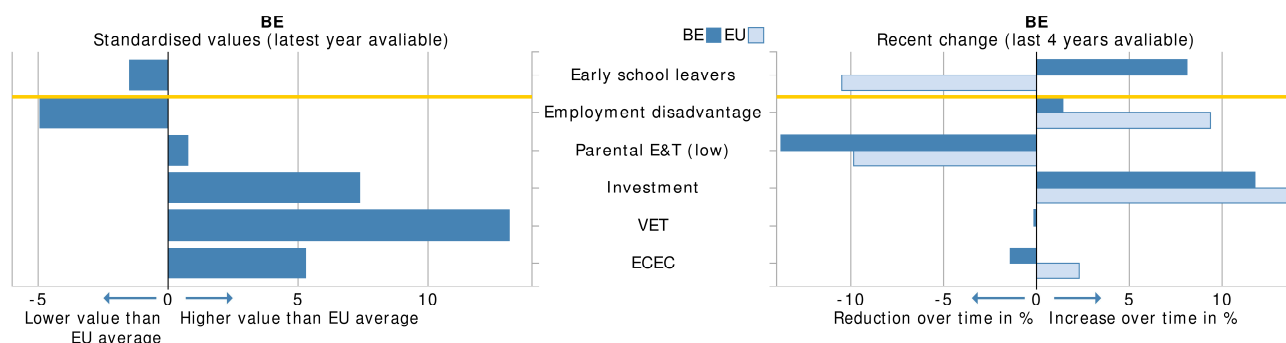
Figure 2. Early leavers from education and training: sub-groups



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

Participation in early childhood education of 4 year-olds remains amongst the highest in EU. However, participation fell between 2009 and 2011 from close to full coverage to 98.1%. Particularly low participation is observed in the Brussels region. The Flemish community has taken measures to encourage the participation of all children.

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



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

Unemployment rate amongst early school leavers is 36.3% (compared to 40.1% at EU level) reflecting the fact that youth unemployment rate increased far less than in other countries. However, they are faced with more difficult transition to work than in most other OECD countries<sup>56</sup>.

With different approaches and scope, all communities have taken or plan measures to improve school quality and promote equity. The Flemish strategy is based on a so-called "triangle of quality"<sup>57</sup> building on school autonomy, support and (self)-evaluation; the schools, the pedagogical advisory services of the different networks and the Flemish School Inspectorate are the 'corners'. Quality of education in the Brussels region is raising particular concern and an inspection of all schools is planned during the next academic year. The Literacy Plan 2012-2016 (Strategisch Plan Geletterdheid) encompasses measures for groups at risk in secondary education. Good mastering of Dutch is seen as a transversal objective. Starting from the 2010-11 scholastic year the French community has launched projects aimed at reducing the high number of repetition years, namely the 'Lift up! (Décolâge!) project'<sup>58</sup> for children aged 2,5 to 8 years, and to implement a learning outcome approach at secondary level. Projects have also been launched by civil society. Room for improvement has been identified as regards use of evidence to support policy, the definition of learning outcomes with clear levels of attainment, support for teachers to implement the competence based approach, earlier intervention for groups at risk and tools helping schools to evaluate their educational outcomes and barriers and share good practices. There is no evidence of results of a key measure taken aiming at improving quality and equity in access to schools ('décret

<sup>56</sup> OECD eco review- 15 Jan 2013, Enhancing the inclusiveness of the labour market in Belgium By Jens Høj eco/wkp(2013)1 no 1009

<sup>57</sup> OECD : Strong Performers and Successful Reformers in Education (2013, link <http://www.pearsonfoundation.org/oecd/belgium.html>,

<sup>58</sup> 250 schools participate to the 'Lift up ' project for the 2013-14 academic year

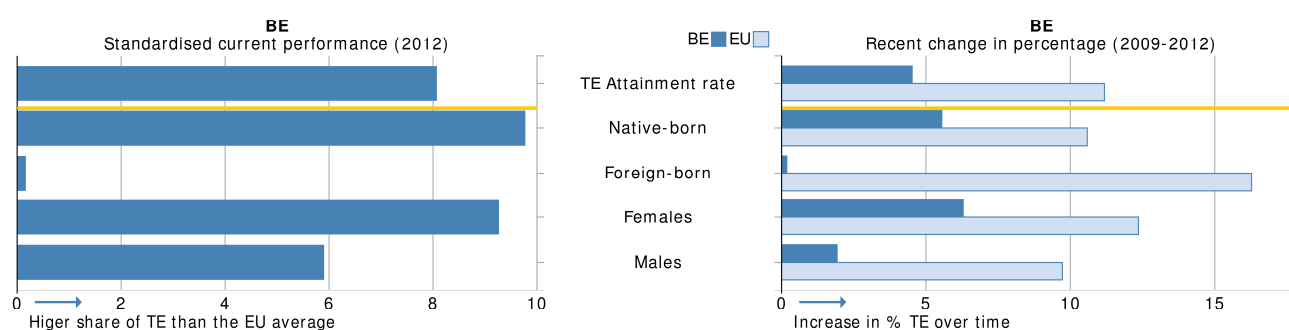
inscriptions'). In addition, all communities have taken measures to improve the quality and relevance of VET education which should contribute to lower the drop-out rate.

Belgium is among the three European countries which are the most affected by a shortage of qualified teachers<sup>59</sup>. The situation is more acute in the French community where a shortage is observed at all ISCED levels whilst the situation in the Flemish community is about the average observed in Europe though with a lack of teachers in mathematics<sup>60</sup>; communities are engaged in discussion encouraging inter-professional mobility. In the last few years, the Flemish community has taken different measures to modernise the teaching profession<sup>61</sup>. Current discussions aim at improving the working conditions of beginning teachers in order to retain them, and more recently, at revising the initial teacher education. At this stage, the option of a 5 years master does not seem appropriate. Early 2012, the French community approved an orientation note to reform initial teacher education. Consultation<sup>62</sup> is ongoing and implementation is planned by 2014-5. The extension of the length of study to five years for all teachers is of note. Whilst the French community is badly hit by a shortage of qualified teachers, the number of candidates wishing to join the profession exceeds the available number of places. A recent survey<sup>63</sup> highlights difficulties in retaining them due to a (too) large difference in position on the labour market and status between beginning teachers and established teachers. The early leaving rate during the first year of teaching accounts for more than 50% of the early leaving rate of the first 5 years of teaching<sup>64</sup>. Without denying the need of improved guidance and support to beginning teachers, the survey suggests that high policy attention should be given to this sensitive issue of status. The German speaking Community focuses on better teacher education and a professionalisation of school management.

## 5. Encouraging participation in tertiary education and modernising higher education

Belgium's tertiary attainment rate significantly exceeds the EU average (43.9% vs. 35.7% in 2012). The national target has been set at 47% in 2020. The parent's level of education has a larger than EU average influence on the participation in tertiary education. All communities have taken measures with mixed results as regards widening participation to under-represented groups and lowering the high drop-out rates. New measures are explored (e.g. introduction of evaluation test). Meeting the twin challenge of quality education and massification is a raising concern for universities. A recent survey<sup>65</sup> urges for more attention to quality criteria and less focus on quantitative ones. A profound reform of the Flemish higher education system, with integration of the academic courses in colleges into universities, will be implemented in one phase during the 2013-2014 academic year<sup>66</sup>. Further measures focus on quality assurance and accreditation. The 2013 draft decree on Higher Education modernisation of the French community aims to improve student achievement rates by more informed choice and better support of the students (e.g. informative evaluation test) and to rationalise the offer of training. The draft decree however does not provide indication on quality/performance criteria.

Figure 4. Tertiary education attainment: sub-groups

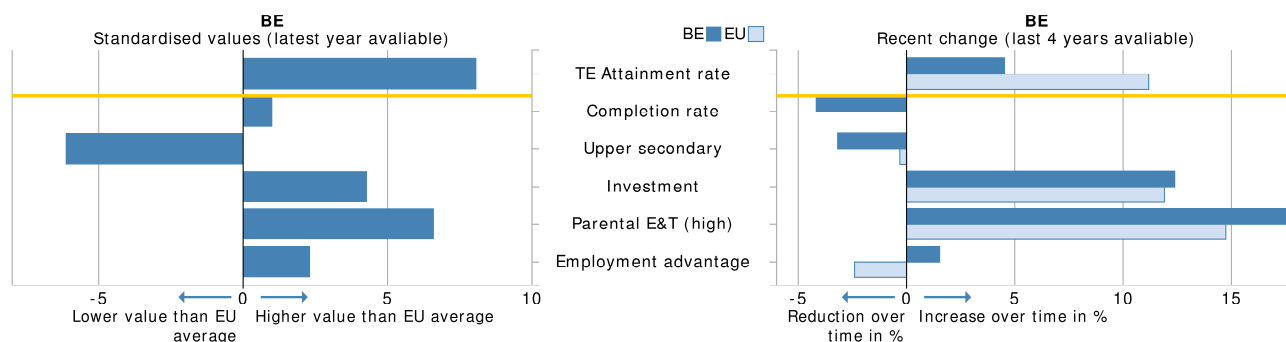


Source: JRC-CRELL. Note: TE = tertiary education. See Annex 2 for further information.

<sup>59</sup> Progress towards the common European objectives in education and training (2011), European Commission staff working document  
<sup>60</sup> Study on Policy Measures to Improve the Attractiveness of the Teaching Profession in Europe, April 2013, Contract n° EAC-2010-1391  
 Final Report Volume 2, European Commission  
<sup>61</sup> Reform of the initial education of teachers, introduction of performance criteria in the selection and career path, increased support for teachers, European Commission (2013), Study on Policy Measures to Improve the Attractiveness of the Teaching Profession, vol2  
<sup>62</sup> The consultation will focus on three areas: strengthening teacher education, redefining the learning content and the reorganization of the structure formation  
<sup>63</sup> B. Delvaux, P. Desmarez, V. Dupriez, S. Lothaire, M. Veinstein (2013), Les enseignants débutants en Belgique francophone. Les cahiers du Girsef  
<sup>64</sup> The average early leaving rate during the first 5 years is estimated at 35,6% on average for the all education and training system  
<sup>65</sup> Itinera Institute, 'the price of massification', 2013/15, 2 October 2013  
<sup>66</sup> Integration decree, 5 July 2012



Figure 5. Tertiary education attainment: sub-indicators



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

All communities are committed to promote outgoing/incoming study and placement mobility inside and outside Europe, including also teacher, staff and researcher mobility. The Flemish community has set a target of 20% graduate students being mobile by 2020.

## 6. Facilitating the transition from education to work

At 80.9% in 2013, the employment rate of recent graduates remains above the EU average (75.7%). Whilst youth unemployment rate increased far less than in most European countries, school leavers in Belgium, in particular the low-qualified, face a difficult transition to work<sup>67</sup> reflecting inappropriate skills. Moreover, since the start of the economic crisis, the share of low qualified youngsters not in employment, education and training has risen to 18%, above the 16% OECD average. The situation of the low-qualified will become worse in the future as the demand for medium and high qualified jobs up to 2020 is forecast to increase, in particular for the former. In Belgium, private returns for young people qualifying from VET post-secondary education, estimated in terms of earning differentials, do not differ significantly from the ones investing in tertiary education.

There are different plans to monitor the pupils' trajectories and the transition from education to the labour market. Initiatives have been taken at federal and regional levels to secure an increasing number of work integration traineeship places with a focus on the low qualified school leavers and to launch the Youth guarantee by 2014<sup>68</sup>. In addition, communities have taken a wide variety of measures to improve guidance on career opportunities, developing alternate training and traineeships at higher education level, and in the Flemish community by the introduction in 2009 of short post-secondary curriculum<sup>69</sup>.

Moreover, all communities have taken measures to improve the quality, relevance and attractiveness of vocational education and training (VET). Participation in VET is high with 72.8% of students enrolled in upper secondary vocational education and training in 2012. However, pupils enrolled in VET qualification sections and apprenticeships are faced with a high level of repetition years and are more at risk of leaving without qualification. Early June 2013, the Flemish Government has reached an agreement on an orientation note aiming at a profound reform of secondary education. The agreement foresees a 'broad' common first 2 years degree allowing for later orientation towards VET and general education streams. Provisions to include both weak and strong performers are foreseen. The split between general, technical, vocational and artistic education in upper secondary education would be replaced by a specialisation according to 5 fields. A final decision is to be taken by 2016. To reduce the level of repetition years and drop-outs, the French speaking community has launched the "Qualification by units" - CPU70 project accompanied with the introduction of learning outcomes. A unique apprenticeship contract will be introduced in 2013.

The 2012 VESOC agreement between the Flemish Government and the Social Partners on Professional Careers foresees actions related to transition from education to the labour market. The French Wallonia-Brussels parliament has started to discuss in August 2013 the project for a third economic 'Marshall Plan' (referred as MP '2022'); consultation of the social partners has been launched. Compared to the previous plans, a major change is the central role given to education and training and the need to increase the link with the world of work.

<sup>67</sup> OECD eco review- 15 Jan 2013, Enhancing the inclusiveness of the labour market in Belgium By Jens Høj eco/wkp(2013)1 no 1009

<sup>68</sup> From October 2013, the Brussels region has set-up a specific "Youth Guarantee" service whose first task will be to implement the federal measure related to integration work traineeships

<sup>69</sup> "Se-n-se" and short cycle HE vocationally-oriented study programmes (HBO5), Decree on Higher vocational education of April 2009. Evaluation planned in 2013

<sup>70</sup> Initiated in 2010-11, the pilot project "Qualification by units- CPU" concerns the last two years of compulsory education and should be achieved in 2012-13. It introduces the concept of certification by units. The pilot concerns 5 secteurs : training programmes consist in different units with corresponding learning outcomes. It is a response to the Ecvet approach.

## 7. Upgrading skills through lifelong learning

The Survey of Adult Skills (PIAAC<sup>71</sup>) shows that adults (aged 16-65) in Belgium (Flanders) score significantly above the EU average in the proficiency tests on literacy and numeracy. Moreover, the share of low-skilled adults is rather low: 14% in literacy and 13% in numeracy (compared to 19% and 24% respectively at EU level).

The gap in proficiency skills for literacy between the generations aged 25-34 and 55-65 is significant (i.e. equivalent to the skills usually acquired with about 5 years of education). This might be due to improvements in the education system in recent decades and / or a decline in skills over the working life.

In addition, there is a big difference between the skills levels of native and foreign born. There are however rather small differences in young adults' (aged 16-29) scores in literacy and numeracy across different education levels, in particular between lower and upper secondary education.

Despite the fact that different measures have been taken at federal and regional levels, the adult participation rate in lifelong learning is well below the EU average (6.6% vs. 9% in 2012), notably for older workers (3.5%) and the low-skilled (2.7%)<sup>72</sup>, and declined continuously over the last few years.

Nevertheless, employees have, in comparison to the EU average, in principle good access to enterprise-provided continuing training, because in 2010, 78% of enterprises provided such vocational training (EU: 66%). Better synergies between the main training providers are progressing in the regions and initiatives are taken to secure the quality of the provision of training. The French-speaking community, Wallonia and the Brussels region have launched in February the '2013 – the year of competences'. The objective is to prepare, with all training providers, a more profound reorganisation of the post-2014 period LLL approaches and governance mode in view of the transfer of responsibilities established by the last state reform.

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<sup>71</sup> 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).

<sup>72</sup> Source : Eurostat 2012



## 1. Key indicators and benchmarks

	Bulgaria		EU average		Europe 2020 target / Benchmark
	2009	2012	2009	2012	
<b>1. Early leavers from education and training</b> (age 18-24)	14.7%	12.5%	14.2% <sup>EU28</sup>	12.7% <sup>EU28</sup>	<b>EU target: 10%</b> National target: 11%
<b>2. Tertiary educational attainment</b> (age 30-34)	27.9%	26.9%	32.1% <sup>EU28</sup>	35.7% <sup>EU28</sup>	<b>EU target: 40%</b> National target: 36%

## ET 2020 Benchmarks

3. Early childhood education and care (4 years old - year before start of compulsory primary)		78.5%	86.6% <sup>11</sup>	91.7%	93.2% <sup>11</sup>	95%	
4. Basic skills Low achievers (15 year-olds; Level 1 or low er in PISA study)	Reading	41.0%	:	19.6%	:	15%	
	Mathematics	47.1%	:	22.2%	:	15%	
	Science	38.8%	:	17.7%	:	15%	
5. Learning mobility	Initial vocational training (IVET)	a. Students participating in Leonardo da Vinci programs as a share of vocational students at ISCED 3		0.5%	0.7% <sup>11</sup>	0.6%	0.7% <sup>11</sup>
	Higher Education	b. Erasmus inbound students as % of student population in host country		0.3% <sup>11</sup>		1.1% <sup>11</sup>	
		c. Inbound degree mobile students as % of student population in the host country		3.6% <sup>11</sup>		7.0% <sup>11</sup>	
6. Employment rate of graduates (age 20-34) having left education 1-3 years before reference year		73.6%	67.3%	78.3%	75.7%	82%	
7. Adult participation in lifelong learning (age 25-64)		1.4%	1.5%	9.3%	9.0%	15%	

## Proposed ET 2020 benchmark

<b>8. Foreign languages skills</b>	a. ISCED 2 students at proficiency level B1 or higher in first foreign language <sup>1</sup>	:	35.3% <sup>11</sup>	:	43.5% <sup>11</sup>
	b. ISCED 2 students learning two or more foreign languages	22.9%	19.4% <sup>11</sup>	58.6%	60.8% <sup>10</sup>

## Other ET 2020 Indicators

<b>9. Investment in education and training</b>	a. General government expenditure on education (% of GDP)		4.3%	3.6% <sup>11</sup>	5.5%	5.3% <sup>11</sup>
	b. Annual expenditure on public and private educational institutions per pupil/student in € PPS	ISCED 1-2	€ 2,335 <sup>08</sup>	€ 2,190 <sup>10</sup>	€ 5,732 <sup>08</sup>	€ 6,021 <sup>10</sup>
		ISCED 3-4	€ 2,256 <sup>08</sup>	€ 2,148 <sup>10</sup>	€ 6,964 <sup>08</sup>	€ 7,123 <sup>10</sup>
		ISCED 5-6	€ 4,829 <sup>08</sup>	€ 3,763 <sup>10</sup>	€ 9,309 <sup>08</sup>	€ 9,168 <sup>10</sup>
<b>10. Digital competences</b>	a. Pupils in grade 4 (ISCED 1) using computers at school		:	:	60.7% <sup>07</sup>	64.7% <sup>11</sup>
	b. Individuals aged 16-74 with high computer skills <sup>2</sup>		7.0%	12.0%	25.0%	26.0%
<b>11. Entrepreneurial competences</b>	Individuals aged 18-64 who believe to have the required skills and knowledge to start a business		:	:	42.3% <sup>a</sup>	42.0% <sup>a</sup>
<b>12. Vocational education and training</b>	Share of vocational students at ISCED 3		51.8%	52.2% <sup>11</sup>	49.6%	50.3% <sup>11</sup>
<b>13. Skills for future labour markets</b> Projected change in employment 2010-2020 in %	High qualification		:	5.3%	:	19.1% <sup>EU28</sup>
	Medium qualification		:	-1.9%	:	4.6% <sup>EU28</sup>
	Low qualification		:	-27.9%	:	-20.2% <sup>EU28</sup>
<b>14. Low-skilled adults</b>	Literacy		:	:	:	19.9% <sup>EU17</sup>
	Numeracy		:	:	:	23.6% <sup>EU17</sup>
	Problem solving in technology rich environments <sup>3</sup>		:	:	:	26.9% <sup>EU13</sup>

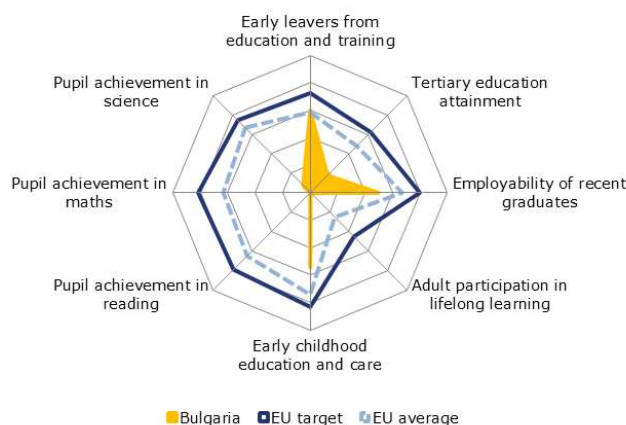
Source: Cedefop: 13 / EAC: 10a,b / European Survey on Language Competences (ESLC): 8a / Eurostat (Government finance statistics): 9a / Eurostat (LFS): 1, 2, 6, 7 / Eurostat (ISS): 10b / Eurostat (UOE): 3, 8b, 9b, 10c, 12 / IEA TIMSS: 10a / Global Entrepreneurship Monitor: 11 / OECD (PIAAC): 14 / OECD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

Notes: <sup>07</sup> = 2007, <sup>08</sup> = 2008, <sup>09</sup> = 2009, <sup>10</sup> = 2010, <sup>11</sup> = 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

<sup>1</sup> = average of skills tested in reading, listening, writing, <sup>2</sup> = having carried out 5-6 specific computer related activities, <sup>3</sup> = 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

Bulgaria is facing the challenge of improving the overall quality and efficiency of its education system. The final adoption of the School Education Act before the end of 2013 would provide a framework for progress on the necessary reforms, including modernising curricula, amending Act on Vocational Education and Training and implementing improvements to teachers' education and incentives.

In higher education, reforms have made very limited progress. The existence of an important disparity between higher education outcomes and labour market demand worsens structural unemployment and hampers the development of high-value, innovative sectors. The poor performance of higher education is linked to a lack of incentives at institutional level as well as to the standard of individual researchers and teachers.

Bulgaria is addressing some of its challenges however close attention needs to be paid to adopting the reform laws and to enforcing their implementation while carefully monitoring their impacts. Implementation of the reform of higher education, accompanied by effective governance and sufficient investment will be key for promoting growth and competitiveness of the Bulgarian economy.

The country-specific recommendation (CSR) on education and training from the 2013 European Semester thus recommends the adoption of the School Education Act as well as the reform of vocational education and training and higher education, in particular through better aligning outcomes to labour-market needs and strengthening cooperation between education, research and business. Improving access to inclusive education for disadvantaged children, in particular Roma is also being proposed.

## 3. Investing in skills and qualifications

### Investing in education and training in a context of economic crisis

General government expenditure on education as a share of GDP in Bulgaria is the lowest in the EU and well below the EU average (3.6% vs. 5.3% in 2011) and has been on the decrease from 4.3% in 2009 to 3.4% in 2012. As far as the situation at the different levels of education is concerned, the level of expenditure was the lowest in the EU in 2010 also at the tertiary level, expenditure for primary and secondary levels were significantly lower than the EU average, whereas at pre-primary level it was significantly higher than the EU average.

### Skills

According to the OECD PISA tests there has been an improvement from 2006 to 2009 in pupil achievement in reading, maths and science. However Bulgaria still remains with 41% and 47.1% in reading and maths respectively the worst performer in the EU, and with 38.8% in science the second worst performer in the EU.

At 12% in 2012 Bulgaria has the second-lowest share of individuals aged 16-74 with high computer skills which is consistent with the low rate of access to ICT. Bulgaria is below the EU average as regards foreign languages skills.

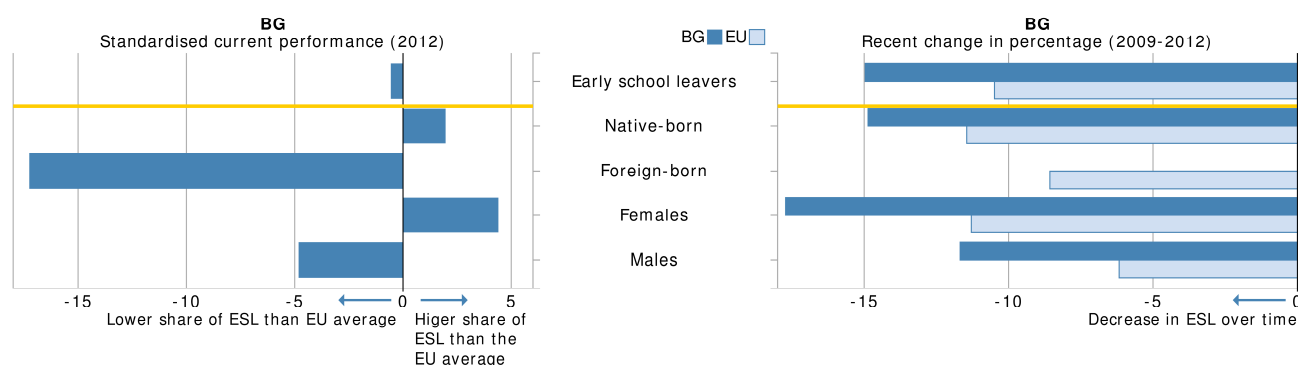
The National Qualifications Framework (NQR) elaborated in line with the European Qualifications Framework for Lifelong Learning and the Qualifications Framework for the European Higher Education Area was adopted in 2012 and presented to the EQF Advisory Group in 2013. The Bulgarian NQR is one single, comprehensive framework,

which includes qualifications from all levels and subsystems of education and training (pre-primary, primary and secondary general education, VET and HE). It will provide a reference point for validating non-formal and informal learning.

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

Bulgaria is slightly outperforming the EU average as regards the early school leaving rate (12.5% vs. 12.7% in 2012). It has shown a steady improvement since 2006 (17.3%) and is making progress towards achieving the national 2020 target of 11%, despite a moderate step back from 2011 (11.8%).

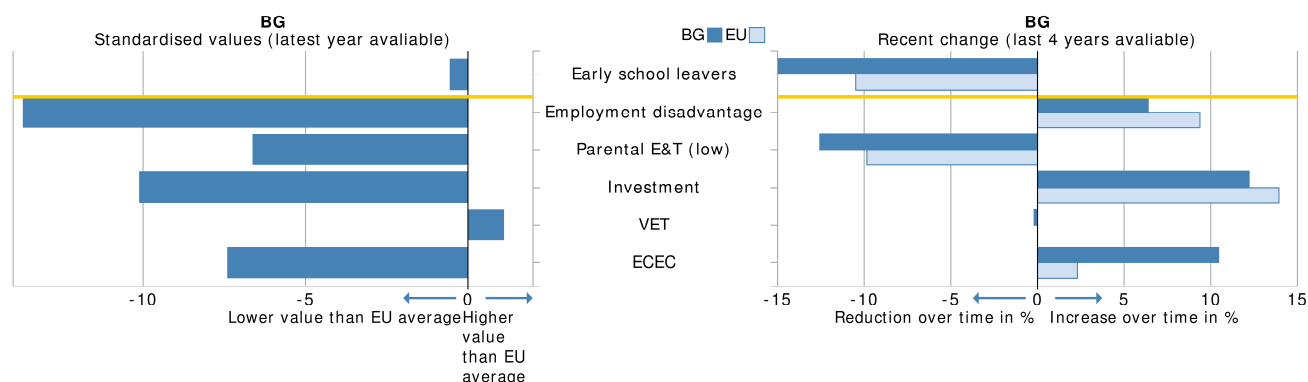
Figure 2. Early leavers from education and training: sub-groups



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

The JAF sub-indicators show that the employment disadvantage for early school leavers is low however it is on the increase. Likewise the level of investment and early childhood education and care are on the increase, for ECEC at a significantly higher rate than the EU average.

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



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

72 State Education Standards and 391 new curricula for compulsory education and specialised study courses have been developed through European Social Fund (ESF) co-funded projects and cover all subjects for general education. Pending adoption of the new School and Pre-School Education Act, which is required for the new curricula to come into force, training of teachers and of assessors for the assessment of school books is on-going.

The improvement of teacher education is being carried out through a National Programme for Qualifications and a complementary training programme co-funded by the ESF. The training is for the qualification of pedagogical experts and covers topics including foreign languages, ICT, special education needs and intercultural learning.

Supporting educational integration and ensuring effective access to disadvantaged groups, in particular Roma students, is a major priority in the area of education. A strategy on early school leaving has been drawn up and is consultation is on-going with a view to adopt the strategy by end 2013.

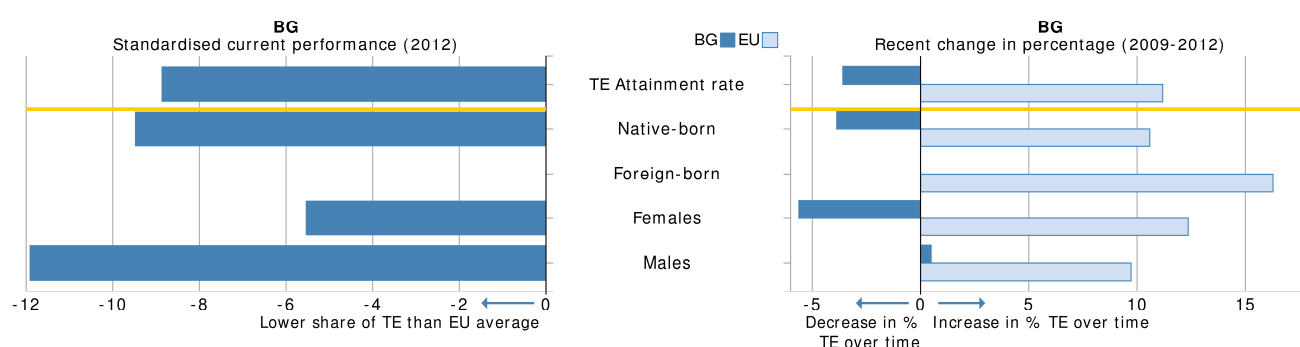
At present almost half of the Roma students in Bulgaria (48.3%) are enrolled in school facilities situated in urban neighbourhoods with predominantly Roma populations, which creates conditions for the increased educational segregation of Roma students. An ESF co-funded project focusing on pilot schools is being implemented with activities including assessment of needs of children and support of children with disability. The objective is to introduce an inclusive approach to education with difficulties identified at pre-school age. Participating schools are assigned speech therapists and psychologists to assist teachers in assessing children's needs.

The necessary measures for optimizing both pre-school and school infrastructure should include repair, renovation and efficient management of technical and material facilities, introduction of energy efficiency measures, and improving accessibility for children with special educational needs, including supportive built environment.

## 5. Encouraging participation in tertiary education and modernising higher education

Bulgaria's tertiary attainment rate is lagging behind the EU average (26.9% vs. 35.7% in 2012) with minimal progress being registered since 2006 (25.3%) towards the national 2020 target of 36%.

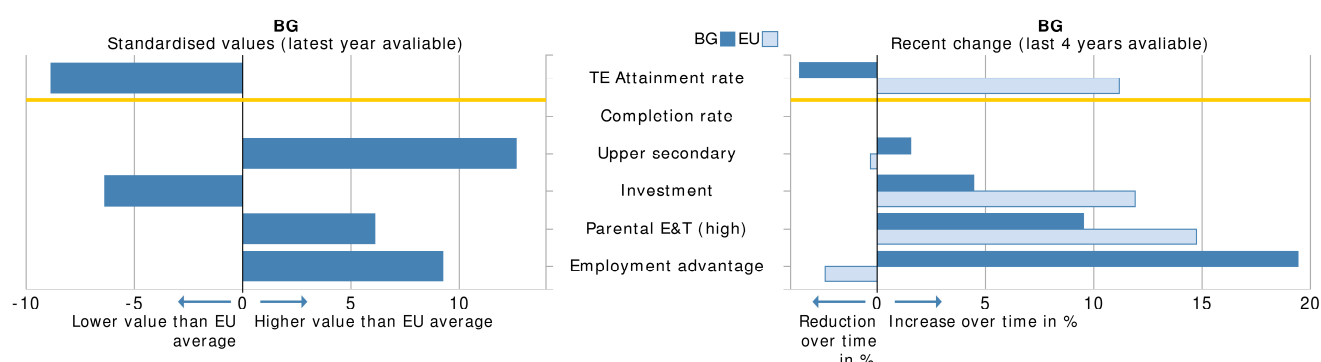
Figure 4. Tertiary education attainment: sub-groups



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

The JAF sub-indicators show that investment is low and is not increasing as much as the EU average. It is also noted that upper secondary prevalence is much more pronounced, even though the employment advantage of tertiary education is large and growing further rapidly.

Figure 5. Tertiary education attainment: sub-indicators



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

Higher education faces persisting challenges in responding better to labour market needs (employment levels of young graduates is at 67.3% in 2012) and raising innovation potential in the economy. The existing financing and structure of the higher education system, including the degree of specialisation, and suboptimal incentives at the institution level, as well as for individual teachers and researchers, contribute to the gap between educational output and demand.

Bulgaria has addressed the 2012 CSR calling for reform of higher education (upper/post-secondary and tertiary) mostly by initiating the process of modernising the curricula for higher and vocational education. Calls for

proposals have been issued and 80% of all university students are expected to have modernised curricula by the end of 2014.

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

High unemployment among the low-skilled and young people (28.5% and 28.2% respectively in 2012) partly reflects persistent skill and regional mismatches as well as the low quality and low relevance to labour market needs of the education and training systems. Amid risks of locking the economy on a low-growth path, low employment rates also result in a persistent and significant share of the population becoming vulnerable to poverty and social exclusion. Under the national 'Employment for Youth' initiative, Bulgaria has committed itself to reduce the youth (15-24 years) unemployment rate to 23% and the share of young NEETs to 19% by the end of 2013.

Draft amendments to the Labour Code on internship contracts for young graduates with secondary or tertiary education are at an advanced stage of adoption. The measures planned in this area are relevant, but more needs to be done to differentiate among the needs of young people with diverse levels of education and socio-economic backgrounds.

Draft amendments to the Vocational Education and Training Act as well as adoption of new strategic documents and tools would introduce to the system the models and principles of validation of non-formal and informal learning; modularisation of learning content and transfer of credits based on learning outcomes; applying quality assurance mechanisms thus increasing accessibility, quality and permeability of the VET sector and ensuring flexible paths to further learning or labour market.

More active cooperation is required with the business and the employers so that the knowledge obtained in the secondary vocational education could be as close to the real working environment as possible. This mismatch in the skills raises concerns with regard to the competitiveness of the economy.

A positive development is that calls for proposals for modernised curricula for vocational training have been issued and it is foreseen that the curricula will be modernised in partnership with employers. At present the ratio between theory and practice in the curricula of most of the professions still remains in favour of the theory; the employers do not participate in the development of the training materials and are not active enough in the process of final evaluation of the skills attained by the graduates from the vocational training under the different professions.

Investigations of skills mismatches are organized by employers and labour administration. The latter was active in the years of crisis and organized a scheme that will provide regular information on the mismatches. The scheme: "Establishment of a system of forecasting labour force demand" (2011 – 2013, 0.500 million Euro granted from the ESF) is aimed to improve forecasting procedures and dissemination of results.

These are first steps towards a more flexible system for vocational training and education with regard to the requirements of the business for swift and direct inclusion of the graduates in the labour market.

## 7. Upgrading skills through lifelong learning

Adult participation in lifelong learning (1.5% in 2012) is the second-lowest in the EU. Lifelong learning in Bulgaria is still experiencing impediments, such as limited and not well adapted opportunities to the training needs of the various target groups, lack of support systems and insufficient flexibility between the different learning solutions (e.g. between vocational education and training and higher education). The problems are even more aggravated by the fact that the bigger part of the potential trainees are with a lower socio-economic and educational status.

As only 31% of enterprises report to provide continuing vocational training (CVTS 2011), also training opportunities for employees are limited (EU: 66%). Even if about half of the employees of these enterprises participate in some training, which is around EU average, the average duration of these activities is rather short (22 hours; EU: 38%).

An integrated lifelong learning strategy for 2014-2020 is being elaborated, which would contribute to the educational spectrum entirety, as well as to the coordination of the actions among all interested parties. There has been ongoing work since 2012 on a pilot project of the National System for Validation of Non-formal and Informal Learning, which will encompass the system of vocational education and training.

Measures for improved guidance and counselling services have been undertaken – a National network of 37 offices for information and professional counselling for employers and employees has been set up.

## 1. Key indicators and benchmarks

	Croatia		EU average		Europe 2020 target / Benchmark
	2009	2012	2009	2012	
<b>1. Early leavers from education and training</b> (age 18-24)	3.9%	4.2%	14.2% <sup>EU28</sup>	12.7% <sup>EU28</sup>	<b>EU target: 10%</b> National target: /
<b>2. Tertiary educational attainment</b> (age 30-34)	20.6%	23.7%	32.1% <sup>EU28</sup>	35.7% <sup>EU28</sup>	<b>EU target: 40%</b> National target: /

## ET 2020 Benchmarks

3. Early childhood education and care (4 years old - year before start of compulsory primary)			68.8%	70.6% <sup>11</sup>	91.7%	93.2% <sup>11</sup>	95%
4. Basic skills Low achievers (15 year-olds; Level 1 or lower in PISA study)	Reading		22.5%	:	19.6%	:	15%
	Mathematics		33.2%	:	22.2%	:	15%
	Science		18.5%	:	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	0.1% <sup>10</sup>	0.6% <sup>11</sup>	0.6%	0.7% <sup>11</sup>	
	Higher Education	b. Erasmus inbound students as % of student population in host country		0.0% <sup>11</sup>		1.1% <sup>11</sup>	
		c. Inbound degree mobile students as % of student population in the host country			0.5% <sup>11</sup>		7.0% <sup>11</sup>
6. Employment rate of graduates (age 20-34) having left education 1-3 years before reference year			77.0%	58.7%	78.3%	75.7%	82%
7. Adult participation in lifelong learning (age 25-64)			2.3%	2.4%	9.3%	9.0%	15%

## Proposed ET 2020 benchmark

<b>8. Foreign languages skills</b>	a. ISCED 2 students at proficiency level B1 or higher in first foreign language <sup>1</sup>	:	47.0% <sup>11</sup>	:	43.5% <sup>11</sup>
	b. ISCED 2 students learning two or more foreign languages	46.0%	50.0% <sup>11</sup>	58.6%	60.8% <sup>10</sup>

## Other ET 2020 Indicators

<b>9. Investment in education and training</b>	a. General government expenditure on education (% of GDP)		:	:	<sup>11</sup>	5.5%	5.3% <sup>11</sup>
	b. Annual expenditure on public and private educational institutions per pupil/student in € PPS	ISCED 1-2	€ 3,414 <sup>08</sup>	€ 3,285 <sup>10</sup>		€ 5,732 <sup>08</sup>	€ 6,021 <sup>10</sup>
		ISCED 3-4	€ 3,623 <sup>08</sup>	€ 3,485 <sup>10</sup>		€ 6,964 <sup>08</sup>	€ 7,123 <sup>10</sup>
		ISCED 5-6	€ 7,307 <sup>08</sup>	€ 5,233 <sup>10</sup>		€ 9,309 <sup>08</sup>	€ 9,168 <sup>10</sup>
<b>10. Digital competences</b>	a. Pupils in grade 4 (ISCED 1) using computers at school		:		<sup>11</sup>	60.7% <sup>07</sup>	64.7% <sup>11</sup>
	b. Individuals aged 16-74 with high computer skills <sup>2</sup>		24.0%	27.0%		25.0%	26.0%
<b>11. Entrepreneurial competences</b>	Individuals aged 18-64 who believe to have the required skills and knowledge to start a business		59.0%	44.0%		42.3% <sup>a</sup>	42.0% <sup>a</sup>
<b>12. Vocational education and training</b>	Share of vocational students at ISCED 3		72.5%	71.5%		49.6%	50.3% <sup>11</sup>
<b>13. Skills for future labour markets</b> Projected change in employment 2010-2020 in %	High qualification		:	6.0%		:	19.1% <sup>EU28</sup>
	Medium qualification		:	0.7%		:	4.6% <sup>EU28</sup>
	Low qualification		:	-17.5%		:	-20.2% <sup>EU28</sup>
<b>14. Low-skilled adults</b>	Literacy		:	:		:	19.9% <sup>EU17</sup>
	Numeracy		:	:		:	23.6% <sup>EU17</sup>
	Problem solving in technology rich environments <sup>3</sup>		:	:		:	26.9% <sup>EU13</sup>

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

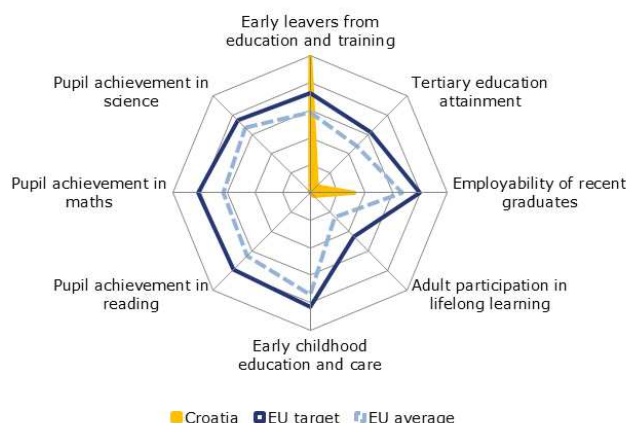
Notes: <sup>07</sup> = 2007, <sup>08</sup> = 2008, <sup>09</sup> = 2009, <sup>10</sup> = 2010, <sup>11</sup> = 2011, e = estimate, a = unweighted average b = break, p = provisional

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

<sup>1</sup> = average of skills tested in reading, listening, writing, <sup>2</sup> = having carried out 5-6 specific computer related activities, <sup>3</sup> = 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

Even though Croatian education has experienced substantial reforms<sup>73</sup> over the last decade, its performance shows several weaknesses at different levels. First, some progress has been achieved in terms of the tertiary education attainment rate. However a serious effort may be required in order to reach the national and Europe 2020 target. Second, educational outcomes at primary and secondary level are low and raise the question of the quality of compulsory education. In particular, educational achievements of 15 years old students have deteriorated as measured by PISA, remaining below the EU average, most distinctively in mathematics. Third, participation in early childhood education is low compared to the EU average, despite some improvement over the last years. Fourth, adult participation in lifelong learning is low and on decrease. Main issues in this area revolve around adult learning as well as teacher education not receiving the required attention and funding. Finally, the VET system in Croatia requires reorganisation in order to become more attuned to the labour market.

In sum, education and training at all levels show evident skills gaps compared to labour market needs<sup>74</sup>, which hampers significantly the transition of young people from school to work.

Combined with future demographic trends these weaknesses threaten to undermine competitiveness as well as necessary productivity gains and result in clear skills gap between education and the needs of the labour market.

## 3. Investing in skills and qualifications

### Investing in education and training in a context of economic crisis

In 2010, Croatia's public expenditure on education and training was 4.3% of GDP, which is lower than the EU average (5.4%). The percentage had been stable since 2008 despite the economic crisis situation but education expenditure were finally cut in 2011 and 2012<sup>75</sup>.

### Skills

According to large scale international studies of pupils' performance (TIMSS and PIRLS), 2011 data showed that fourth graders in Croatia scored significantly below the reference point<sup>76</sup> in mathematics, and significantly above the scale centre point in science and reading in comparison to other countries in the surveys.

In secondary education, PISA results show that educational achievements of 15 year-olds is far below the EU average in mathematics<sup>77</sup> and somewhat below in reading and science.<sup>78</sup> All values deteriorated compared to the previous testing in 2006, but the largest difference is found in mathematics.<sup>79</sup>

<sup>73</sup> Among them introduction of the Croatian National Educational Standards and the National Curriculum Framework; introduction of the State Matura as the standardized secondary school-leaving exam; consolidation of professional profiles in vocational education and training; and more internationalization in higher education. Agencies that have been established or successfully expanded their activities are the National Centre for External Evaluation of Education, and the Agency for Science and Higher Education.

<sup>74</sup> In 2011, 20,6% of the participating employers stated that there is a need for further education of their employees; the main areas in which this is necessary are: vocational/technical skills, ICT, foreign languages, team cooperation and communication skills.

<sup>75</sup> Compare Eurydice Funding in Education (2012) that registers annual reduction in Croatia of about 5% in 2011 and 7% in 2012.

<sup>76</sup> Reference point or centre point is a constant measure against which TIMSS and PIRLS studies compare country performance. It is a mean score from the first time the studies were conducted in 2001 (PIRLS) and 1995 (TIMSS).

<sup>77</sup> Percentage of low achievers was 33.2% as opposed to EU: 22.2%

<sup>78</sup> PISA 2009: reading HR: 22.5%, EU: 19.6%; science HR: 18.5% compared to EU: 17.7%.

<sup>79</sup> Reading 2006: 21.5 % as opposed to Reading 2009: 22.5%; Mathematics 2006: 28.6 % as opposed to Mathematics 2009:33.2 %; Science 2006 :17% as opposed to Science 2009: 18.5 %

In Croatia at least one foreign language is compulsory or part of the core curriculum at ISCED 1 and ISCED 2 level<sup>80</sup>. The average number of foreign languages learnt per pupil in lower secondary education rose between 2006 and 2009<sup>81</sup> and has remained stable since then on the level of EU average of 1.5 but results are mediocre<sup>82</sup>.

According to the European Schoolnet Survey of Schools<sup>83</sup>, Croatian schools are well connected in terms of fast broadband. Moreover and despite the lower number of available computers compared to the EU average<sup>84</sup>, the frequency with which ICT is used in classrooms by both students and teachers is above the EU average. The percentage of individuals (16-74) with high computer skills in 2012 was 27% which is above the EU average (26%) and represents an increase of 3 percentage points compared to 2009, when it was below the EU average (25%). In 2012 close to half (44%) of population believes that they have the right competencies to start a business.

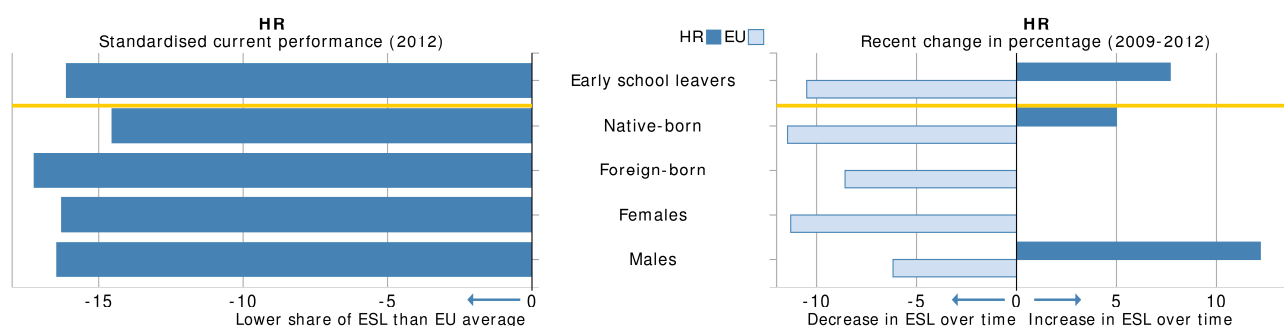
Croatia is developing a national qualifications framework (CROQF) and it adopted the framework legislation in March 2013. CROQF is based on learning outcomes and serves both as qualifications and as a credit framework. It is considered a key engine to further introduce reforms in different areas of the education system, by ensuring the close cooperation of different stakeholders (public authorities, employers, learning providers and other social partners)<sup>85</sup>, increasing transparency, facilitating recognition of prior learning, and attuning training better with labour market needs.

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

The early school leaving rate (ESL) remains very low compared to the EU average. However, it has been marginally increasing in the last couple of years from record low 3.7% in 2008 to 4.2% in 2012 (in comparison to EU average 14.8% and 12.8 %, respectively<sup>86</sup>). When it comes to particular subgroups of early school leavers, the between-group differences are not as stark as in the rest of the EU. Namely, gender difference is smaller (1 percentage point) compared to the EU average (3.5 percentage points).

Moreover, since 2008, the share of the unemployed early school leavers has increased by 25 percentage points<sup>87</sup>. Plans to implement compulsory upper secondary education have been stalled by the current economic conditions that weighed also negatively on the physical refurbishment plans and on the provision of free text books, public school transportation and student dormitories.

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



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

In 2011, only 70.6% of children were enrolled in early childhood education and care (ECEC) programmes. Participation had increased by around 2 percentage points since 2009 but the rate is still well below the EU average of 93.2%. However quality of ECEC, measured as the child-staff ratio, appears to be more satisfactory (it was 12.1, as opposed to the EU average of 13.4)<sup>88</sup>.

<sup>80</sup> See ESCL Survey.

<sup>81</sup> From 1.2 in 2006 to 1.5 in 2009 Source: Eurostat

<sup>82</sup> The results of the 2011 ESCL survey show that upon the completion of lower secondary education the knowledge of English as a foreign language is around the average. The percentage of students with a level of knowledge that corresponds to CEFR B1 is 24 % and for B2 level it is 23 %.

<sup>83</sup> <https://ec.europa.eu/digital-agenda/sites/digital-agenda/files/Croatia%20country%20profile.pdf>

<sup>84</sup> 9 students per computer as opposed to EU average of 5.

<sup>85</sup> Publication Analysis and overview of NQF developments in European countries, Annual report 2012, CEDEFOP

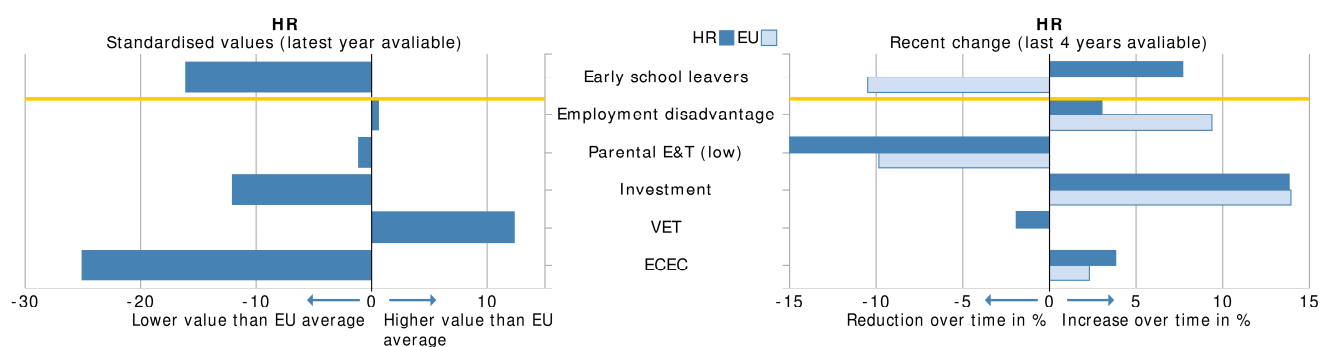
<sup>86</sup> Source: EU LFS ([http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&plugin=1&language=en&pcode=t2020\\_40](http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&plugin=1&language=en&pcode=t2020_40)).

<sup>87</sup> From 2008 to 2012 it increased by 25 percentage points. From 2011 to 2012 it increased by 5 percentage points. Source A4 unit Stan's email check how to refer to this...

<sup>88</sup> According to UNICEF, optimal child-staff ratio is below 15. Source: Education and Training Monitor 2012.



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



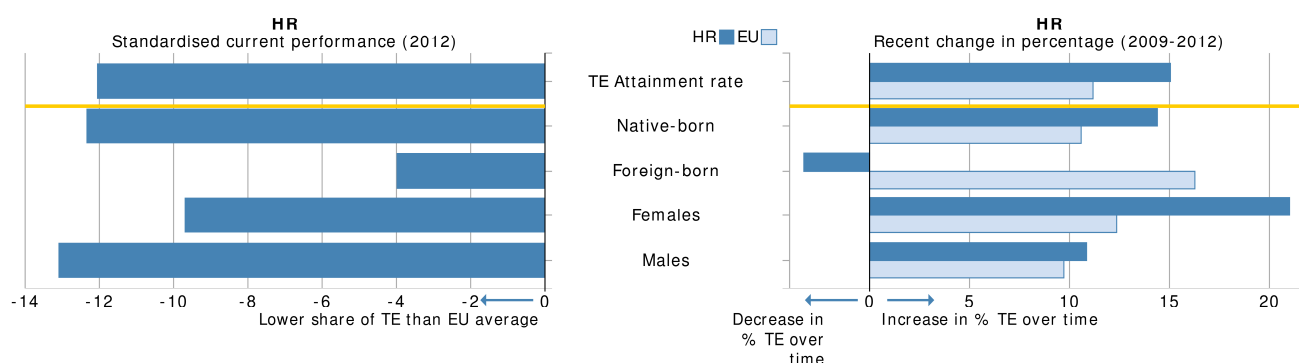
Source: JRC-CRELL. Note: see Annex 2 for an explanation of the sub-indicators.

Croatia is one of the few EU countries that have increased their teaching work force between 2007 and 2010 whilst the student population is in decline<sup>89</sup>. Teacher education is a distinct focus of policy and a 'Strategy of Teaching, Education, Science and Technology 2013-2020', as a follow up to the previous 2009-2013 is currently being devised. It will update several sector strategies that have been only partially implemented and will also include life-long learning that had not been covered so far.

## 5. Encouraging participation in tertiary education and modernising higher education

Enrolment in tertiary education has continuously risen and tertiary education attainment (30-34 year olds) doubled in the past five years reaching 23.7% in 2012 (compared to 35.7% in the EU). Nevertheless, growth in the attainment rate has been levelling off since 2011<sup>90</sup> and Croatia will have to step up efforts to reach the national target of 35%. The amount of tertiary VET graduates increased by 2.3 percentage points in the 2006-2011 period (7.6 % in 2010), which is slightly above the EU average.<sup>91</sup> The increase can be attributed to the transition towards the new degree structure of the Bologna programme but also to previous national reforms.<sup>92</sup>

Figure 4. Tertiary education attainment: sub-groups



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

Croatia, after joining the Bologna process in 2001, has set up a quality assurance system, introduced the European Credit Transfer System (ECTS) and joined the Lisbon Recognition Convention<sup>93</sup>. The current organisation of universities, which grants full legal independence to faculties, is perceived as a hurdle to further improve the quality of higher education. As a matter of fact, it hampers the capacity of the rector and the central university bodies to define and implement an overall strategy covering all parts of a university and affects quite negatively areas such as performance-based financing, institutional leadership, and a more strategic outlook of

<sup>89</sup> Eurydice, Funding of Education in Europe (2013): Other countries are Austria and Cyprus.

<sup>90</sup> In 2008 it was 18.5%; in 2010 24.3% and in 2012 23.7% in comparison to EU average which was 31%, 33.5 % and 35.8%, respectively. See Eurostat Labour Force Survey.

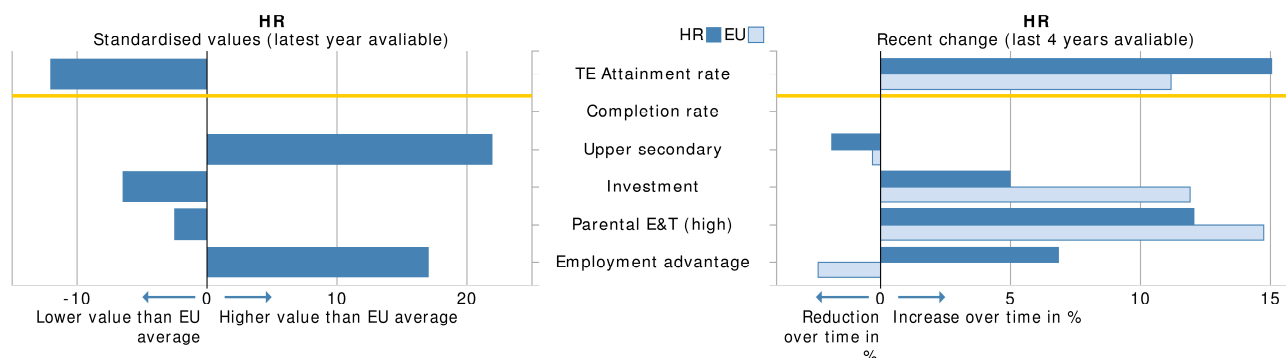
<sup>91</sup> See Cedefop 2013 'On the way to 2020: data for vocational education and training policies Indicator overviews'.

<sup>92</sup> Among these, the introduction of the Croatian National Educational Standards and the National Curriculum Framework; the introduction of a standardized secondary school-leaving exam; the consolidation of professional profiles in vocational education and training; and greater internationalisation in higher education.

<sup>93</sup> World Bank 2012

universities and their constituents. With respect to didactic and pedagogic approaches, Croatia is aiming to strengthen learner-centred approach.

Figure 5. Tertiary education attainment: sub-indicators



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

The percentage of Croatian students enrolled in a university in another EU member state both for a degree programme and for a non-degree (credit) one was above the EU average in 2010<sup>94</sup>, which is considered to be a success for the Bologna process, designed as an instrument to encourage mobility among students. However, still 73% of students have not and do not plan to enrol in courses abroad and this share reaches 90% for students from less privileged social backgrounds.<sup>95</sup>

Nevertheless, the number of foreign students studying in Croatian universities was lower than the EU average in 2005 and sharply decreased in 2010<sup>96</sup>. One of the factors may be that the offer of English programmes for international students is reduced.<sup>97</sup>

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

The employment rate for recent graduates (15-24 year-olds) in 2012 was 16.9%, far below the EU average (32.8%). Employment rate decreased by 8.7 percentage points between 2009 and 2012<sup>98</sup> and reveals that young people are increasingly facing difficulties in the transition from school to work.

The VET system in Croatia requires reorganisation in order to become more attuned to the labour market.<sup>99</sup> In 2010 the Agency for Vocational and Adult Education and Training was created with the purpose of planning, monitoring and improving vocational and adult education. The agency plays an important role in the CROQF-related reforms and, in particular, in reforming VET towards an outcomes-based approach.<sup>100</sup>

The CROQF is currently developing occupational standards for different professions together with stakeholders.

There is a great scope for improving work-based learning opportunities in VET. For instance, reports suggest that three-year VET schools provide better practical training than four year VET schools if supported by stronger partnerships with employers. Practical training in four-year VET schools is marred by the inability of schools to provide placements, which then becomes the responsibility of students. This makes placements often short-lived and deprived of any quality control over learning.

Leonardo da Vinci programme participation rates referring to VET mobility show that the number of participants increased three times for initial VET between 2010 and 2011<sup>101</sup>.

<sup>94</sup> Enrolment for a degree programme was 3.3 in Croatia against an EU average 2.4 and Croat enrolment for credit was 0.2 compared with an EU average of 1.2; see ET Monitor 2012.

<sup>95</sup> Source: The Eurostudent survey.

<sup>96</sup> In 2005 HR: 2.7 EU Mean: 6.4 and in 2010 HR:0.5 and EU average 6.7 See: Education and Training Monitor, 2012.

<sup>97</sup> Ministry of Science, Education and Sports, April 2007, OECD Thematic Review of Tertiary Education Country Background Report for Croatia.

<sup>98</sup> Source: Eurostat, LFS data

<sup>99</sup> The World Bank (February 2012) Croatia: Policy Notes, a strategy for smart sustainable and Inclusive Growth, Report No. 66673-HR

<sup>100</sup> CEDEFOP (2013): Analysis and overview of NQF developments in European countries. Annual report 2012

<sup>101</sup> From 79 participants in 2010 to 237 participants in 2011. Source: [http://ec.europa.eu/education/leonardo-da-vinci/doc/stat/croatia\\_en.pdf](http://ec.europa.eu/education/leonardo-da-vinci/doc/stat/croatia_en.pdf). However, Leonardo da Vinci programme is only one among many other bilateral and national programmes which means that the actual figures may be higher.

## 7. Upgrading skills through lifelong learning

Participation rate of adults (25-64 age group) in lifelong learning in 2012 was 2.4%. This rate is very low in comparison to the EU average (9%) and has not improved since 2007<sup>102</sup>. Moreover, the rate of older adults who participate in lifelong learning (55-64 age group) is only 0.3% in 2012 compared to 4.5% in the EU<sup>103</sup>.

Taking educational background into consideration, in 2011, 2.9% of adults with upper and post-secondary education participated in lifelong learning (EU average 7.6%) and so did 2.9% of adults with tertiary education (EU average 16 %). Both subgroups participate significantly below the EU average but the difference is particularly conspicuous for tertiary graduates.

Regarding the outcomes of employed adults' self-assessment in Croatia in 2010 compared to the rest of EU: employees were less likely to say they needed more training for their current job (8.7% as opposed to the EU average of 13%), more likely to consider they possess skills for even more demanding duties (40.5% as opposed to EU average 31.7%) and less likely to say their skills match the job demand (50.8%, as opposed to 55.3 %). Moreover, employees in high-skilled clerical positions in Croatia were more likely to report a need for further training (16.5%) than employees in lower-skilled clerical positions (8.3%). Finally, employees under 30 years old are more likely to report the need for training (14.6%) whereas employees over 50 years of age are more likely to report having more skills than needed for their duties.

Regarding enterprises, 57% of them provided vocational training in 2010. This is below the EU average of 66%. However only 31% of staff (vs. an EU average of 48%) profited from training, whereas more training hours were delivered per participant (29) compared to the EU average (25)<sup>104</sup>.


The low participation in lifelong learning provides fewer opportunities for engaging in learning as well as results from a lack of demand of learners. Different occupational and age sub-groups perceive the need for training differently and this emphasises the importance of a planned and tailored policy approach to up-skilling in order to avoid skills mismatch and underutilisation.

<sup>102</sup> In 2007 it was 2.4, in 2008 it was 2.2, in 2009 2.3, in 2010 2.2 , in 2011 2.3 Source: Eurostat (LFS)

<sup>103</sup> in comparison with the EU average of 4.5 %.

<sup>104</sup>. Source: Continuous Vocational Training (CVT) in Eurostat

## Annex 1. Summary statistics on the headline target

Early leavers from education and training		OVERVIEW					SUB-GROUPS / EU average (2012)										SUB-INDICATORS / EU average (latest year available)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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							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 disadvantage	Parental educ. (low)	Invest. prim-sec educ.	Participation in VET	Particip. early educ.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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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
- Stable (+/- 0.5 p.p.)
- Increase
- Highest performers
- Lowest performers

## Sub-indicators and standardized level values

For more information, please see Annex 2

# ANNEX 1

Tertiary educational attainment		OVERVIEW					SUB-GROUPS / EU average (2012)										SUB-INDICATORS / EU average ( <i>latest year available</i> )																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
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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<sup>105</sup> and sub-indicators are compared to the corresponding EU averages<sup>106</sup> 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 <sup>107</sup> .
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 <sup>108</sup> .
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).

<sup>105</sup> 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.

<sup>106</sup> 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.

<sup>107</sup> 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.

<sup>108</sup> Ibid.