6. IMPROVING EQUITY IN EDUCATION AND TRAINING

6.1 Early school leavers

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MAIN MESSAGES
Improving Equity in Education and Training

- **Equity continues to be a challenge to most education and training systems in the EU.** Less favoured family backgrounds, migrant origins and gender differences continue to affect educational achievement.

- **1 in 7 18-24 year olds (about 6 million young people) finish schooling with less than upper secondary education**.

- **1 in 7 4-year-olds are still not enrolled in pre-primary education, despite its importance for success in later schooling and for developing social and emotional skills.** Many of children not enrolled are those in greatest need, including children with a migrant background or from families with a low socio-economic status.

- **1 in 50 pupils in compulsory education are - because they are identified as having special educational needs - educated largely out of contact with their mainstream peers.** The percentage varies widely between countries, ranging from below 1% to over 5% of the total compulsory school age population.

- **Gender inequalities remain**. Boys perform less well in reading (performance difference 38 points in PISA) and are more often identified as having special education needs (60% of boys and 40% of girls). Girls perform less well in mathematics (performance difference 11 points in PISA**)** and are underrepresented among higher education students and graduates in mathematics, science and technology.

Launching the Lisbon strategy in 2000, the European Council agreed that the economic targets for 2010 should be accompanied by greater social cohesion (European Commission, 2000a, paragraph 37).

The European Council of March 2008 confirmed the need to combat poverty and social exclusion within the Lisbon agenda and highlighted the challenges of low performance in reading, early school leaving, and learners with a migrant background or from disadvantaged groups (Council, 2008a, paragraphs 14 and 15).

Recent Commission papers on education and training confirm that poverty and social exclusion continue to be a serious challenge for all Member States.

The **Communication on efficiency and equity** in European education and training systems of 2006 defined equity in education and training as the extent to which "individuals can take full advantage of education and training in terms of opportunities, access, treatment and outcomes" (European Commission, 2006a). The Communication brought the central message that it is possible and necessary to develop education and training systems which are both efficient and equitable. The **two recent communications on adult learning** (European Commission, 2006g and 2007h) stressed the key role adult learning has to play in responding to social exclusion.

Different circumstances or conditions, such as low levels of initial education, unemployment, rural isolation and reduced life chances on a wide range of grounds have the effect of marginalising large numbers of people and excluding them from the benefits of society and from being an active citizen. New forms of illiteracy in the shape of exclusion from access to and use of ICT in professional and daily life exacerbate this exclusion: adults who are not digitally literate are deprived of essential information and facilities which are increasingly only available in digital form.

The **Communication "Improving competences for the 21st century: An agenda for European cooperation on schools"** (European Commission, 2008a) which represents a part of the and the Commission's package on the Social Agenda of measures, adopted on 2 July 2008 underscores the need of giving all pupils the competences they need for life in our rapidly changing knowledge society. This includes: increasing levels of reading literacy and numeracy; reinforcing learning-to-learn skills; and modernising curricula, learning materials, teacher training, and assessment accordingly.

Moreover, there is a need to provide high quality learning for every student. This involves generalising pre-school education; improving equity in school systems; reducing early school leaving; and improving support within mainstream schooling for students with special needs.

These goals cannot be achieved without improvements of the quality of teachers and school staff. This will require more and higher quality teacher education; more effective teacher recruitment; and help for school leaders to focus on improving learning.

The Commission's **Green paper on education and migration** (European Commission, 2008d) adopted on 2 July 2008 opened the debate on how education policies may better address the challenges posed by immigration and internal EU mobility flows. The presence of significant numbers of migrant children has substantial implications for European education systems. Key issues are how to prevent the creation of segregated school settings, so as to improve equity in education; how to accommodate the increased diversity of mother tongues and cultural perspectives and build intercultural skills as well as how to adapt teaching skills and build bridges with migrant families and communities.

Educational inequalities persist in Europe and have devastating effects, especially on the lives of the most disadvantaged. Research shows that all European education and training systems are still marked, to a greater or lesser extent, by widespread inequalities. These most often reflect and compound wider socio-economic inequalities; they are detrimental to democracy and social cohesion and have a huge societal and financial cost which is very rarely shown in public accounting systems (European Commission, 2006a).

In this chapter we will analyse the issues of equity and social inclusion in the field of education and training in following four areas:

- early school leavers
- special needs education

- gender issues
- children at risk and intergenerational transmission of disadvantages.

The analysis in the first two areas is linked to core indicators approved by the Council in 2007 as part of a general framework of indicators and benchmarks for monitoring progress in education and training (Council, 2007a).

6.1 Early school leavers

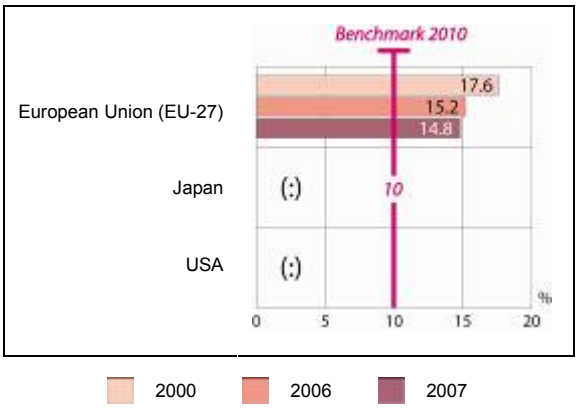
Young people who leave school with only lower secondary education are at a disadvantage on the labour market in today's knowledge-based society.

European benchmark
By 2010 an EU average of no more than 10% early school leavers should be achieved.

Their personal and social development is in danger of being curtailed and they are at risk of a life of poverty and social exclusion. They are also less likely to get involved in lifelong learning.

Chart 6.1: Early school leavers - benchmark for 2010

Percentage of the population aged 18-24 with less than upper secondary education and not in education or training



Data source: **Eurostat (EU-Labour Force Survey), 2000 – 2007**

The issue of early school leaving is becoming more complex as the labour market marginalisation of people leaving school with no qualifications grows.

Taking this into account, the same target for cutting early school leaving is included in the Employment Guidelines (2005/2008) for the revised Lisbon process (Council, 2005d).

The EU benchmark to achieve an EU average of no more than 10% early school leavers by 2010 is based on indicator which refers to persons aged 18 to 24 with highest level of education or training no more than upper secondary education (ISCED 0, 1, 2 or 3c short) declaring not having received any education or training in the four weeks preceding the survey.[57]

In 2007 the average early school leavers rate was 14.8% for EU-27, 2.8 percentage points lower than in 2000. Progress is slow, and at the current rate of improvement, the benchmark of no more than 10% early school leavers will not be attained by 2010. Additional efforts need to be made to meet this target.

Data show a geographical divide between the higher performers in northern and central Europe and the lower performers in the south of the European Union.

The best performers — the Czech Republic, Lithuania, Poland, Slovakia and Finland, along with Norway — all have early school leaving rates below the European reference level (benchmark) for 2010 (not more than 10%).[58] Slovenia and Croatia also belong to the best performers in this area, though recent data are unreliable for these countries because of the small sample size in the Labour Force Survey.

By contrast, in 2007 Malta and Portugal still had the highest proportions of early school leavers in the EU (37.6% and 36.3% respectively), but they are improving steadily. The new Member States which joined in 2007 – Romania and Bulgaria – also have relatively high proportions of early school leavers (19.2% and 16.6% respectively).

In the majority of countries the percentage of early school leavers decreased between 2000 and 2007, especially in Malta (down from 54.2% in 2000 to 37.6% in 2007). Only in Denmark, Estonia, Austria, Slovakia, France and Spain did the percentage of early school leavers stagnate or increase slightly. While the first four of these countries belong to the best performing countries within the EU, the situation in Spain, with one of the highest percentages of early school leavers, is alarming from this point of view.

However, in almost every country the quality and comparability of the data on early school leaving over this period are affected by breaks in time

series, small sample sizes or methodological changes in the surveys.

Despite all the progress, the latest (2007) figure for early school leavers in the EU (14.8%) is still far in excess of the European benchmark of 10% in 2010.

The national targets, combined with lessons learned from the peer learning activities on this subject (the cluster on "access and social inclusion in lifelong learning")[59] by the European Commission, have shown that equity in education, and especially the problems linked to early school leaving, are high on the policy agenda, not only in countries with a high proportion of early school leavers but also in the countries which have been quite successful in the past.

Chart 6.2: Early school leavers, 2000 and 2007

Percentage of the population aged 18-24 with less than upper secondary education and not in education or training, 2000 and 2007

2000	2007	Country
17.6	14.8	EU-27
7.5	4.3	Slovenia
7.9	5.0	Poland
5.5	5.5	Czech Republic
5.6	7.2	Slovakia
8.9	7.9	Finland
16.7	8.7	Lithuania
10.2	10.9	Austria
13.8	10.9	Hungary
14.7	11.5	Ireland
7.7	12.0	Sweden
15.5	12.0	Netherlands
12.5	12.3	Belgium
11.6	12.4	Denmark
18.5	12.6	Cyprus
13.3	12.7	France
14.9	12.7	Germany
18.4	13.0	United Kingdom
14.2	14.3	Estonia
18.2	14.7	Greece
16.8	15.1	Luxembourg
19.5	16.0	Latvia
20.3	16.6	Bulgaria
22.3	19.2	Romania
25.3	19.3	Italy
29.1	31.0	Spain
42.6	36.3	Portugal
54.2	37.6	Malta
8.3	3.9	Croatia
:	:	FYR Macedonia
58.8	47.6	Turkey
29.8	29.8	Iceland
:	:	Liechtenstein
13.3	5.9	Norway

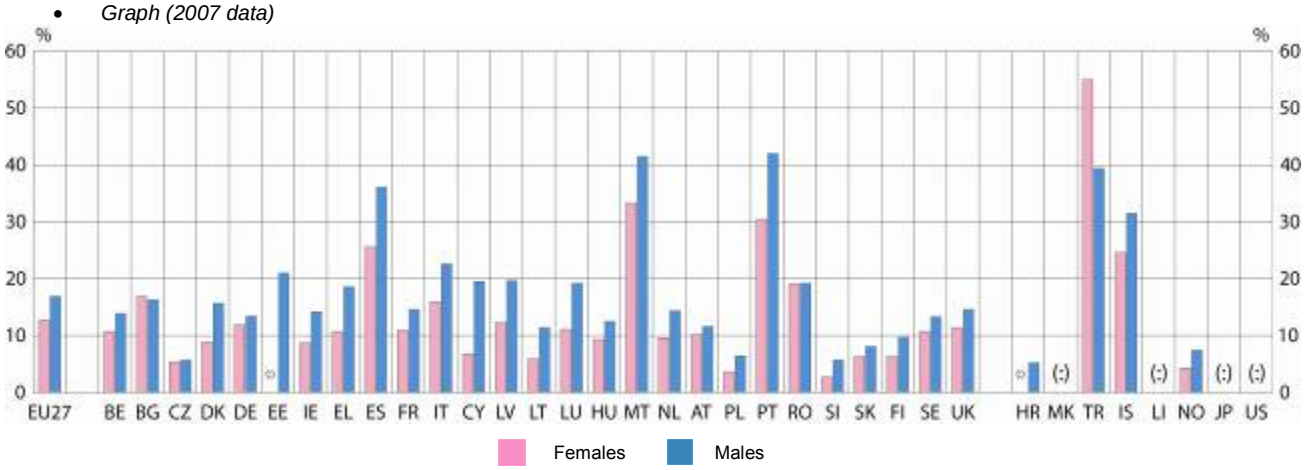
Data source: Eurostat (Labour Force Survey), 2007

Additional notes:
Provisional 2007 data for Latvia, Portugal and Finland
Unreliable data for Slovenia and Croatia because of the small sample size.
Break in series for Finland (2000) and Denmark (2007)
Cyprus: Students studying abroad are not covered by the survey; this indicator is therefore overestimated.
Czech Republic and Croatia: 2000 data refer to 2002

Chart 6.3: Early school leavers by gender, 2000 and 2007

Percentage of the population aged 18-24 with less than upper secondary education and not in education or training, 2000 and 2007

- *Graph (2007 data)*



- *Table (2000 and 2007 data)*

	EU27	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT	LU	HU	MT
2000	17.6	12.5	20.3	5.5	11.6	14.9	14.2	14.7	18.2	29.1	13.3	25.3	18.5	19.5	16.7	16.8	13.8	54.2
Females	15.6	10.2	19.5	5.7	9.9	15.2	12.1	10.9	13.6	23.4	11.9	21.9	13.9	12.2	14.9	17.6	13.2	56.1
Males	19.7	14.8	21.1	5.3:	13.4	14.6	16.3	18.4	22.9	34.7	14.8	28.8	25.0	26.7	18.5	15.9	14.3	52.5
2007	14.8	12.3	16.6	5.5	12.4	12.7	14.3	11.5	14.7	31.0	12.7	19.3	12.6	16.0	8.7	15.1	10.9	37.6
Females	12.7	10.7	16.9	5.4	8.9	11.9	:	8.7	10.7	25.6	10.9	15.9	6.8	12.3	5.9	11.1	9.3	33.3
Males	16.9	13.9	16.3	5.7	15.7	13.4	21.0	14.2	18.6	36.1	14.6	22.6	19.5	19.7	11.4	19.2	12.5	41.5

	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK	HR	MK	TR	IS	LI	NO	JP	US
2000	15.5	10.2	7.9	42.6	22.3	7.5	5.6	8.9	7.7	18.4	8.3	:	58.8	29.8	:	13.3	:	:
Females	14.8	10.7	6.0	35.1	21.3	5.6	4.6	6.5	6.2	17.9	7.4	:	65.8	29.6	:	13.5	:	:
Males	16.2	9.6	9.7	50.1	23.3	9.3	6.7	11.3	9.2	19.0	9.1	:	51.2	29.9	:	13.2	:	:
2007	12.0	10.9	5.0	36.3	19.2	4.3	7.2	7.9	12.00	13.0	3.9	:	47.6	28.1	:	5.9	:	:
Females	9.6	10.2	3.6	30.4	19.1	2.7	6.3	6.3	10.7	11.4	:	:	55.0	24.6	:	4.3	:	:
Males	14.4	11.6	6.4	42.0	19.2	5.7	8.1	9.7	13.3	14.6	5.2	:	39.4	31.5	:	7.4	:	:

Data source: Eurostat (EU-Labour Force Survey)

Additional notes:
2007: provisional data for DK; LV, PT, FI and IS
SI and HR (all indicators, except total for 2001) and EE and LT (indicators by gender): unreliable because of the small sample size.
In DK, LU, IS, NO, EE, LV, LT, CY, MT and SI the high degree of variation of results over time is partly influenced by the low sample size.
Due to the implementation of harmonised concepts and definitions in the survey, the breaks of series were noted in the majority of countries, especially in 2003 and 2004.
CY: Students studying abroad are not covered by the survey; this indicator is therefore overestimated.
The EU aggregates are calculated using the closest available year result in case of missing country data.
UK, CZ, SE and IS: 2007: data for 2006
IE, LV, SK, CZ and HR: 2000: data for 2002
BG, PL and SI: 2000: data for 2001

Moving on to gender, there were more male than female early school leavers in the EU. Slightly more female than male young people leave school before completing at least upper secondary education only in Bulgaria, as well as in Turkey with a significantly higher gender gap.

Factors with a significant impact on early school leaving

Considerable research has been carried out over the past few years at national and international level on early school leavers, and young people 'at risk' of leaving school after the age of compulsory schooling is reached, but before completing upper secondary education. There is evidence that early school leaving is a complex and multidimensional process influenced by a variety of school and out-of-school experiences, with broad social and cultural implications, rather than a single decision made at a specific moment in time (Ferguson, B et al., 2005).

Research has confirmed that pupils choose to leave school even though they know that education and training can increase their chances of getting better jobs and higher earnings in the future.

The literature describes many factors which influence early school leaving. In this section, we will concentrate on some of them, distinguishing seven wider groups.

► ***Individual characteristics***
Pupils might have learning difficulties, health problems, poor knowledge of the teaching language, low self-esteem, or be young parents which often hamper them to continue in schooling. Early school leavers usually perform worse on scholastic tests than students who complete their education successfully, as confirmed for example in longitudinal research done in Canada (Audas, R. and J. D. Willms, 2001).

► ***Education related reasons***
Usually young people who left school before completing upper secondary education have found the upper secondary school environment unsatisfactory for a variety of reasons. They usually had low achievements in the school and negative interaction with their teachers, and many of them were discouraged and disconnected from school.

The decision to leave school before completion of studies was usually a result of a longer period of experiencing failure in the school.

There is also evidence that the rate of early school leavers depends on individual characteristics of schools, such as school size, resources available, and degree of support for students with academic or behavioural problems. Small schools tend to have lower rates of early school leavers (United States General Accounting Office (GAO), 2002).

► ***Job related reasons***
One emerging problem is the availability of **part time work** for young people enrolled in formal education at the upper secondary level. In some countries there has been a greater pull of young people from the formal education system to paid work, supported by a marked increase in part-time job opportunities. A study done by Morgan in Ireland in 2000 has shown that 51% of the sample of students enrolled in upper secondary education was in employment and 58% of those were doing Leaving Certificate. In this connection, increasing concern was expressed that part-time work could lead to an early exit from the formal schooling process, particularly by those already at risk of early leaving (Morgan M., 2000).

Experience from Australia

In Australia the following reasons for leaving school early were identified by students, starting with the reasons most frequently reported:

1. Subjects
2. Teachers/classroom
3. South Australian Certificate of Education
4. Employment
5. School
6. Workload
7. Personal
8. Disabilities
9. Discipline
10. Finance
11. Assessment
12. Timetable
13. Other

(Leaving School early without credentials. As many reasons as students. SSABSA, 1999)

On the other side, there is also evidence that moderate levels of employment (between 10 and 15 hours of work per week) might have a protective effect and help reduce early school leaving (Fergusson, B., 2005)

► ***Family related reasons***
Families can have financial difficulties or negative attitudes to their children's education, not recognising the value of education as such, and often it can be with a family history of early school leaving. The family can also belong to ethnic or cultural minority groups, and access to cultural and intellectual material (books, internet) and the availability of social capital in some families might be limited (Traag, T. and R.K.W. Van der Velden, 2006).

However, in some cultures, families with low socio-economic status are even more ambitious as regards the educational level of their children than higher-status families, believing that investment in their children's higher education will later bring higher economic and social returns.

Also the link between families and school might be poor, and it happens quite often that the school does not know about the socio-economic status of its pupils and students.

► ***Peer effects***
The friends, and rejection by friends, of young people at risk of early school leaving are further factors which have an impact on the decision to drop out from the school. Current and future early school leavers usually have friends who already

left the school prematurely and more friends already working; they may have been rejected by their school peers, and perhaps they were not integrated into their school's social networks (Ellenbogen, S. and C. Chamberland, 1997).

► ***Early experiences and events***
There is evidence from longitudinal studies that early experiences and events have an ongoing and cumulative effect on outcomes (Rumberger R.W., 1995). Researchers examined in this connection performance in the first grade of compulsory schooling, and the behaviour (for example aggressiveness), expectations of parents as regards the education of their children or commitment of pupils in the school, as well as the availability of social capital.

► ***Discrimination in schools***
The discrimination which still occurs in some schools, most often on the grounds of religion, sexual orientation and disability, frequently in the form of harassment and bullying, often leads also to early dropping out of school.

► ***Community effects***
Crane described the community effects by using the "epidemic model", defining ghettos as "neighbourhoods that have experienced epidemics of social problems" (Crane, 1991). There might also be a problem with mobility and school accessibility (poor transportation conditions).

Highest educational level achieved before leaving school

As shown in the table 6.2 below, the majority of European early school leavers — 84% of them — leave formal education after completing lower secondary education, i.e. after completing compulsory education in the majority of European countries.

Table 6.1: Percentage of early school leavers by highest educational level achieved, 2006

	No formal education	ISCED 1	ISCED 2	ISCED 3C short
EU 27	**1**	**9**	**84**	**6**
Belgium	9	14	77	0
Bulgaria	7	12	81	0
Czech Republic	1	0	99	0
Denmark	2	0	98	0
Germany	0	10	90	0
Estonia	1	9	91	0
Ireland	2	13	84	1
Greece	2	23	60	15
Spain	1	14	83	2
France	0	9	91	0
Italy	1	4	94	1
Cyprus	4	28	60	8
Latvia	0	3	97	0
Lithuania	2	7	92	0
Luxembourg	1	6	37	55
Hungary	0	5	95	0
Malta	0	2	98	0
Netherlands	1	10	89	0
Austria	0	0	98	0
Poland	1	12	87	0
Portugal	1	32	67	0
Romania	4	9	87	0
Slovenia	2	2	96	0
Slovakia	1	3	96	0
Finland	0	1	99	0
Sweden	0	2	98	0
United Kingdom	2	0	37	61

Source: EU- LFS, 2006

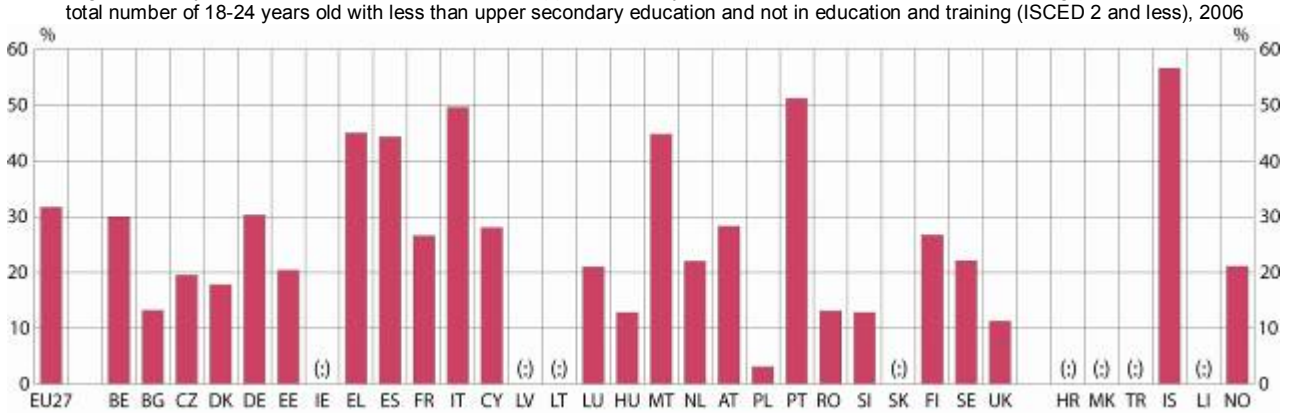
6% of them achieved even some kind of upper secondary education (ISCED 3C short courses) incorporating some vocational or pre-vocational training. However, this concerns only three countries. More than 50% of early school leavers did ISCED 3C short courses in Luxembourg and the UK, and the ratio for Greece is 15%.

What is alarming is that 1% of early school leavers do not have any formal education and 9% of them completed only primary education. The proportion of early school leavers with only primary education is still extremely high in Portugal (32%), Cyprus (28%) and Greece (23%), but also exceeds 10% in Belgium, Bulgaria, Ireland, Spain and Poland.

In Turkey, this group accounts for nearly half of the total number of 18 to 24 years old (46%).

Chart 6.4: Percentage of early school leavers with migrant backgrounds, 2006

Percentage of 18-24 years old non-nationals with less than upper secondary education and not in education and training (ISCED 2 and less) of the total number of 18-24 years old with less than upper secondary education and not in education and training (ISCED 2 and less), 2006



	EU27	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT	LU	HU
Non-nationals	31.7	30.0	13.2	19.5b	17.8a	30.3	20.4a	:	45.0	44.3	26.6	49.6	28.0	:	:	21.0	12.8a

	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK	HR	MK	TR	IS	LI	NO
Non-nationals	44.8a	22.0	28.3	3.1a	51.2	13.1a	12.8	:	26.7b	22.1	11.3	:	:	:	56.6a	:	21.1a

Data source: Eurostat (Labour Force Survey), 2006
Note: a, b – limited reliability because of low number of non-nationals

Early school leavers with migrant backgrounds

There is evidence that migrant pupils perform better where socio-economic status and educational achievement are less correlated, that means, those systems which strongly prioritise equity in education are likely to be most effective in responding to their particular needs. Comprehensive strategies across all levels and strands of the system work best; partial measures may simply transfer problems of inequality or poor attainment from one segment of the system to another. Furthermore, policies to build equity in education work best within a broader framework to build an inclusive society, as recently stated in the Commission's Green Paper on education and migration (European Commission,2008d).

When we look at the share of early school leavers from the aspect of nationality as defined in the Labour Force Survey[60], early school leaving is still a more common phenomenon among non-nationals (30.1% of non-nationals in contrast to 13% of nationals in 2005). From 2005 to 2006 the percentage of early school leavers with migrant backgrounds even slightly increased (by 1.5 percentage points to 31.7% in 2006).

In some countries, the percentage of early school leavers among non-nationals is the double of the percentage observed among nationals (see data in 2007 Progress report).

As shown in the Chart 6.4, from 40% to nearly 50% of the total number of early school leavers have a migrant background in Italy, Greece, Spain and Malta, as well as in Island with a percentage more than 50%. On contrary, the immigration in the new Member States seems to be higher qualified – there were only 10% to 15% early school leavers with migrant background of the total number of early school leavers in the Czech Republic, Bulgaria, Hungary, Romania and Slovenia, a share comparable to the UK with 11.3% of early school leavers with migrant background of the total number of early school leavers in the UK in 2006.

Employment status of early school leavers

As shown in the table 6.2, more than half of early school leavers aged 18 to 24 (56%) in the EU are employed. The rest — nearly half of them — are outside the labour market. About 25% of early school leavers are inactive persons and nearly 20% of them are unemployed (actively looking for employment).

The situation in individual countries varies. In some countries, in particular in Denmark, Estonia, Greece, Malta, Spain, Cyprus, the Netherlands, Portugal, Island and Norway, there are favourable conditions for employment of early school leavers, ranging from about 70% to more than 80% in work (Malta and Island).

Table 6.2 Early school leavers by employment status, 2006 (%)

	Employed	Unemployed	Inactive
EU-27	**56**	**19**	**25**
Belgium	52	20	27
Bulgaria	27	15	58
Czech Republic	32	28	40
Denmark	73	5	22
Germany	47	28	26
Estonia	68	12	20
Ireland	61	14	25
Greece	66	16	18
Spain	73	13	13
France	46	30	24
Italy	53	15	32
Cyprus	74	7	19
Latvia	47	21	33
Lithuania	37	7	56
Luxembourg	52	17	30
Hungary	39	17	44
Malta	83	9	8
Netherlands	75	7	18
Austria	59	16	25
Poland	29	35	36
Portugal	77	11	11
Romania	58	11	32
Slovenia	57	13	30
Slovakia	19	48	32
Finland	54	20	26
Sweden	52	24	24
United Kingdom	55	18	27
Croatia	:	:	:
FYR Macedonia	34	26	40
Turkey	42	6	52
Iceland	86	7	7
Liechtenstein	73	8	20

Data source: Eurostat (Labour Force Survey), 2006

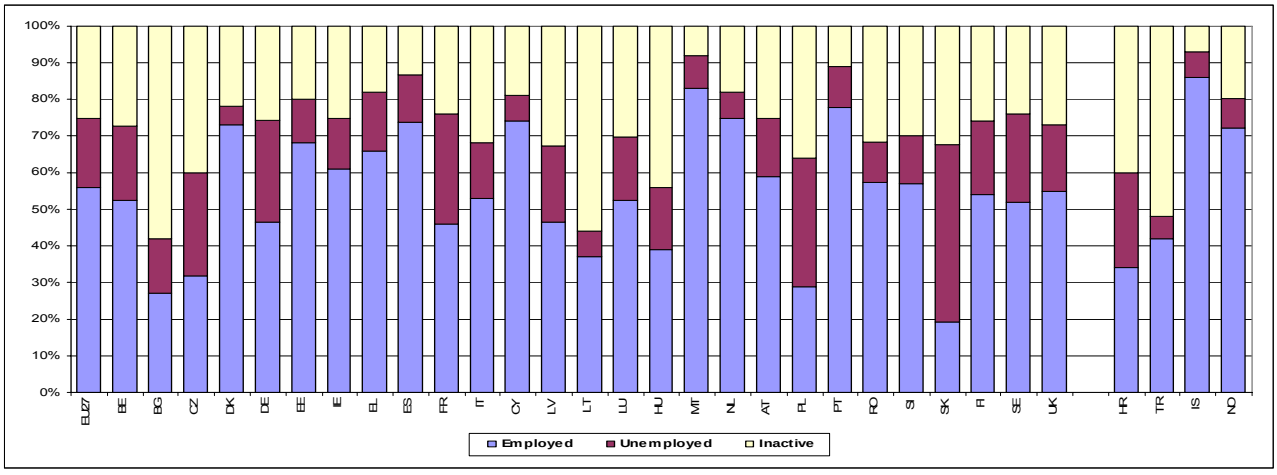
In contrast, the situation in some new Member States with very low percentages of early school leavers (Bulgaria, Czech Republic, Poland and Slovakia) is really marginalised — the employment of these young people is extremely low, ranging from only 19% in Slovakia to 32% in the Czech Republic.

However, the general unemployment rate in Slovakia is very high.

Participation of population with low educational attainment in lifelong learning

The phenomenon of early school leaving needs to be seen in a broader context of lifelong learning. There is evidence that the participation of adults in education and training tends to be proportional to the level of prior education. In 2006 only 3.7% of the population aged 25-64 with less than upper secondary education participated in education and training in the four weeks prior to the survey, which is less than one third of the average over all levels of education and less than one seventh of the figure for those with high educational attainment.

Chart 6.5 Early school leavers by employment status, 2006

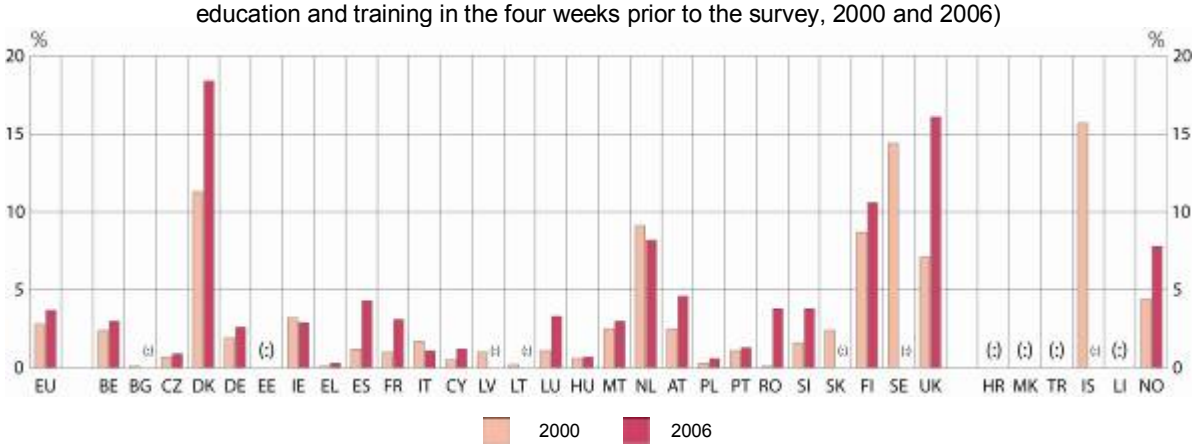


Data source: Eurostat (Labour Force Survey)

Countries with a high general participation rate in lifelong learning (Denmark, Finland and the UK) also record relatively high participation rates by people with low educational attainment. The results for these countries ranged from 10.6% in Finland to 18.4% in Denmark in 2006. Of the remaining countries, only the Netherlands, Austria and Spain, along with Norway, had a participation rate exceeding 4% in 2006.

Countries with a high general participation rate in lifelong learning have relatively narrow gaps in participation between those with high and with low prior educational attainment levels, while countries with low overall participation rates have wider gaps.

Chart 6.6: Participation in lifelong learning by adults with less than upper secondary education
(Percentage of population aged 25-64 with less than upper secondary education (ISCED levels 0-2) participating in education and training in the four weeks prior to the survey, 2000 and 2006)



	EU27	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT	LU	HU
2000	2.8	2.4	0.1	0.7	11.3	1.9	:	3.2	0.1	1.2	1.0	1.7	0.5	1.0	0.2	1.1	0.6
2006	3.7	3.0	:	0.9	18.4	2.6	:	2.9	0.3	4.3	3.1	1.1	1.2	:	:	3.3	0.7

	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK	HR	MK	TR	IS	LI	NO
2000	2.5	9.1	2.5	0.3	1.1	0.1	1.6	2.4	8.7	14.4	7.1	:	:	:	15.7	:	4.4
2006	3.0	8.2	4.6	(0.6)	1.3	(3.8)	(3.8)	:	10.6	:	16.1	:	:	:	:	:	7.8

Data source: Eurostat (EU-Labour Force Survey)

Additional notes:
Due to introduction of harmonised concepts and definitions in the survey, the information on education and training is not comparable with previous years:
- from 2003 in the cases of CZ, DK, EL, IE, CY, HU, NL, AT, SI, FI, SE and NO, from 2004 in the cases of BE, LT, IT, IS, MT, PL, PT, UK and RO and from 2005 in the case of ES due to wider coverage of the activities taught;
- from 2003 in SK due to restrictions for self-learning;
- 2000 in PT due to changes in the reference period (formerly one week preceding the survey);
- DE: 2004 data used for 2005.

Due to changes in the survey, data are not comparable with previous years in the cases of FI (from 2000), SE and BG (from 2001), IE, LV and LT (from 2002), HU (from 2003), LU (2003: annual average), DK, EL, FI and SE (first quarter from 2003), AT (second quarter from 2003; from 2004 continuous survey covering every week of the reference quarter).
The EU aggregates are provided from 1999, using the figures for the closest available year in cases where data for a given country are missing.

6.1.1 Pathways out of early school leaving

Consequently there has been a considerable effort on the part of governments to encourage young people to return to, or to remain in, formal education. However, a holistic and integrated approach by all stakeholders is necessary; the school (formal education) alone cannot solve this problem.

From the educational point of view, there is evidence that **flexible scheduling, smaller classes and individualised educational plans** as well as supportive teachers and guidance personnel might be helpful in this connection.

Another reaction of governments which was successful in many countries was the introduction of various academically less demanding **vocationally oriented training schemes** at upper secondary education level, in some countries covered by partial compulsory schooling organised in firms.

The concept of **Second Chance Education** has been developed to combat the social exclusion of – especially – young people who have left school without sufficient skills to get fully integrated in society and on the labour market. The aim is to reintegrate these people socially and professionally by offering them a wide range of education and training opportunities that are tailor-made to their individual needs.

These initiatives were especially successful in certain countries and in particular in relation to certain adult groups.[61]

The teaching methods, attitudes and other examples of good practice developed within second chance education might be useful and could be widely practised in formal education too as a preventive measure to avoid or reduce early school leaving, especially for pupils who feel ill at ease in school and are at risk of leaving prematurely.

In the USA similar approaches to low achieving and educationally demotivated young people have been applied in the so-called "Accelerated schools"[62] and Charter Schools[63]; but also the opportunity to obtain GED (General Education Diplomas) without regular and full attendance at school is well used by young people who left high school without completing their courses.

Alternative pathways
There are also many initiatives focused on alternative educational environments for students who do not feel well in regular classroom. They operate within existing schools or outside schools.

The alternative schools are usually smaller with a higher number of teachers per pupil and providing more personalised teaching, sometimes offering also some kind of vocational training.

Transfer to non-formal education
This alternative is relevant in particular in countries with a long tradition in providing this type of education not only to adults but also to youngsters. For example in Nordic countries, the percentage of young people who left formal education and are in some kind of non-formal education is much higher than in other European countries.

Prolongation of compulsory schooling or universal right to upper secondary education
Many governments tried to combat early school leaving by extending compulsory education to cover**,** in some cases, 1, 2 or even more years of upper secondary education. In some countries, so called partial compulsory education was introduced, which covers certain kinds of job related training (EURYDICE, 2005a). Recent initiatives of **the UK government** focusing on extending compulsory schooling, including penalties for not attending the courses, fall under this category of governmental initiatives.

In **Norway,** young people who have completed primary and lower secondary education, or the equivalent, have a right to three years' upper secondary education and training leading either to admission to higher education, to vocational qualifications or to basic skills (Norwegian Ministry of Education and Research, 2007)**.**

However, the most important factor positively influencing early school leaving, in particular at a local level, is how various sectors (for example employment, social affairs, formal and non-formal education), institutions, agencies and families work together and are able to reach all students at risk of early school leaving.

Plan to improve the situation of Roma in Slovakia

The Slovak government adopted on 26 March 2008 a strategy for improving the situation of the Roma community, subject to subsequent approval by Parliament. The objective is to create more favourable conditions for this marginalised community. The strategy in particular proposes compulsory pre-primary schooling for 5-year-olds, preparation of text-books in the Roma language, and very rigid conditions for sending Roma pupils to special schools.

(Strategy of the Ministry of Education, 2008)

Vocational education and training and early school leaving
VET is expected to provide a vital link between initial education and training. There is evidence that countries with high levels of participation in VET at upper secondary level usually have the lowest rates of early school leavers.

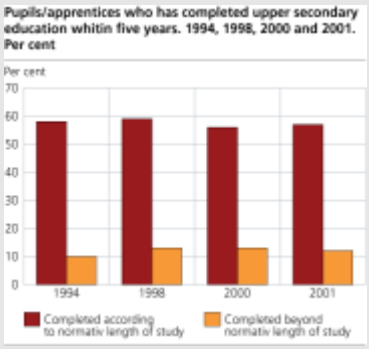
However, there are also many students, more than in the general stream of upper secondary education, who leave the vocational education and training system without completing the course, as shown by an example from Norway described in the box below.

School tracking and equity
There is evidence from large scale surveys (confirmed also by PISA 2006) that in countries with a larger number of distinct programme types, the socio-economic background of pupils tends to have a significantly greater impact on pupils' performance, suggesting stratification or tracking at the system level associated with segregation of pupils in various tracks based on their socio-economic background. Although there was no correlation between the age of selection and country mean performance, the share of variation in pupils' performance between schools was much higher in countries where the pupils are streamed at an earlier age (OECD, 2007b).

However, the age when the tracking or streaming occurs is important. Data show that this impact is greater for younger pupils than for upper secondary students.

Brunello and Chechi investigated school tracking at the level of (upper) secondary education, looking at such outcomes as literacy, drop out rates, college enrolment, employability and

Drop outs in Norway — a special situation in VET



In Norway, nearly 70% of students who were enrolled in upper secondary education for the first time in autumn 2001 completed general or vocational education within five years.[64]

18% of the students dropped out before or within the final year. 6% enrolled in final year but failed in examinations, and therefore did not complete upper secondary education. By 1 October 2006, 7% of the 2001 cohort were still in upper secondary education and had not completed general or vocational education.

Most drop-outs in vocational education and training

Table: Drop outs in general upper secondary education and in VET, in %

	General upper secondary education	Vocational upper secondary education
total	15	38
female	12	33
male	19	43

There are significant differences in the drop out rates of students in general and vocational upper secondary education. Nearly three out of ten students in VET who started upper secondary education for the first time in 2001 dropped out before or within the final year. In contrast only 6% of the students in general areas of study dropped out.

(Statistics Norway, 2006)

earnings. They found that in the countries investigated, the curricula offered in vocational schools seem to be more effective in promoting further training and adult competencies (the specialisation effect), thereby reducing the impact of parental background on these two outcomes (Brunello, G. and D. Chechi, 2007).

Therefore, reducing the extent of student tracking, either by raising the age of first selection or by reducing the number of educational programmes available, may be appropriate for reducing intergenerational effects in educational attainment between parents and their children, but may increase social exclusion for students with disadvantaged backgrounds.

However, there are no longitudinal studies at the international level to confirm the above findings.

Drop-outs in the USA

Respondents in the USA too reported various reasons why they left school before completing their courses:

► Nearly half (47%) said a major reason for dropping out was that classes were not interesting.
► Nearly 7 in 10 respondents (69%) said they were not motivated or inspired to work hard, 80% did one hour or less of homework each day in high school, two-thirds would have worked harder if more was demanded of them (higher academic standards and more studying and homework), and 70% were confident they could have graduated if they had tried.
► Many students gave personal reasons for leaving school. A third (32%) said they had to get a job and make money; 26% said they became a parent; and 22% said they had to care for a family member.
► It is clear that some dropouts, but not the majority, leave school because of significant academic challenges.
► 35% said that "failing in school" was a major factor for dropping out.
► 45% said they started high school poorly prepared by their earlier schooling.
► 32% were required to repeat a grade before dropping out and 29% expressed significant doubts that they could have met their high school's requirements for graduation even if they had put in the necessary effort.

(Bridgeland, J. M., Dilulio, J J. and Morison, K.B. (2006) The Silent Epidemic Performance of High School Dropouts)

6.1.2 Young people not in education, employment or training

At present, in many countries there are growing concerns about the group of young people aged 16 to 18 years who are neither in education or training nor in employment — the "Neet" group.

According to recent data there were 206 000 Neets, aged 16 to 18, in England (2006). Other sources estimate that 10% of all 16 to 18 year olds in England are Neets (Statistical First Release (SFR), 2007).

However, data also show that the Neet group in England is not static but rather a rapidly changing

group — most young people do not spend long periods as Neets. It was estimated that only around 1% of 16-18 year olds are 'long term Neet' — that is, not doing anything at each of the three survey points at the ages of 16, 17 and 18 years old.

Internationally, there is little evidence about this population group. Some research has been done and governmental strategies focused on "Neets" have been developed in particular in the UK and Japan. Government sources in Japan have estimated that there are some 640 000 Neets in Japan (Ken, Y-N., 2006) but also the 2.5 million so-called FREETERS, covering young people not permanently on the labour market, are viewed as a risk group.

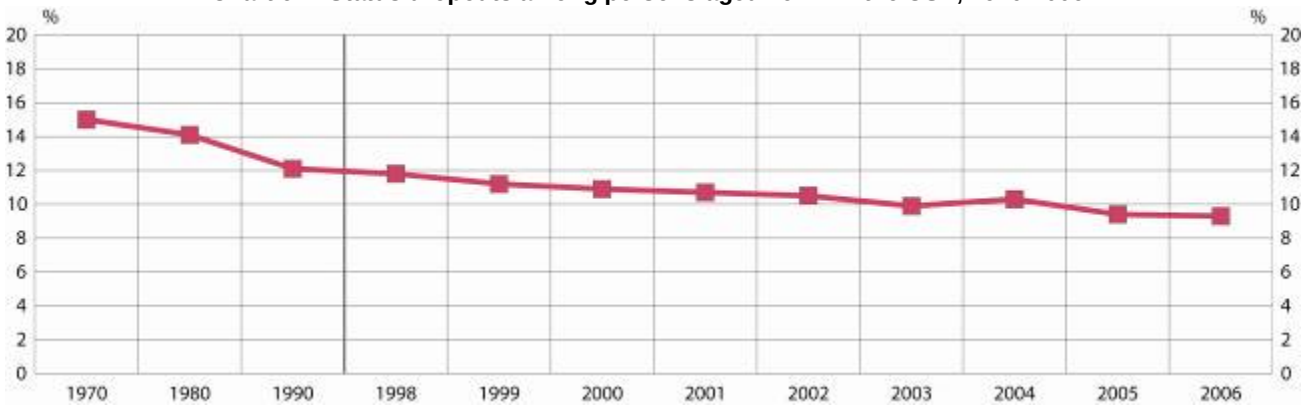
Among other characteristics of this diverse group of Neets, persistent absentees are seven times more likely to be doing nothing at age 16 than those who have had regular school attendance. Also those with learning difficulties are twice as likely to be Neets.

The Welsh government set up in 2006 a new strategy and a quantitative target for reducing the number of Neets and increasing the percentage of 16 to 18 year olds in education, employment or training to 93% by 2010.[65]

6.1.3 Early school leavers in the USA

Early school leaving is also on the policy agenda outside Europe.

Chart 6.7: Status dropouts among persons aged 16-24 in the USA, 1970-2006



Year	1970	1980	1990	1998	1999	2000	2001	2002	2003	2004	2005	2006
%	15.0	14.1	12.1	11.8	11.2	10.9	10.7	10.5	9.9	10.3	9.4	9.3

Data source: Digest of Education Statistics for data from 1970 to 2001, Youth Indicators for data from 2002 and 2006, both published by the US Department of Education

It is not possible to compare directly the data on early school leavers between the EU and the USA since different definitions are used, but national data on the situation in these countries can be useful.

In the USA the concept of early school leaving, more popularly known as "dropping out", is based on several definitions of dropout rates and indicators used by official authorities, among which the "status dropout" rate seems to be most comparable with the EU benchmark.[66]

According to official US data, 10.3% of 16- to 24-year-olds in the USA had no upper secondary education and were not enrolled in a high school programme ("status dropouts") in 2004.[67]

Also in the USA, dropping out is more of a problem among boys than girls (10.3% and 8.3% respectively) and of persons from certain ethnic backgrounds (22.1% for persons of Hispanic origin and 10.7% for black persons of non-Hispanic origin, in comparison with 5.8% for white persons of non-Hispanic origin) (National Center for Education Statistics, 2007).

Drop-outs in England

In England, youngsters who were likely to drop out were pupils with the following characteristics:

► **Angry young rebels.** Against the system. Moderate to low ability. Very hostile to authority and hence teachers. Disruptive in class. Although hostile to school, they yearn for respect. They can be attracted to college courses that offer opportunities to succeed.

► **Quitters.** Believe they have tried and failed. Moderate to low ability. Any reaction from hostility to passivity.

► **Rebels without a cause.** Impatient to make their own way in the world of work. Believe their personality will be their key to success. High to moderate ability. School is boring, but this group is not hostile to teachers.

► **Cool Dudes.** Life is predicated on having fun, and school gets in the way of this. High or moderate ability, but underachieving. Disengaged, but not hostile. Seen as lazy by teachers.

► **Hedgers.** Disaffected but in touch. Waiting to commit until they get their GCSE results. Moderate to low ability. Generally positive.

► **Settlers.** Disaffected but in touch. Have chosen an undemanding life. Sit between "Cool Dudes" and "Quitters". Moderate to low ability. Passive.

► **Escapists.** Dream of being "discovered". Low ability. Disengaged and disconnected.

► **Strugglers.** Want to do well, have unrealistic aspirations, but have not given up. Low ability. Positive and eager to get on.

(BBC news, 5 November 2007)

It took the USA more than 30 years to reduce the dropout rate by about 6 percentage points (from 15% in 1970 to 9.3% in 2006). This could be compared with the EU objective of reducing the share of early school leavers by about 7 percentage points over a period of 10 years (from 2000 to 2010).

6.2 Special needs education

In recent decades, the European Union has made some notable developments in the areas of mainstreaming and inclusion of students with special educational needs into regular classroom settings. The Helios programme in 1988 and the Resolution on the integration of children and young people with disabilities into ordinary systems of education in 1990 represent positive moves in this vein. The goal of inclusive education forms part both of the Charter of Luxembourg (EC, 1996) and the Amsterdam Treaty (EU, 1997).

Indeed, these programmes laid the foundation for the European Year of People with Disabilities in 2003 and the adoption of subsequent Council Resolutions: the Resolution on improving access for people with disabilities to the knowledge-based society, the Council Resolution on equal opportunities for pupils and students with disabilities in education and training; and the Resolution on accessibility of cultural infrastructure and cultural activities for people with disabilities.

With the signing of the United Nations **Convention on Rights of People with Disabilities** (2006) EU Member States recognise the right of persons with disabilities to education.[68]

Most importantly, all European countries have ratified the UNESCO **Salamanca Statement and Framework for Action in Special Needs Education** (1994). This collective statement is a major focal point for special needs education work in Europe — it is still a keystone in the conceptual framework of many countries' policies. The extract from the statement in the box below is used repeatedly as a guiding principle in policy level debates:

UNESCO Salamanca Statement and Framework for Action in Special Needs Education (1994)

"Regular schools with an inclusive orientation are the most effective means of combating discriminatory attitudes, creating welcoming communities, building an inclusive society and achieving education for all; moreover, they provide an effective education to the majority of children and improve the efficiency and ultimately the cost-effectiveness of the entire education system."

All European countries agree that the key principles in the Salamanca Statement of equal opportunities in terms of genuine access to learning experiences that heed individual differences and quality education for all focused on personal strengths rather than weaknesses, are the same principles that should underpin all education policies — not just those dealing specifically with special needs education.

These principles are echoed in the 2007 **Lisbon Declaration — Young People's Views on Inclusive Education** (European Agency for Development in Special Needs Education, 2007), which outlines a number of proposals agreed upon by young people with special educational needs from 29 countries attending secondary, vocational and higher education. The declaration sets out the young people's views on their rights, needs, the

challenges they face and recommendations for inclusive education.

The domain of Special Needs Education was stressed within the Framework on Indicators and Benchmarks and the Council Conclusions of May 2007,that calls for an indicator on Special education needs as one of sixteen core indicators and benchmarks which should be used for monitoring of progress in the field of education and training (Council, 25 May 2007).

Data on education of pupils with special education needs — problems of definition

Policy makers, practitioners, researchers and the wider community do not always agree on who does and does not have a disability, impairment or special need. The reason for this is that a person's special need arises essentially from two possible sources — factors within persons themselves (some form of impairment) and factors within the environment (the role of the environment in either minimising the impact or exacerbating it). The International Classification of Functioning develops this concept at the international level (World Health Organisation, 2001). It provides a standard framework for considering disability and how environmental factors interact with different functional capabilities of people with special needs.

International Standard Classification of Education — ISCED. UNESCO, Paris(1997)

"… the concept of 'children with special educational needs' extends beyond those who may be included in handicapped categories to cover those who are failing in school for a wide variety of other reasons that are known to be likely to impede a child's optimal progress. Whether or not this more broadly defined group of children are in need of additional support depends on the extent to which schools need to adapt their curriculum, teaching and organisation and/or to provide additional human or material resources so as to stimulate efficient and effective learning for these pupils."

The ISCED (UNESCO, 1997) discussion of special educational needs expands on this by highlighting the fact that "special educational needs" is a broader term than disability; it covers more 'types' of educational need — for example social, emotional and behavioural difficulties — and is clearly a context-bound definition.

Special Educational Needs is a 'construct' that countries define within their legislation and then go on to identify, assess and make provision for in different ways. There are no accepted definitions of disability and/or special needs available to use comparatively across European countries, and whilst some countries are considering incorporating ISCED definitions within the legislation, no countries use more specific externally generated definitions within their educational legislation or policymaking. The education systems (policies and practice) in this area have evolved over time, within very specific contexts, and are therefore highly individual (Watkins, A., 2007). For most countries, policies have a clear focus on special needs 'provision' rather than solely 'in learner' factors, and whilst there is a movement in all countries away from medically based models of definition, assessment and provision and towards educational and 'integrationist' approaches (Watkins, A., 2007), there is no agreement on who should receive what provision.

In this section of the chapter, we will analyse data on education of pupils and students with special educational needs based on two international data sources which use different concepts.

The concept used by the European Agency for Development in Special Needs Education is based on agreement of countries on a 'bottom-up' approach which uses the country's own legal definition of special educational needs as the basis for data collection.[69]

The OECD concept is based on additional resources[70] of various kinds available to pupils and students who have particular difficulties, for a variety of reasons, with making progress in their schooling, whether or not they fell within the national definition of special educational needs distinguishing three categories described later in section 6.2.2.

6.2.1 Education of pupils with special education needs in inclusive or segregated settings

Data collected by the Agency enable the percentage of pupils with SEN educated in segregated settings to be analysed.[71] Data on pupils with SEN in segregated settings are comparable across countries, and these quantitative data alone can be used to analyse trends in provision and movements towards inclusion.

However, they cannot provide any indication of the quality, suitability or appropriateness of the education provided for pupils with SEN. It should be clearly recognised that other, qualitative indicators must be considered in relation to statistical data if trends in provision and movement towards inclusion are to be fully understood (Kyriazopoulou, M., in press).

All European countries are also able to provide some data on the numbers of pupils who are placed in inclusive settings. However, these are considered by Agency member countries to be less reliable and comparable.

Pupils recognised as having special education needs

From data collected in 2008[72] and 2006[73] by the European Agency for Development in Special Needs Education, the percentages of pupils recognised as having special educational needs [74] in all educational settings as well as the percentages of pupils with special educational needs in segregated setting tell us that across all countries for which data are available, at present 3.6% of pupils are officially recognised as having some form of special educational needs that requires additional support. This percentage has not changed since the 2006 data collection. There is a considerable difference between countries in the range of percentages of pupils identified as having special educational needs — from 19% (Estonia and Iceland) to less than 2% (Italy, Ireland, Sweden and Greece).

Table 6.3: Percentage of pupils in compulsory education recognised as having special education needs (in all educational settings), data collections in 2006 and 2008

	2006	2008
EU	3.6	3.6
Belgium (Flemish speaking community)	5.6	5.8
Belgium (French speaking community)	4.3	4.4
Bulgaria	2.0	:
Czech Republic	9.3	8.6
Denmark	2.7	3.2
Germany	5.6	5.6
Estonia	18.4	19.0
Ireland	0.9	1.0
Greece	1.7	1.9
Spain	2.7	2.6
France	2.6	2.7
Italy	0.02	0.01
Cyprus	3.5	4.3
Latvia	4.3	4.0
Lithuania	11.1	11.4
Luxembourg	2.1	2.3
Hungary	7.0	6.0
Malta	3.7	3.8
Netherlands	3.1	3.7
Austria	3.6	4.1
Poland	3.1	2.9
Portugal	4.4	3.7
Romania	:	:
Slovenia	:	5.4
Slovakia	:	:
Finland	6.7	7.7
Sweden	1.5	1.5
United Kingdom(England)	2.9	2.8
United Kingdom(Scotland)	:	5.5
United Kingdom(Wales)	:	3.5
Croatia	:	:
FYR Macedonia	:	:
Turkey	:	:
Norway	5.6	5.7
Iceland	2.0	19.7
Liechtenstein	:	:

Notes:
DK: data refers to pupils with the most serious needs in special classes only
Iceland: break in time series because of different procedure being employed
UK (England) and UK (Wales): data refers to pupils with statements of special education needs only
EU average was calculated as a percentage of pupils with special educational needs of the whole school population in all European countries for which data are available.

If the data collected by the Agency in 2006 and 2008 are compared, then most countries have almost no change in the overall percentage of pupils identified as having special educational needs. Generally, the percentage of pupils in compulsory education recognised as having special educational needs increased in 13 Member States and decreased in 8 (Czech Republic, Spain, Italy, Latvia, Hungary, Poland, Portugal and the UK (England). A few countries show around a 0.5% increase or decrease — only Finland with a 1.1 percentage points increase and Hungary and Czech Republic with decrease by 1 percentage point and 0.7 percentage points respectively show greater variations.

Segregated settings

There is a growing consensus that equity considerations require that, wherever possible, pupils with special educational needs be educated in regular, mainstream classrooms rather than in separate institutions. This consensus stems from the realisation that the educational and social experiences that special schools and mainstream schools provide are often different; such differences often translate into inequities, especially in terms of pupils' access to post-compulsory education and the labour market (OECD, 2003a, Chapter 1, European Agency, 2006)[75].

As shown in Chart 6.8, at present 2% of the total population in compulsory education within the EU are taught in special settings because of their special education needs.[76] No quantifiable progress was made towards more inclusive policies for educating pupils with special needs between 1999-2001 and 2006-2008 (down only by 0.1 percentage point) although changes in national legislation and policy for SEN do highlight

Chart 6.8: Percentage of pupils in compulsory education with special needs in segregated settings, 1999 – 2008

1999	2008	Country
2.1	2.0	EU
1.9	:	Belgium (DE)
4.9	5.1	Belgium (FL)
4.0	4.4	Belgium (FR)
2.1	1.2	Bulgaria
4.9	4.5	Czech Republic
1.5	2.9	Denmark
4.6	4.9	Germany
3.4	4.8	Estonia
1.8	1.0	Ireland
0.3	0.5	Greece
0.4	0.6	Spain
2.6	1.9	France
0.5	0.0	Italy
0.4	0.2	Cyprus
3.2	4.0	Latvia
1.1	1.2	Lithuania
1.0	1.1	Luxembourg
4.0	3.0	Hungary
:	0.4	Malta
1.8	2.4	Netherlands
1.6	2.0	Austria
2.0	1.6	Poland
0.3	0.3	Portugal
1.4	:	Romania
1.9	1.6	Slovenia
3.2	:	Slovakia
3.7	3.9	Finland
1.3	0.1	Sweden
1.1	1.1	UK (England)
:	1.3	UK (Scotland)
:	1.5	UK (Wales)
:	:	Croatia
:	:	FYR Macedonia
:	:	Turkey
0.9	0.3	Iceland
:	:	Liechtenstein
0.5	0.3	Norway

Data source: European Agency for Development in Special Needs Education and Eurydice for 1999-2001; European Agency for Development in Special Needs Education for 2004-2006.

Additional note: EU average calculated as arithmetic average of EU Member States for which data are available.
BE, IR, LU, NL, IS –data for 2006, UK only England, in Scotland 1.3%

Notes referring only to 2008 data:
1999: Refers to school years 1999/2000 and 2000/2001
2008: Refers to school years 2005/2006, 2006/2007 and 2007/2008
DK — *Data refer to pupils with the most serious needs in special classes only*
SE- *Data refer to pupils in special schools and classes only*
UK- *Data refer to pupils with statements of SEN only; 2006 -2008 data refers to the UK(England), UK (Scotland) and UK Wales)*

possible qualitative moves towards inclusion that may have a long term quantifiable impact. However, the situation varies between individual countries. About 4% to 5% of all pupils in compulsory education are taught in segregated settings (special schools or special classes) in Belgium (Flemish and French speaking communities), the Czech Republic, Estonia, Germany, Finland and Latvia, whereas the figure is no more than 0.5% in Cyprus, Greece, Malta, Portugal and Sweden, along with Iceland and Norway, and in Italy it is about zero.

Given the non-comparability of data (i.e. using present data, the same country sample cannot be compared) it is not possible to identify exact trend information across countries. However, using the available data sets for individual countries, there would appear to be no real trend either upwards or downwards in the percentage of pupils in segregated provision. Very little change in the percentage of pupils placed in segregated settings is observable in individual countries.

Inclusive settings

As explained above, some countries are able to provide data on pupils educated in inclusive settings, but these depend very much on the national definition of SEN — pupils receiving support in inclusive settings may or may not be included in official figures.

Some countries — Estonia, Iceland and Lithuania — officially count all pupils who receive any form of support. This means they identify up to 19% of pupils as having some form of special education needs. Other countries only count pupils who receive the most intensive forms of support in mainstream classes at all. Denmark and Sweden are clear examples of such an approach although they estimate that well over 10% of pupils in mainstream settings do receive support; they are just not counted in figures.

Other countries have a 'staged' approach to provision — for example Finland and the UK (England) — where different 'levels' of support are considered and counted differently. If all categories of support for these countries were included then over 15% of pupils in mainstream settings would be recognised as receiving support for SEN in Finland and over 16% in UK (England).

Theoretically, as countries aim for inclusive schooling, reporting on pupils in inclusive settings will become harder and harder as their needs becoming increasingly met in 'ordinary' settings rather than by 'special' services requiring pupils to be clearly identified and/or categorised.

This change in policy emphasis away from individual needs, towards enabling the mainstream educational system to accommodate all pupils' needs is a clear aim for most countries. Countries are however at different stages of this movement and such moves are not always clearly evidenced by 'hard data' on pupil placements. Often, qualitative changes in policy and or provision are implemented long before a significant impact on pupil placements is obvious.

6.2.2 Education of pupils with special education needs depending on the type of difficulty

The data collected by the OECD on pupils with special education needs make it possible to analyse EU Member States' policies from other angles. The OECD concept is based on additional resources[77] of various kinds available to pupils who have particular difficulties, for a variety of reasons, with gaining access to the standard curriculum, whether or not they fall within the national definition of special educational needs. This framework draws a distinction between three broad cross-national categories based on perceived causes of educational failure:

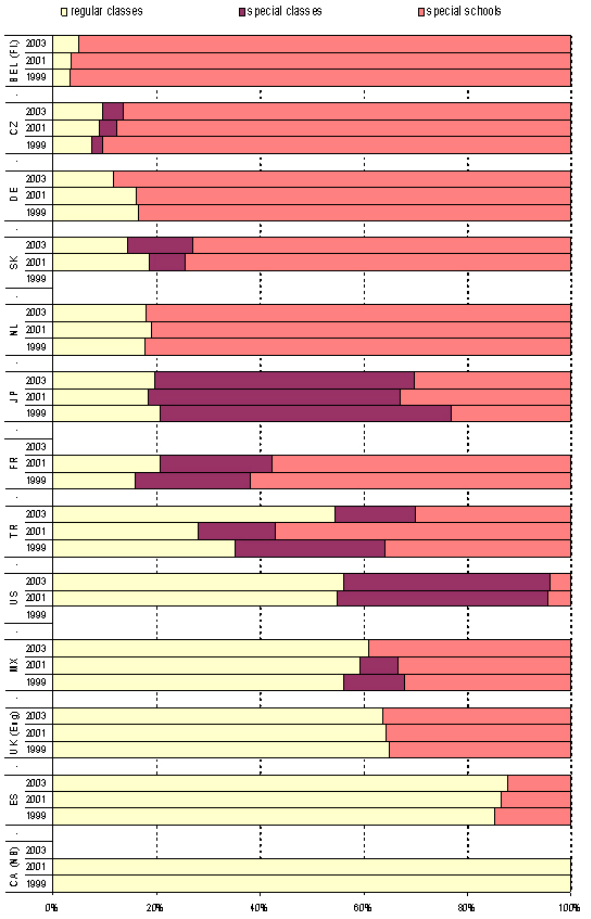
1. the "disabilities" category: pupils who have clear organic reasons[78] for their difficulties in education (Category A);
2. the "difficulties" category: pupils with emotional and behavioural difficulties or specific difficulties in learning (Category B), and the educational need arises from problems in interaction between the pupil or student and the educational context;
3. the "disadvantages" category: pupils in need of additional educational resources to compensate for problems due to aspects of their socio-economic, cultural and/or linguistic background (Category C) (OECD, 2005b).

Chart 6.9 documents the settings in which pupils with disabilities (Category A) and learning difficulties (Category B) are educated; the differences they reflect reveal potential inequities of provision within and among countries that could result in different and/or inequitable educational and social experiences for some pupils with disabilities and difficulties.

Chart shows the variation in the distribution of pupils in categories A and B educated in special schools, special classes, and regular classes in 1999, 2001, 2003. It is clear that there is substantial variation between countries in the extent to which pupils in these categories are in regular schools.

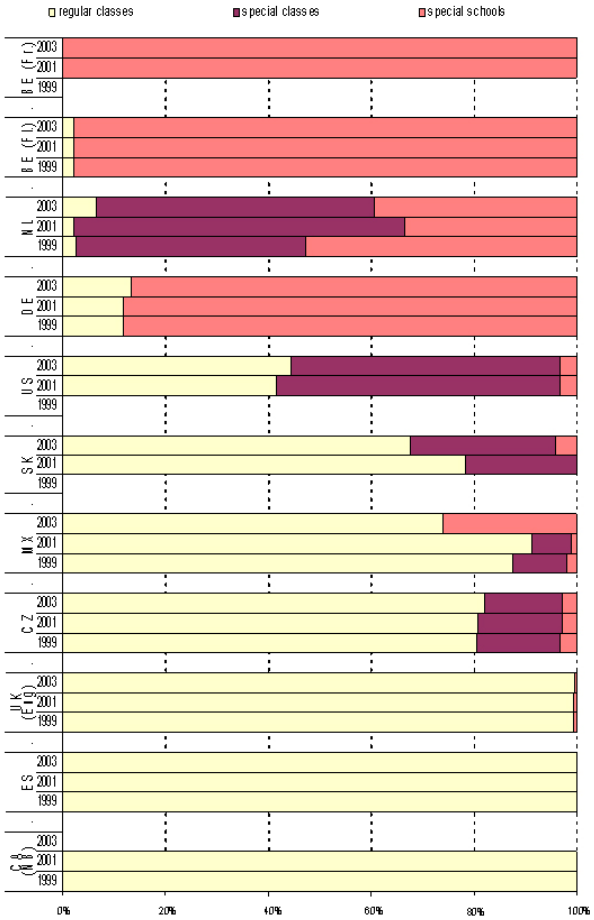
Chart 6.9: Distribution of pupils with special education needs according to categories of needs (1999-2003)

Distribution of pupils with disabilities (Category A) receiving additional resources over the period of compulsory education, by location



Source: OECD (SENDDD Database)
Additional notes:
Special classes: Not applicable: Belgium (Fl.), Netherlands, Mexico 2003
Included in special schools: Germany, Spain
Included in regular classes: Finland, United Kingdom

Distribution of pupils with learning difficulties (category B) receiving additional resources over the period of compulsory education, by location



Source: OECD (SENDDD Database)
Additional notes:
Regular classes: Not applicable: Belgium (Fr.), France
Special classes: Not applicable: Belgium (Fl.), Belgium (Fr.), Spain
Special classes: included in regular classes in Finland, United Kingdom
Special classes: included in special schools in Germany
Special schools: Not applicable: Spain

There are also some substantial differences within countries with regard to pupils in category A and category B.

Belgium (Fl.), the Czech Republic, Germany, the Slovak Republic and the Netherlands have high percentages of category A pupils in special schools and classes. Belgium (Fl. And Fr.) and Germany also educate high proportions of category B pupils in special schools and classes. However, policies in these countries contrast with the Czech Republic and the Slovak Republic, where most category B pupils are educated in regular schools. Similar but less extreme results are apparent in Spain and the UK.

Different national policies concerning inclusion provide an explanation for these differences; policies may be influenced by features of regular schools and their curriculum, and training and attitudes of teachers, which may facilitate or obstruct inclusion practices.

Furthermore, there may be features of special schools that are viewed by parents and educators as desirable (OECD, 2004a and 2005b). Also, different cultural and societal views may influence the choice of parents and educators to place pupils in mainstream or special schools. Another important factor is funding mechanisms.

The trend analysis in Chart 6.9 shows that overall there have been few changes over time in the distribution of pupils with disabilities (Category A) receiving additional resources over the period of compulsory education vis-à-vis in the settings

where they are educated. The majority of countries (Belgium Fl., the Czech Republic, France, Mexico, Spain, Turkey and the United States) have shown a slight trend towards more inclusive provision, away from special schools and towards special or regular classes.

The same changes over the time hold good in the distribution of pupils with difficulties (Category B) receiving additional resources over the period of compulsory education vis-à-vis in the settings where they are educated.

Another group which is targeted by countries' provisions are pupils with social and socioeconomic disadvantages. When additional resources are provided to pupils with social disadvantages—those belonging to category C—they are usually addressed at ethnic minorities and migrants and consist of special courses for language learning and preparation for compulsory schooling (preparatory classes before primary education). In some countries these provisions fall under the definition of special education needs. In other countries, this is not the case (OECD, 2005b).

6. 3 Gender issue in education and training

The Treaty of the European Union obliges Member States to promote equality between women and men. Over the years, the principle of gender equality has been reinforced by specific legislation. In the 1990s, the policy of gender mainstreaming was introduced. This new strategy strived to include gender equality issues in all activities — in the "mainstream".

A cornerstone of the EU gender equality programme is that women and men must have the same opportunities to support themselves and

attain financial independence. However, from the initial initiatives focused on the principle of equal pay for equal work, emphasis has now shifted towards the equality of men and women outside the field of employment. More and more attention is now paid to gender issues in the field of education and training.

Gender and key competences
Because primary and lower secondary schooling is compulsory, formal equal access to school education at this level is not an issue. However, many dimensions behind this situation are of critical importance, such as access to a quality compulsory education or performance at school. As regards academic subjects, the performance of female and male pupils in individual subjects is different.

Reading
Generally girls outperform boys in reading. PISA 2006 has shown that in all OECD countries females perform better in reading than males.

In 12 OECD countries the gap was at least 50 score points. In Greece and Finland females were 57 and 51 points ahead respectively, and the gap was between 50 and 66 points in Bulgaria, Slovenia, Lithuania and Latvia too.

The smallest gender gaps among OECD countries were found in the Netherlands (24 points) and the UK (29 points).

Mathematics
On the other hand, males still perform much better than females in Mathematics. In 35 of 57 countries participating in PISA 2006, males performed significantly ahead of females. In 21 countries there was no significant difference and only in one country — Qatar — did females outperform men.

Overall gender differences were less than a third as large as for reading – 11 points on average across OECD countries – and this has not changed since 2003. Of the EU countries, males outperformed females by more than 20 points only in Austria. Males also averaged 12 to 20 points more in Germany, the UK, Italy, Luxembourg, Portugal, the Slovak Republic and the Netherlands.

Science
Males and females in PISA 2006 showed no difference in average science performance in the majority of countries. In 12 countries, on average, females outperformed males, while males outperformed females in 8 countries. Most of these differences were small. In no OECD country was the gender difference larger than 12 points on the science scale. This is different from reading and mathematics, where significant gender differences were observed.

However, similarities in average performance mask certain gender differences: In most countries, females were stronger in *identifying scientific issues,* while males were stronger at *explaining phenomena scientifically.* Males performed substantially better than females when answering physics questions. Last but not least, in most countries more females attend higher

performing, academically oriented tracks and schools than do males.

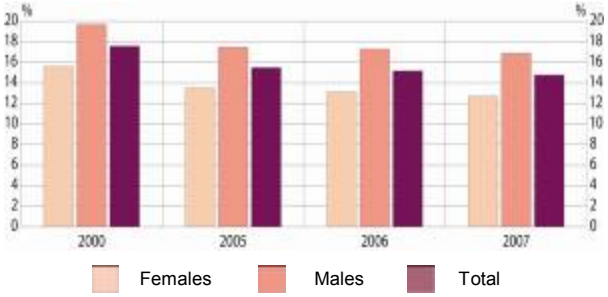
As a result of this, in many countries gender differences in science were substantial within schools or programmes, even if they appeared small overall.

PISA data show that countries were between 2000 and 2006 more successful in reducing the gap in Mathematics and increasing girls' skills in Mathematics than in Reading, where the gap between girls and boys, to the disadvantage of boys, remains very wide (38 points in PISA 2006).

More male than female early school leavers

Within the EU, early school leaving is more of a male phenomenon. In 2007, there were 12.7% female and 16.9% male early school leavers. The gap is stable, there being only a slight decrease between 2000 and 2007.

Chart 6.10: Percentage of early school leavers by gender - 2000, 2005, 2006 and 2007



	2000	2005	2006	2007
Total	17.6	15.5	15.2	14.8
Females	15.6	13.5	13.1	12.7
Males	19.7	17.5	17.2	16.9

Data source: Eurostat (Labour Force Survey),2000-2007

There are significant intergenerational differences in the ratio of females and males with only lower secondary education attainment (ISCED 2) and below. While in the younger generation (less than 24 years old) the males in 2004 accounted for 58% in contrast to 42% females, the opposite was true of the older generation (more than 24 years old, potential parents of present school population): females represented 57% in contrast to 43% males.

Thus in the majority of EU countries the gender gap increased in comparison with "older" (more than 24 years old) early school leavers, mostly in favour of the female population, except for Luxembourg where the majority of the "younger" (less than 24 years old) early school leavers were and still are women. The Czech Republic shows a narrowing gender gap but has a higher number of female early school leavers among the younger generation.

A similar situation exists in the USA. In 2006, there were 10.3% dropouts among men and only 8.3% among women.[79]

Boys overrepresented in special needs education

The gender data which have been collected by the OECD within the SENDDD project over the past 10 years has shown remarkable consistency as regards gender (OECD, 2007c).

In nearly all countries the ratio of boys to girls across all ISCED levels identified as pupils with special education needs is close to 60:40.

For those with learning difficulties, the difference is even greater, being closer to a two-thirds/one-third split. On the other hand, for socio-economically disadvantaged pupils this ratio is 50 to 50, apart from pupils in this category being educated in special schools. For these pupils with SEN the ratio is greater than 2:1.

Because the OECD concept of identifying pupils with SEN is based on the allocation of additional resources to these pupils, boys are in effect receiving a greater share of available resources than girls.

There are three reasons that might explain this situation:

- genetic or biological differences
- different behaviour pattern
- various biases leading to a situation where boys are more likely than girls to be identified as in need of additional support. Usually girls show behaviour patterns that are more closely matched to the expectations of teachers.

However, further investigations would be useful about gender issues in special needs education.

More women in higher education

Over the last few decades, women in the EU have closed the education gap and even surpassed men in terms of numbers of university graduates. Women are more likely than men to go on to university education and to graduate. But there are still large differences in the fields of study chosen by women and men. Men greatly outnumber women in science and engineering, while women dominate in arts and humanities. There remain

education sectors seen as "female", which normally lead to lower paid jobs.

More male Mathematics, Science and Technology graduates and students

However, only little progress has been made on reducing the gender imbalance among MST graduates. The proportion of **female graduates** has increased slightly, from 30.7% in 2000 to 31.6% in 2006 (See also Chapter 4).

Bulgaria and Estonia, have the highest share of female graduates (>40%) while the biggest increases since 2000 have been in Estonia, Cyprus, Hungary and Slovakia. At EU level the female share of MST graduates increased slightly, from 30.7 % in 2000 to 31.6% in 2006. Since there was little change in the share of female MST students over the period 2000-2006 no significant improvements in the gender balance in MST graduates (who will be drawn from these students) are likely in the next few years. However, the share of women amongst MST students is lower than amongst MST graduates, implying a lower dropout rate for women.

Gender imbalance is especially pronounced in engineering (18% female graduates) and computing (20%) and, to a lesser extent, in architecture and building (36%), whereas in mathematics and statistics gender balance has existed since 2000. On the other hand, in the field of life sciences women clearly predominate 62%).

At EU level the female share of MST graduates increased slightly from 30.4% in 2000 to 31.1% in 2003. Since the share of female MST students remained stable in the period 2000-2003 significant improvements of the gender balance are unlikely in the coming years. However, it is notable that the share of women is lower as regards MST students than in terms of graduates, implying a lower drop out rate for women.

Further analysis and research necessary

The problem of gender differences in education and training is more complex than would seem to be the case. It is necessary to analyse more deeply what is happening in schools in relation to boys; however, it would be too simplistic to draw a conclusion from the above and to concentrate only on underachievement among boys in the future; always some girls are low achievers, just like some boys are best performers at school.

Some researchers conclude that policy makers should focus on the 'gender jigsaw' rather than the 'gender gap', asking 'which boys? and which girls?' are underachieving. Males and females are not homogenous groups. Instead of stereotyped attitudes, expectations and behaviour, we need a coordinated multi-pronged approach to tackling gender differences in schools, one that addresses curricular issues, peer pressures and cultural attitudes and expectations (Tinklin, T. et al., 2003 and Collins, C et al., 2000).

We also need to pay attention to the interactions between gender, social class and ethnic background. Despite all the progress, females continue to be disadvantaged in various areas of education and training. For example, female early school leavers might have diverse difficulties and might be in a more difficult situation than male early school leavers.

6.4 Children at risk and intergenerational transmission of disadvantages

One of the major challenges facing European education and training systems is to compensate for any differences in pupils' backgrounds which could place certain groups at a disadvantage.

In many countries at present characteristics such as social origin, poverty, ethnicity, age and gender significantly affect individuals' opportunity of attaining higher levels of education and degrees.

There is evidence that universal access to high-quality pre-primary education can be particularly important for reducing inequalities caused by such factors as the educational attainment of parents, the difference between the language spoken at home and the language of instruction at school, and the socio-economic status of parents.

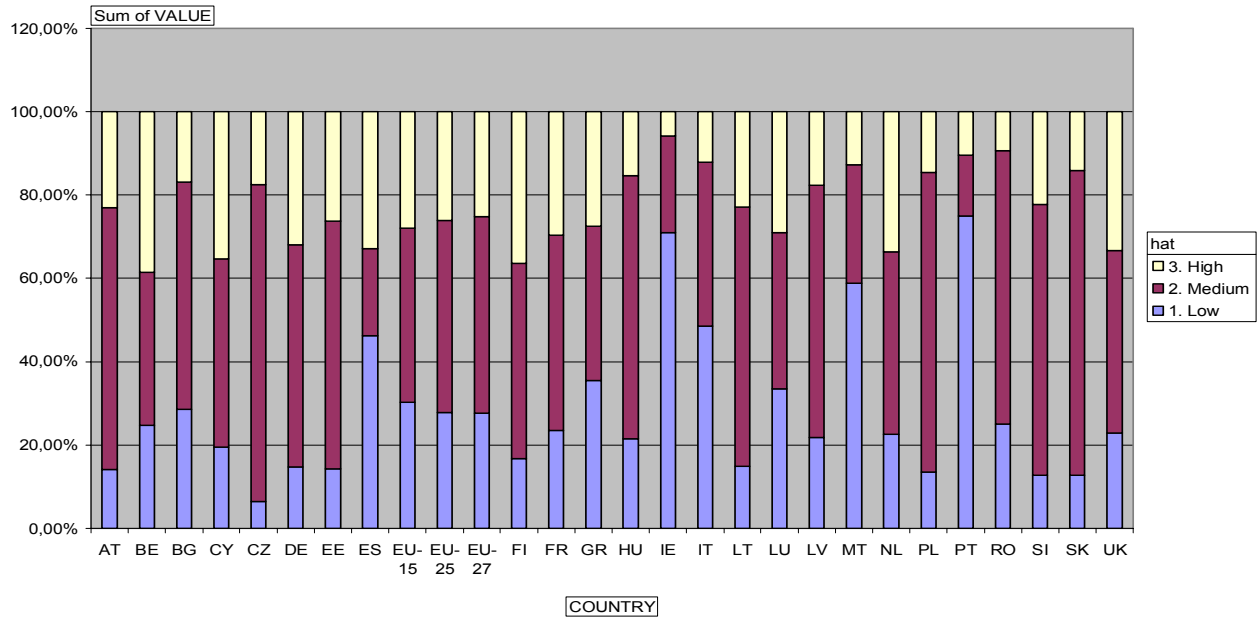
However, at present (2005) and as analysed in Chapter 1, every eighth four-year-old child is not enrolled in pre-primary education, including a majority of those in greatest need, such as children with a migrant background or from families with a low socio-economic status.

Low educational level of parents

A supportive family environment can help to improve pupils' performance at school and their attitudes to education later in the life. Parents can read to young children and help them with homework. Parental education is therefore important for children's educational performance. The data from large-scale international surveys show positive, statistically significant

relationships in the vast majority of countries between both mothers' and fathers' educational attainment on the one hand and pupils' performance in mathematics, reading and science on the other. Chart 6.11 shows the ratio of children at risk of failure in education and training later in life because of low education level of parents, as illustrated by the highest education level achieved by the father.

Chart 6.11 Children aged 3 to 6 by educational level of parents, 2006



	EU27	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT	LU
Low	18.96	18.08	23.80	5.66	:	13.45	8.98	:	20.13	30.91	15.09	30.54	7.44	9.37	9.69	23.96
Medium	47.75	34.07	46.72	73.41	:	53.51	50.02	:	42.23	22.16	42.06	50.35	42.82	61.83	53.38	39.63
High	33.29	47.85	29.48	20.93	:	33.04	41.00	:	37.64	46.92	42.85	19.12	49.75	28.80	36.93	36.42

	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK	HR	TR
Low	16.30	50.97	12.42	10.57	5.76	59.45	20.99	4.94	9.72	4.30	:	19.32	9.20	70.25
Medium	61.44	30.32	45.13	61.42	70.25	21.29	67.50	57.03	71.94	37.94	:	43.21	69.37	21.17
High	22.26	18.71	42.45	24.00	19.26	11.51	38.03	18.34	57.76	:	37.47	21.42	8.58	

Data source: Eurostat (Labour Force Survey), 2006

In five EU countries — Spain, Ireland, Italy, Malta and Portugal — about 40% or more of fathers of children aged 3 to 6 years obtained only lower secondary education or less. Four of these— Spain, Malta, Italy and Portugal — belong also to countries with highest level of early school leavers in the EU ranging from some 20% of early school leavers in Italy to about 40% in Malta and Portugal

Migrant background

Immigration has been and will continue to be a main feature of European societies. Today, the successful integration of migrant children in European schools and societies is both an economic necessity and a pre-condition for democratic stability and social cohesion. Education and training play a crucial role in the integration of immigrants, but cannot on their own solve the problem — a holistic and integrated approach on the part of all stakeholders is necessary.

A study recently prepared for the Commission by Friedrich Heckman[80] has confirmed that immigrant children, in comparison to their peers, are very often unable to take full advantage of education and training in various areas and at various levels of the system.

Enrolment in pre-primary has improved in many countries, as shown in the Chapter 1 of this report, though migrant children in some countries, for example in Germany, still enrol at a later age and at a generally lower ratio compared to their native peers[81]. Migrant students' enrolment in **secondary schools** is often in schools that are academically less demanding and of shorter duration[82][83].The EUMC survey[84] also found that migrant children and young people usually stay in secondary education for a

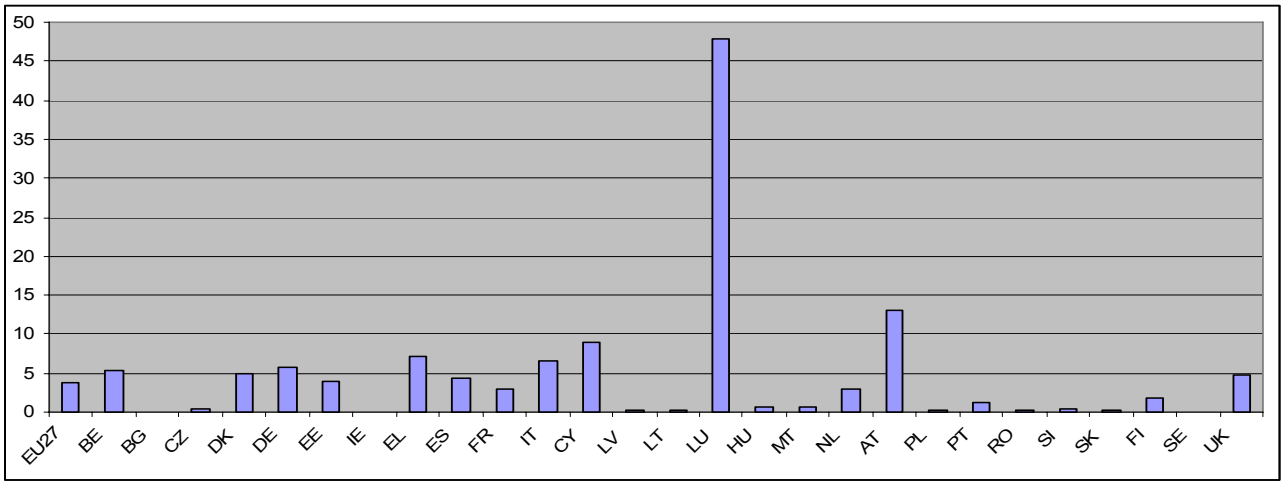
shorter period. Another important aspect of school enrolment is the overrepresentation of migrant children in **schools for special education.** This "…appears to be a common phenomenon in many countries of the European Union".

Moreover, foreign ethnic background is a factor which significantly influences pupils' achievement at school in many countries. Data from all relevant international surveys (PISA, TIMSS and PIRLS) confirm this (see for example Table Ann B.6.1 based on PIRLS data and Table Ann B.6.2 based on PISA data).[85]

The performance of migrant pupils in schools is comparatively higher in countries with lower levels of economic inequality, high investment in childcare and a well-developed system of preschool education. It is also better in comprehensive systems with late selection of pupils to different ability streams and worse in systems characterised by high levels of selectivity.

The individual school matters. Research supports the hypothesis that schools of good general quality are also good for migrant children and their educational opportunities.

Chart 6.12 Children aged 3 to 6 with migrant background, 2006
(Percentage of children aged 3 to 6 with migrant background of the total number of children aged 3 to 6, 2006)



	EU27	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT	LU	HU	MT
2006	3.8	5.4	0.0	0.3	4.9	5.7	4.0	:	7.2	4.3	3.0	6.5	8.8	0.2	0.1	47.9	0.5	0.5

	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK	HR	MK	TR	IS	LI	NO	JP	US
2006	2.9	13.0	0.2	1.2	0.1	0.4	0.2	1.7	:	4.8	:	:	:	:	:	:	:	:

Data source: Eurostat (Labour Force Survey), 2006

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Some differences in the various education systems' ability to reduce the differences between foreign and native pupils' achievement levels, as shown in PIRLS and PISA, can be explained by the different immigration policies and different composition of the foreign population in individual countries, in terms of national origin and socio-economic, educational and linguistic background. However, there are still significant differences between countries with relatively uniform foreign school populations. Chart 6.12 shows that the percentage of children aged 3 to 6 years with a foreign background due to enter compulsory education soon varies considerably between countries.

Among the countries for which data are available, the proportion of children with a foreign background is extremely high in Luxembourg, accounting for about half of the children aged 3 to 6, followed by Austria with 13%. In six other countries (Belgium, Denmark, Germany, Greece, Italy and Cyprus) the ratio is between 5% and 10%.

Intergenerational transmission of disadvantages

There are marked differences between countries in the scale of the influence of the educational level of parents on educational level obtained by their children. This impact seems particularly large in a number of the new Member States (the Czech

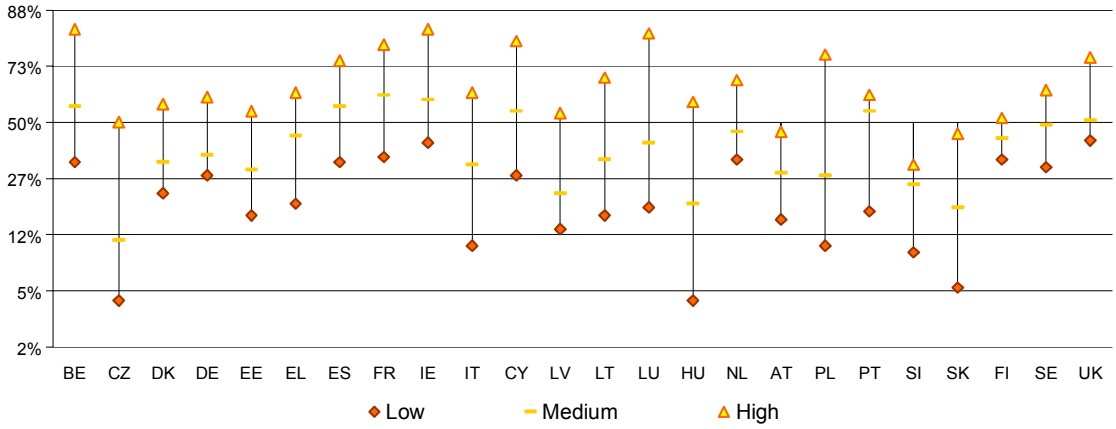
Republic, Hungary, Poland, Slovakia, Lithuania and Cyprus) but also relatively big in Italy, Luxembourg and Belgium. On the other hand, the influence of the parent's level of education on the education level of their children appears to be smaller in Finland, Sweden, Germany and the Netherlands.

In all Member States for which data are available (with exception of Slovakia and Austria), the probability of someone aged 25-34 years having completed higher education is over 50% if their father had higher education.

In Ireland and the United Kingdom, children of father with low educational level have the most chances to finish higher education.

In all countries, the chances of young people having higher educational level if their father had the same level are over twice as high as for people whose fathers had only low education. As we can see in the Chart 6.13, in the Czech Republic, Poland Hungary, Luxembourg, Italy and, Slovakia difference of probability to have obtained higher educational level according to the educational level of father is particularly visible.

Chart 6.13 Probability of attaining higher education, of women and men, by aged 25-65, by educational level of father



Note: Percentages are in a logit scale. Graphically, differences between the percentages correspond to the logarithm of the odds-ratio.

While analysing intergenerational transmission of educational disadvantages for two age-groups of persons – 25-34 years old and 45-54 years old, we can notice that:

►The probability of someone whose father had low education attaining a university degree has tended to increase over time in most Member States, but this also reflects the general rise in participation in higher education.

►More relevantly, the chance of a person whose father had only basic schooling completing higher education relative to someone whose father had higher education has risen over the long-term in 17 of the 24 Member States for which data are available.

►In Hungary, the Czech Republic, Poland and Lithuania, however, the odds ratio for persons whose fathers are university graduates relative to those whit fathers low educated has increased – higher education seems to become still more "elitist".

Table 6.4: Probability of attaining higher education, of women and men, by age and education level of father

Country	25-34 years old				45-54 years old			
	Highest education attained by father			Odds ratio (High/Low)	Highest education attained by father			Odds ratio (High/Low)
	Low	Medium	High		Low	Medium	High	
HU	0.04	0.19	0.59	34.5	0.06	0.17	0.58	21.6
PL	0.10	0.28	0.77	30.1	0.06	0.19	0.62	25.6
CZ	0.04	0.11	0.50	24.0	0.07	0.13	0.49	12.8
LU	0.18	0.41	0.83	22.2	0.08	0.28	0.74	32.7
SK	0.05	0.18	0.45	15.5	0.08	0.24	0.63	19.6
IT	0.10	0.32	0.63	15.3	0.08	0.49	0.61	18.0
LT	0.16	0.34	0.69	11.7	0.20	0.46	0.67	8.1
CY	0.28	0.55	0.81	11.0	0.18	0.62	0.81	19.4
BE	0.33	0.57	0.84	10.7	0.23	0.48	0.77	11.2
PT	0.17	0.55	0.62	8.0	0.09	0.62	0.79	38.0
LV	0.13	0.22	0.54	7.9	0.12	0.32	0.60	11.0
IE	0.41	0.60	0.84	7.6	0.18	0.59	0.81	19.4
FR	0.35	0.62	0.80	7.4	0.17	0.46	0.73	13.2
EL	0.19	0.44	0.63	7.3	0.14	0.49	0.55	7.5
EE	0.16	0.30	0.55	6.4	0.23	0.36	0.65	6.2
ES	0.33	0.57	0.75	6.1	0.16	0.46	0.69	11.7
DK	0.22	0.33	0.58	4.9	0.19	0.30	0.61	6.7
AT	0.15	0.29	0.46	4.8	0.13	0.25	0.62	10.9
SI	0.09	0.25	0.32	4.8	0.04	0.16	0.50	24.0
UK	0.42	0.51	0.76	4.4	0.27	0.46	0.72	7.0
NL	0.34	0.46	0.68	4.1	0.24	0.43	0.70	7.4
DE(1)	0.28	0.36	0.61	4.0	0.28	0.35	0.58	3.6
SE	0.31	0.49	0.64	4.0	0.24	0.52	0.55	3.9
FI	0.34	0.43	0.52	2.1	0.29	0.50	0.62	4.0

Source: EU-SILC, 2005

Notes: Percentages are in a logit scale. Graphically, differences between the percentages correspond to the logarithm of the odds-ratio.
Low education – less than upper secondary (ISCED 3)
Medium education – at least upper secondary (ISCED 3 or ISCED 4)
High education – higher education (ISCED 5 or ISCED 6)
(1) For Germany older age groups compared because of later graduation (35-44 and 55-64).

Occupational links

Data from SILC (see tables Ann B.6.3, Ann B.6.4 and Ann B.6.5 in ANNEX) also show that there is a relatively close correlation between education levels and occupations. Both men and women have significantly more chances in all countries of obtaining a high level job, as a manager, professional or technician, if their father had the same kind of job than if they were in any other occupation. In most countries, however, the influence on sons is greater than on daughters, especially in the new Member States and the southern EU countries.[86]

The odds ratio is around two in the EU as a whole, signifying that someone whose father had a job in this occupational group was over twice as likely themselves to have such a job as other people he countries in which the odds ratio is highest include many of the new Member States – Poland, Cyprus, Hungary, the Czech Republic, Slovenia and Latvia. They also include Portugal, Spain, Luxembourg and Greece. Most of the countries – the exception is Spain – are also those where the odds ratio for education levels was high. Similarly, the countries where the odds ratio is lowest – Germany, the Netherlands, the UK, Ireland, Finland and Denmark – and where there is a greater chance than elsewhere in the EU of securing a high level job without having a father with such a job, are also the countries where the odds ratio for education levels was lowest. Nevertheless, it is still the case that even in these countries having a father with a high-level job significantly increases the chances of also having this kind of job (i.e. they are around 50% higher or more).

7. EMPLOYABILITY

7.1. A key challenge –demographic induced decrease in employment

7.2 Educational attainment of the population

7.3 Labour market and educational attainment

7.3.1 Educational attainment and employment/unemployment rates

7.3.2 Other returns to education

7.4 Future skills needs

MAIN MESSAGES
Employability

- The educational attainment of the working age population (15-64 year olds) has improved considerably since 2000. The share of population with at most lower secondary education is down by 5.3%, and the share with tertiary education is up 3.6%. Yet almost 108 million people in the age bracket 15-64 still have low educational qualification, below upper secondary level – one third of the EU working age population.

- There is a wide variation in the share of the working age population with high educational attainment, from 9.9% in Romania to 29.7% in Cyprus. In 10 Member States, Belgium, Denmark, Estonia, Ireland, Spain, Cyprus, the Netherlands, Finland, Sweden and the United Kingdom, more than 25% of the working age population have high educational attainment. Ireland, Denmark and Spain have experienced the strongest growth in high attainment.

- Higher educational attainment partly explains the improvement in the EU employment rate since 2000.

- The share of 25-64 year-olds with high educational attainment in the EU, which is at 23 %, is far behind the 40% of both the US and Japan. The Russian Federation is the best performer with 55%.

- According to recent projections, in 2015, around 30% of jobs are expected to require qualifications on the level of higher education and almost half will require at least medium level qualifications at upper secondary education levels.

The Lisbon strategy is designed to enable the EU to regain the conditions for full employment and to strengthen social cohesion by 2010. Increasing employment rates is among the most important success criteria in the strategy. Specific targets were set by successive European Councils on overall employment rates (70%), employment rates of women (60%) and employment rates of older workers (55-64 year olds) of 50 %.

After re-launching the Lisbon strategy in 2005, and refocusing it on growth and jobs, Europe has, until very recently, produced relatively strong growth figures. Total employment has increased by almost 6.5 million in the last two years. Another 5 million are expected to be created up to 2009. Unemployment is expected to fall to under 7%, the lowest level since the mid-80's. The employment rate, currently at 65.4%, has moved closer to the overall Lisbon target of 70%. For the first time in a decade, strong increases in employment have gone hand in hand with robust productivity growth (European Commission, 2007i).

At the European Spring Council meeting in March 2008, the heads of state and government recognised the importance of reforms undertaken over the years and underlined the importance of further promotion of "flexicurity" and to pay continuing attention to the transition from education to employment in the context of the implementation of the European Youth Pact. The conclusions of the European Council invited the Commission to present a comprehensive assessment of future skills requirements in Europe until 2020 taking into account technological change and aging population and to propose steps to anticipate future needs (Council, 2008a, paragraphs 14 and 16).

This chapter focuses on skills or knowledge as central parameters for employability. The core indicator for measuring progress in this area is the share of the population with high educational attainment, which can be seen as a proxy for the high skilled workers available to an economy. Rules and institutions governing the labour market will not be analysed in great detail (European Commission, 2007g and 2007j).

Section 1 highlights the demographic challenge of employment growth and suggests that improving educational attainment is a key policy response. Section 2 explores the educational attainment of the population, which is the core indicator used by the Commission for monitoring progress in this field. In section 3, educational attainment is analysed in relationship to outcomes on the labour market and other outcomes. Section 4 examines future skills needs. [87]

What is employability?

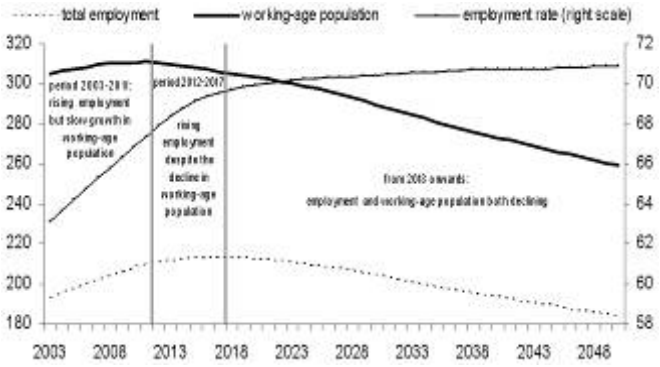
Employability refers to a person's capability of gaining employment. On the one hand a person's employability depends on the knowledge, skills and attitudes of this person. On the other hand labour market rules and institutions have significant impact on the ability of an individual to gain employment. Hence, a person with the same knowledge and skills characteristics might fare very differently in different national or regional labour markets.

7.1. A key challenge - demographic induced decrease in employment.

The political challenge of achieving higher employment rates should be seen in the light of demographic changes, which are projected to lead to a decline in the total working age population in approximately 10 years time (i.e. by 2018).

Chart 7.1 illustrates the importance of the employment rate[88] in the context of projected demographic changes (European Commission, 2007l).[89]

Chart 7.1: Demographic change and employment in EU 27 (in million and %)



Source: European Commission

The chart identifies three distinct phases[90], namely:

1. Between 2003-2011, where there is scope for significant employment and economic growth as both the working age population and employment rates are expected to increase.

2. Between 2012 and 2017, rising employment rates can offset the decline in the size of the working age population due to the baby boom generation entering retirement and being replaced by much

smaller younger cohorts (due to the decline in birth rates). The overall number of persons employed in the EU will continue to increase albeit at a slower pace, and this period could be characterised by tightening labour market conditions.

3. After 2018, the ageing effect will dominate. By then, the cohort trend towards higher female employment rates will broadly come to an end putting an even higher pressure on active measures to increase employment among women. In the absence of further reforms to increase the labour force participation of older workers (and raise the effective retirement age) no significant further increases in the employment of older workers can be expected either. Consequently, the declining size of the working age population must be expected to translate into declining total employment and reduced growth prospects. Having increased by some 20 million between 2004 and 2017 employment is projected to contract gradually by almost 30 million until 2050.

The overall employment rate has improved by more than 3 percentage points (from 62.2% in 2000 to 65.4% in 2007, see table 7.1). The employment rate of people with low educational attainment levels[91] was steady (slightly below 49%); while the employment rates of people with medium (from 68.3% to 70.3%) and high educational attainment (from 82.4% to 83.8%) are moving upwards (see Table 7.2b).

Table 7.1: Educational attainment and employment rates (2000-2007) (15-64 year olds) to be further updated

	Share of population (EU-27)			Employment rates (EU-27)		
	2000	2007	Change	2000	2007	Change
Low educational attainment	38	32.7	-5.3	48.8	48.6	-0.2
Medium educational attainment	45	46.7	1.7	68.3	70.3	2.0
High educational attainment	17	20.6	3.6	82.4	83.8	1.5
Overall	N.A.	N.A.	N.A.	62.2	65.4	3.2

Source: EUROSTAT (LFS)

The point is that while structural reforms might have had a clear impact on the overall improvement in the employment rate so have changes in the educational attainment of the population. The share of the population with low educational attainment has decreased remarkably (by 5.3%) while the share with medium and high educational attainment has increased correspondingly resulting in an overall increase of the employment rate (See Gros, D., 2006a for a similar argument).

The demographic forecast suggests that 2018 is the point in time when total employment will no longer grow. Employment rates are at 70% and the only source of future economic growth by increasing productivity. This chapter argues that the response to the challenge of increases in total employment and increased productivity is the same, namely an up-grade of educational attainment.

7.2. Educational attainment of the population

The level of educational attainment of the working age population (aged 15 to 64) provides a crude measure of the knowledge and skills available in each country.[92] It presents the educational characteristics of the supply side of the labour market. In this context, the share of the population with high educational attainment was selected as the core indicator for measuring progress in the field of employability.

In 2007 in the EU nearly one third (32.7%) of the working age population had low level of educational attainment, almost half (46.7%) had a medium level and one fifth (20.6 %) a high level (see table Ann B.7.1). Compared with 2000, the share with low educational attainment had decreased by more than 5 % while the share with medium and high educational attainment had increased by 1.7% and 3.6% respectively. The table reveals important differences between countries in the educational attainment levels of the working age population.

The percentage of the working age population with low educational attainment varies between 16.2% in the Czech Republic to over 70% in Portugal and Malta. In the Czech Republic, Germany, Estonia, Latvia, Lithuania, Hungary, Austria, Poland, Slovenia, Slovakia, Finland, Sweden and the UK less than 30% of the working age population have low educational attainment, while in Greece, Spain, Italy, Malta and Portugal it is more than 40%. In 2007 almost 106 million persons aged 15-64 in Europe had low levels of formal educational qualifications, approximately 12 million fewer than in 2000.

At the intermediate level of educational attainment, Malta and Portugal have less than 20% of its

working age population, while the Czech-republic, Austria, Poland and Slovakia have more than 60%.

Finally, the percentage of the working age population with a high level of educational attainment (the core indicator) varies between 9.9% in Romania and 29.7% in Cyprus. Ten countries break the ceiling of 25% of the working age population with a high educational attainment level, namely Belgium, Denmark, Estonia, Ireland, Spain, Cyprus, the Netherlands, Finland, Sweden and the United Kingdom (table 7.2). The three countries, which have experienced the strongest growth over the period 2000-2007 are Ireland, Cyprus and Malta.

Between 2000 and 2007 in every Member State – except for Germany and Luxembourg (see table Ann B. 7.1) - there was a shift in the working age population from low levels of educational attainment to medium and high level. This shift is most pronounced in Spain where the proportion of the working age population with low educational attainment decreased by 9.8%. Other countries where high percentages of the working age population had a low level of educational attainment in 2000 experienced similar changes – Malta, Portugal and Greece.

Table 7.2: High educational attainment of 15-64 year olds (2000, 2007) (%)

	EU27	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT	LU	HU
2000	17	23.8	15.2	9.5	21.6	21.4	23.7	18.7	14.0	21.0	19.8	8.1	22.1	14.9	34.7	16.7	11.5
2007	20.6	28.1	18.5	11.6	27.1	20.7	27.3	28.1	19.2	27.0	24.3	12.0	29.7	18.8	24.1	22.7	15.4

	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK	HR	MK	TR	IS	LI	NO
2000	4.9	20.7	12.3	9.1	7.6	7.4	12.8	8.2	27.5	26.8	25.3				19.0		28.7
2007	11.5	26.7	14.8	15.7	12.0	9.9	18.5	11.9	29.5	27.0	28.2				24.0		29.1

Data source: EUROSTAT (LFS)

The core indicator for measuring progress in this area is: **Share of the population with high educational attainment**

Whereas the basic requirement for the post-war economy was secondary education, the one for an innovation-driven economy is higher education. The jobs currently being created as a result of innovation are not low paid-low skilled, but high paid-high skilled jobs. Countries endowed with a highly skilled and adaptable workforce are more able to create and make effective use of new technologies and to embrace change. This line of reasoning[93] suggests that it is the skill composition of human capital and more precisely the share of high skilled workers in the labour force, which plays an important role in relation to economic growth.

In less developed countries, a highly skilled and adaptable workforce affect technological progress by adopting new technologies created abroad. The speed at which the countries "catch up" with those close to the technological frontier is a function of their human capital stock and their distance from the technological frontier. As these countries move closer to the technological frontier, the strength of the catch-up effect decreases, and investment in a highly skilled and adaptable workforce gains increasing significance. This is connected with the fact that in countries near the world technological frontier, a highly skilled and adaptable workforce has an impact on technological progress predominantly through creation of new technologies.

The cause of the shift in educational attainment of the population is that young people with higher levels of formal educational qualifications enter the labour force, while older generations with lower levels gradually leave. As illustrated below (see table 7.3) - using a five year age group entering the labour market and a five year age group leaving the labour market - the skills profiles of the older generations are very different from the profiles of the younger generations.

Table 7.3: Educational attainment (EU-27) 2007 (in %)

	Low	Medium	High
25-29 year olds	19.4	50.7	29.8
60-64 year olds	55.3	32.3	12.4

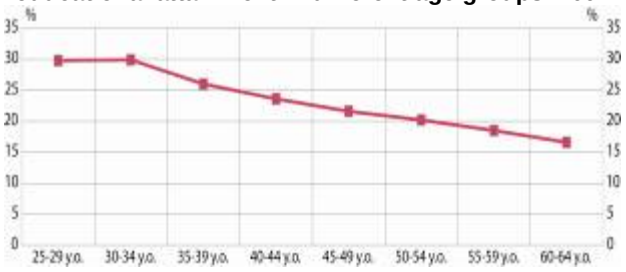
Source: EUROSTAT (LFS)

The proportion of 25-29 year olds with low educational attainment is close to 35 percentage points lower than the proportion of 60-64 year olds, while medium and higher levels are about 17% higher each. At the level of individual countries this shift is most noticeable in Ireland, Greece, Spain, Italy and Cyprus where the proportion of 25-29 year olds with low educational attainment is 40 percentage points lower than the proportion of 60-64 year olds with the same educational level. Medium

and higher education levels are correspondingly higher for the 25-29 year olds.

By analysing higher educational attainment separately this generational effect becomes very clear. Close to 30% of the 25-29 and 30-34 year olds have achieved higher educational attainment (see chart 7.2). Among the outgoing generations of 55-59 and 60-64 it is below 20 %. Women have experienced the strongest shift toward higher educational qualifications overall. In 2000 the percentages of females with low

Chart 7.2: Percentage of population with high educational attainment in different age groups. 2007



Source: EUROSTAT (LFS)

educational attainment (40%) was higher than for men (35,9%) while for medium and high educational attainment the percentage was lower than for men. In 2007, the overall distribution of females according to educational level resembles that of men. However, while the proportion of females with low educational attainment is still higher than that of men, females have now surpassed men when it comes to the share with high educational attainment.

Table 7.4: Educational attainment of young men and women 2007

		Low	Medium	High
20-24	Men	24.3	65.2	10.5
	Women	18.9	65.5	15.6
25-29	Men	21.4	52.9	25.7
	Women	17.4	48.6	34.0

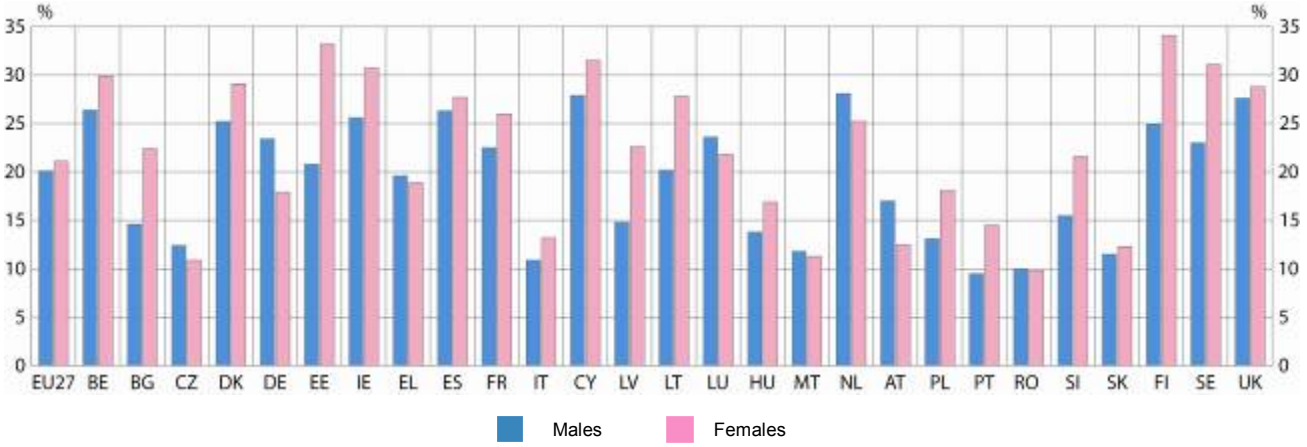
Source: EUROSTAT (LFS)

Chart 7.3 shows the share of working age (15-64 year olds) males and females with high educational attainment on country level. In the majority of countries females have a higher share with high educational attainment. However, in the Czech Republic, German, Luxembourg, the Netherlands, Romania, Slovakia and Austria the opposite is the case - males have a higher share with high educational attainment.

It is noticeable that in Bulgaria, the three Baltic States, Ireland, Slovenia, Finland, Sweden and Norway the share of women with high educational attainment is more than 5 percentage points higher than the corresponding figure for men.

Analysing the young population (see table 7.4) entering the labour market the share of females with high educational attainment is higher than the corresponding share for males, while the share of females with low educational attainment is lower than for males.

Chart 7.3: Gender and high educational attainment of working age population (15-64 year olds) 2007



Data source: Eurostat (EU-Labour Force Survey)

In an international context (see table 7.5) many of EU's key competitors perform at a higher level when it comes to the educational attainment of the adult population.[94] US and Japan both have a share of around 40% of 25-64 year olds with higher education. The Russian Federation is the best performer at 55% while Mexico, Brazil and Chile perform at substantially lower levels.

Table 7.5: High educational attainment of 25-64 year olds (in %)

	EU27	USA	Japan	Australia	Korea	Mexico	New Zealand	Russian Federation	Brazil	Chile
2005	23[3]	39	40	32	32	15	27	55[2]	8[1]	13[1]

Data source: OECD and EUROSTAT (LFS)
1. Year of reference 2004 2. Year of reference 2003 3. Year of reference 2006

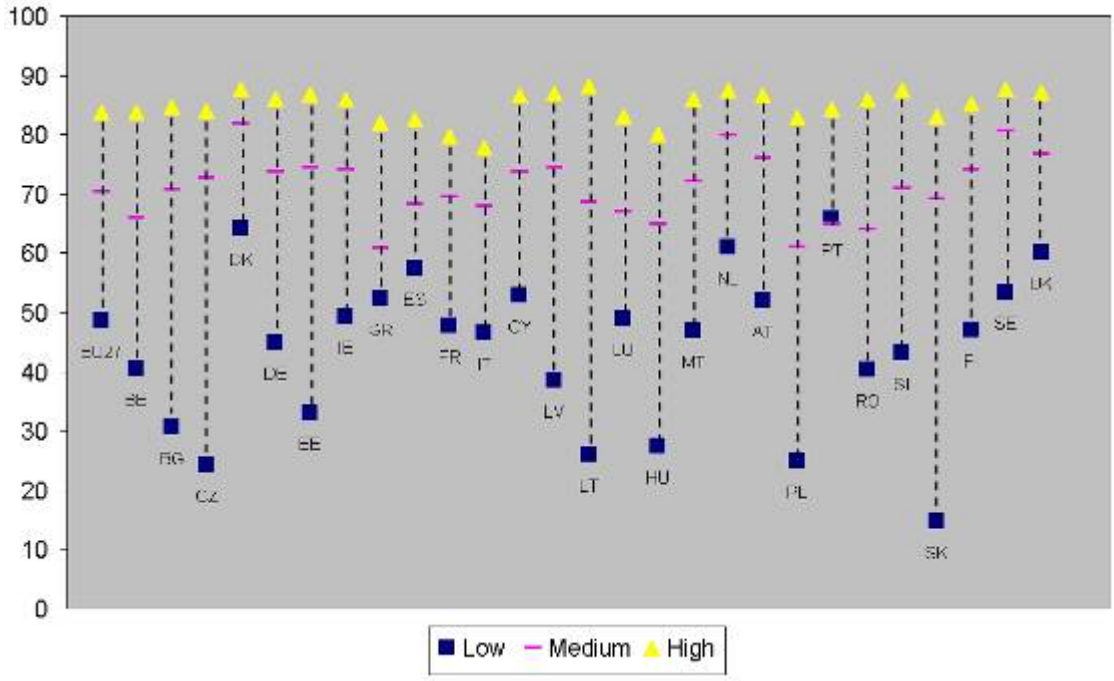
7.3. Labour market and educational attainment

Research over the past decade has produced ample evidence that the monetary and non-monetary prosperity of individuals is related to their level of education and training. Education yields substantial returns to the individual in terms of earnings and employability and significant gains in economic growth and wider social benefits. Given that most European countries achieved virtually universal enrolment in primary and lower secondary schooling, policies that increase the quality of schooling in terms of pupils' cognitive and non-cognitive skills may bring considerable benefits in the long run. Evidence shows that the quantity and, especially, quality of schooling, in terms of student performance in cognitive achievement tests yield substantial payoffs on the labour market for the individual and society alike (Barro 2001 and Wößmann 2002).

7.3.1 Educational attainment and employment/unemployment rates

This section analyses the performance of people with different educational attainment levels on the labour market. The analysis does not consider rules and institutions governing national labour markets. It does not consider the overall labour market situation which also impacts on the performance of workers with different educational attainment levels. Consequently, the analysis below only provides a crude illustration of labour market demand in relationship to people with different educational attainment levels.

Chart 7.4 : Employment rates and educational attainment for 15-64-year-olds (2007)



*Data source:*Eurostat, New Cronos database (extraction date: 6 May 2008)

The educational attainment of the population does translate into corresponding performance on the labour market. The overall tendency is clear across European countries - the higher the educational attainment is, the higher the employment rates are (see chart 7.4); in many new member states the gap is higher than 50 percentage points (70 percentage points in Slovakia and 60 percentage points in Lithuania and the Czech Republic).

Interestingly, however, there are clear differences between countries on how people with different educational attainments perform on the labour market. This is particularly true for people aged 15 to 64 with low educational attainment. In 2007, the

employment rate for this group varies between 15% in Slovakia to 66% in Portugal (see table 7.2b).

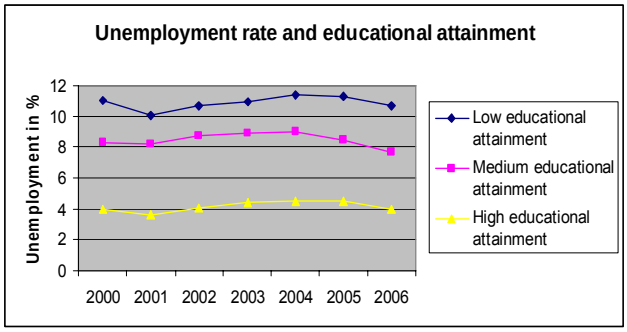
For people with medium levels of educational attainment the employment rate varies between 61% in Poland to 82% in Denmark.

Finally, within the EU, the employment rates for people with high educational attainment is below 80% only in Italy and France whereas in the majority of EU countries (two-third of the Member States) it is well-above above 85%.

Analysing unemployment rates for the age group 15 to 64 years give a similar picture. In all countries with the exception of Greece there is a clear tendency towards lower unemployment rates with the increase of the educational attainment level; in Slovakia this gap is as high as 40 percentage points. Moreover, the increase in the share of the working age population with medium and high educational attainment (see section 3) does appear to have been absorbed by the labour market. In chart 7.5, unemployment rates have showed slightly downwards trends since 2004 for all educational categories – strongest for medium educational attainment.

A more detailed look at the employment situation of the younger generation reveals that youth unemployment and difficulties in successfully integrating young people in the labour market remain a challenge for many EU Member State (see table Ann B.7.2). Despite signs of some overall recent improvements, a real breakthrough in reducing youth unemployment has yet to occur.

Chart 7.5: Unemployment and educational attainment (EU-27)



Eurostat (LFS)

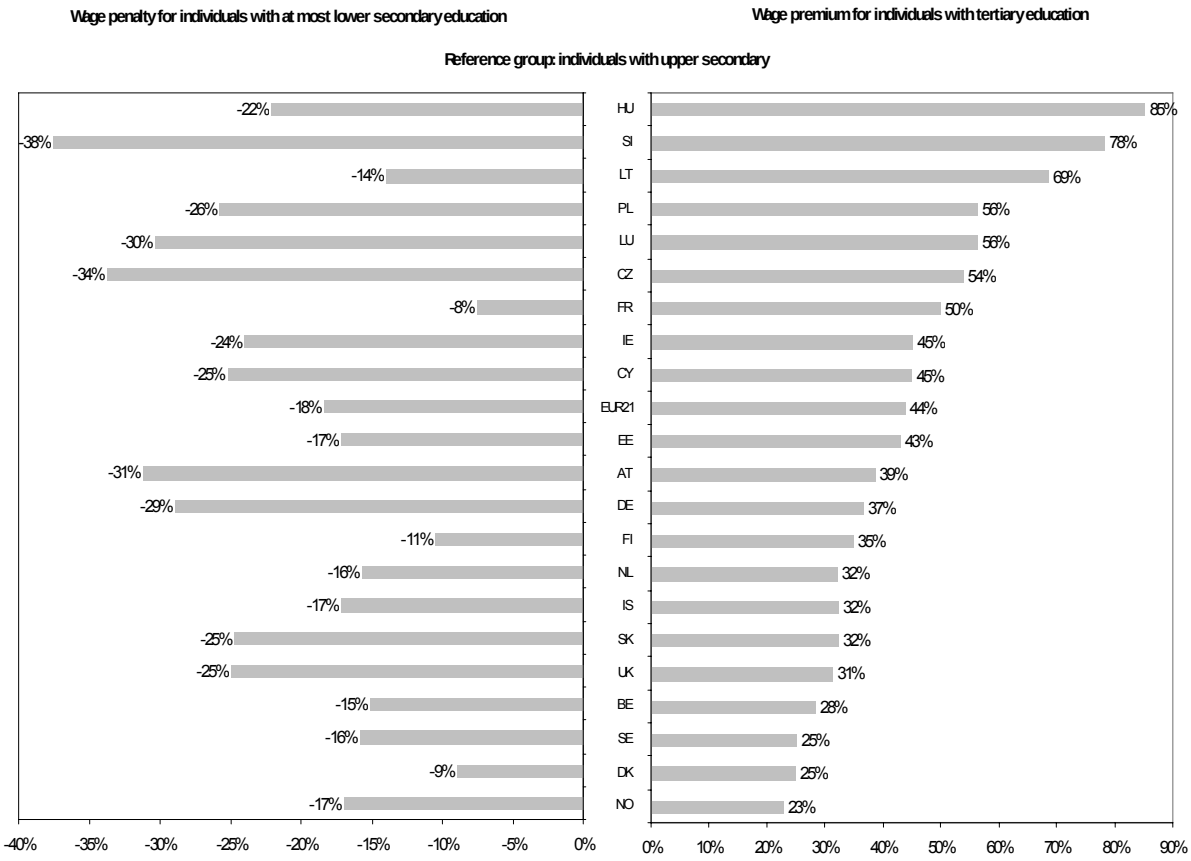
At 15.5% in 2007, the youth unemployment rate in the EU is almost 2 percentage points lower than in 2006. Furthermore, as a whole, the EU underperforms in the international context, with substantially more youth in unemployment and fewer working than in other industrialised countries, such as the United States, Canada or Japan (European Commission, 2007g).[95]

7.3.2 Other returns to education

The research in economics of education over the past years has produced robust evidences on the effect of schooling on the individuals' wages. Schooling raises the individuals' productivity which is afterwards rewarded in the labour market in terms of higher earnings or wages (*cf.* Harmon *et al.* 2003).[96]

A way of accounting the benefits of schooling is to look at the monetary benefits associated with the different levels of educational attainment through the econometric estimation of Mincerian earning equations. Recent estimations using data from the 2006 Survey on Income and Living Conditions (EU SILC) shows that, across European countries for which data exist, individuals with university degrees and advanced research education had gross monthly earnings that were 44% higher on average than their less educated counterparts (see chart 7.6). Tertiary education graduates earn substantially more than upper secondary and post-secondary non-tertiary graduates typically earn in all countries for which data exist. In one third of the countries the wage premia for tertiary graduates over 50%. The relative earnings from employment of tertiary graduates compared with upper secondary or post-secondary graduates can be as high as 85% in Hungary or 78% in Slovenia but are only less than 25% in Sweden, Denmark or Norway (CRELL, 2008a). On the other hand, in countries where data are available, the workers with a low level of education (at most lower secondary) have a gross monthly income which is 18 percent lower than the monthly earnings of a typical worker with a medium level of education.

Chart 7.6 Schooling and earning differentials compared to medium levels of education (upper secondary) in some European countries (2005)



Source: **CRELL estimates based on EU SILC data**

In some countries (especially the new member states) the wage premium associated with tertiary education could suggests an "under-supply" of tertiary graduates relative to the demand on the labour market. Indeed in countries like the Czech Republic, Hungary and Poland the proportion of working-age population (25-to-64-olds) with tertiary education is below the EU average. At the same time, the growing demand for higher education, driven partly by the introduction of new technologies biased in favour of highly skilled workers, also increases the wage premium attached to tertiary graduates. However, the wage responsiveness to changes in the supply of and demand for tertiary graduates varies between countries and other factors can affect the wage differentials.[97] Empirical evidence shows a negative relationship between wage differentials by level of education and the stringency of labour market institutions, the level of union membership or the degree of centralisation in wage bargaining (*cf.* Brunello et al. 2001).

7.4. Future skills needs

The integrated guidelines for growth and jobs 2005-2008, as well as 2008-2010, ask for better anticipation of skill needs, labour market shortages and bottlenecks to improve the matching of labour market needs. [98]

In November 2007, the Education Council adopted a resolution on the "new skills for new jobs" which stressed the need to raise the overall level of skills, anticipate skills needs and skills gaps emerging in the European labour markets and to improve the matching of knowledge, skills and competence with the needs of society and economy. This resolution aims at strengthening the identification of new types of jobs and skill needs at the European level, making use of existing initiatives, in order to develop regular foresight of medium-term skills needs and identify short term skills gaps. Such a coordinated approach based on existing structures should better respond to the objectives of several integrated guidelines of the Lisbon Strategy including guideline 20 on "improve matching of labour market needs" as well as guideline 7 on "R&D resources" and guideline 23 "investment on human capital" and guideline 24 on "Adapt education and training systems in response to new competence requirements."

As a consequence of these developments, Cedefop has embarked on the work on projecting the skill needs in Europe.[99] The first results of the skill needs forecasts at the EU level shows that that the demand for skills and qualifications is being driven upwards in most occupations including in the so-called elementary jobs, by the continuing rise of the service sector and sweeping technological and organisational changes. [100]The forecast suggests that the total employment increase in Europe between 2006 and 2015 of around 13,5 million new jobs comprises more than 12.5 million additional jobs at the highest qualification level (tertiary education) and almost 9.5 million jobs at the medium level whereas the demand for jobs requiring low qualifications (at most lower secondary education) will fall by 8.5 million. Jobs requiring only low level qualifications will have decreased from around a third in 1996 to around 20% of the working age population in 2015 (CEDEFOP, 2008a).

Based on the Cedefop projections, in 2015 around 30% of jobs will need high qualifications whereas almost half will require medium qualifications, including vocational qualifications. It is expected that this will increase the pressure on the upper and post-secondary levels of education. The challenge will be to improve the quality (and also the access) at these two levels of education.

8. INVESTMENT IN EDUCATION AND TRAINING

8.1 The level of investment in education
8.1.1 Public investment on education
8.1.2 Private investment on education

8.2 Measuring the efficiency of investment in education
8.2.1 Some measures of efficiency of investment on education

MAIN MESSAGES
Investment in education and Training

- Denmark, Sweden and Cyprus allocate nearly 7% of their GDP into public investment in education. These are the highest levels in the EU and among the highest in the world. Japan (3.5%) and the US (4.8%) trail the EU (5%) on public investment. However, they both have much higher levels of private investment in education than any Member State.

- Bulgaria, Czech Republic and Romania are catching up on public investment in education while Estonia, Lithuania, Italy, Slovakia, Spain and Germany are loosing ground.

- Although private investment in education is increasing in the EU, it is only significant in 4 Member States (the United Kingdom, Germany, Cyprus and Slovakia). For these, it reaches up to 17%, still well behind Japan and Australia (25%), the United States (30%) and Korea (40%).

8.1 The level of investment in education and training

Building on the Lisbon Council's call for increased and improved investment in human resources, making the best use of resources was one of the thirteen specific objectives of the Education and Training 2010 work programme (Council, 2002b) "*expanding and improving investment in human resources"* which was included in the renewed Lisbon strategy. The conclusions from the spring 2006 European Council underlined that "*investments in education and training produce high returns which substantially outweigh the costs and reach far beyond 2010*".

In its 2007 annual report the Commission issued recommendations for more than half of the Member States in relation to education and training, lifelong learning and skills development. In half of these cases, the recommendations addressed the need for further reforms of national education and training systems, including education investment (European Commission, 2007c). The Council Conclusions of March 2008 reiterates the need for "*investing more and more effectively in human capital and creativity throughout people's lives*" as crucial conditions for Europe's success in a globalised world (Council, 2008a).

This chapter analyses the patterns of investment in education in the European countries. Data presented and analysed in this chapter only covers the educational institutions as they are defined in the joint Unesco-OECD-Eurostat (UOE) data collection. Data on investment in vocational training is analysed in chapter 6. Although some information about other types of public investment on training (e.g. for the unemployed) do exist, it is not covered in this chapter.

The volume of educational investment is discussed in sections 8.1. Some measure of investment performance are constructed and analysed in section 8.2.

8.1.1 Public investment on education

In the past years, the macro-economic situation in most EU countries (as reflected by their GDP level) has changed significantly: in some countries the rapid economic growth meant higher government revenue and hence a greater pool of public resources available for investment. At the EU level, in 2004, the main functional components of public spending (in % of total spending) were: social protection (41%), general public services and health (14% each) and education (11%); these items combined accounted for two thirds of total public spending.

The composition of public spending can reveal the priority set by an economy where a sizeable proportion of the public spending is allocated to a certain component. It can reflect country-specific objectives or inefficiencies in spending areas, if the input does not deliver the expected performance in terms of output and outcome (European Commission, 2008b).

In 2005 almost 90% of investment on educational institutions (all levels combined) at European level was covered by public sources. The public sector finances the educational sector by bearing directly

Table 8.1: Public expenditure on education as a percentage of GDP in European countries

Public expenditure on all levels of education as a % of GDP and average annual percentage change

	EU 27	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT	LU	HU
2000	4.86 e	:	4.19	4.04	8.28 i	4.45	5.57 i	4.29	3.71 i	4.28	6.03 i	4.47	5.44 i	5.64	5.63	:	4.50
2004	5.06 e	5.99	4.51	4.37	8.43 i	4.59	4.98	4.72	3.84 i	4.25	5.79	4.58	6.70 i	5.07	5.2 i	3.87 i	5.43
2005p	5.03 e	5.95	4.51	4.25	8.28i	4.53	4.87	4.77	3.98	4.23	5.65	4.43	6.92 i	5.06	4.95 i	3.81 i	5.45
avg %	0.7	:	1.5	1.0	0	0.4	-2.7	2.1	1.4	-0.2	-1.3	-0.2	4.9	-2.1	-2.5	:	3.9

	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK	HR	MK	TR	IS	LI	NO
2000	4.52	4.86	5.66	4.87 i	5.42 i	2.88	:	4.15 i	6.08	7.31	4.64 i	:	:	3.48 i	5.93 i	:	6.81 i
2004	4.85	5.16	5.44	5.41 i	5.29 i	3.29	5.85	4.19 i	6.42	7.18	5.25 i	4.46	:	4.05	7.48 i	2.43	7.47 i
2005p	:	5.19	5.44	5.47 i	5.40 i	3.48	5.83	3.85 i	6.31	6.97	5.45 i	4.63 i	:	:	7.61 i	2.29	7.02 i
avg %	1.8*	1.3	-0.8	2.4	-0.1	3.9	:	-1.5	0.7	-0.9	3.3	:	:	3.9*	5.1	:	0.6

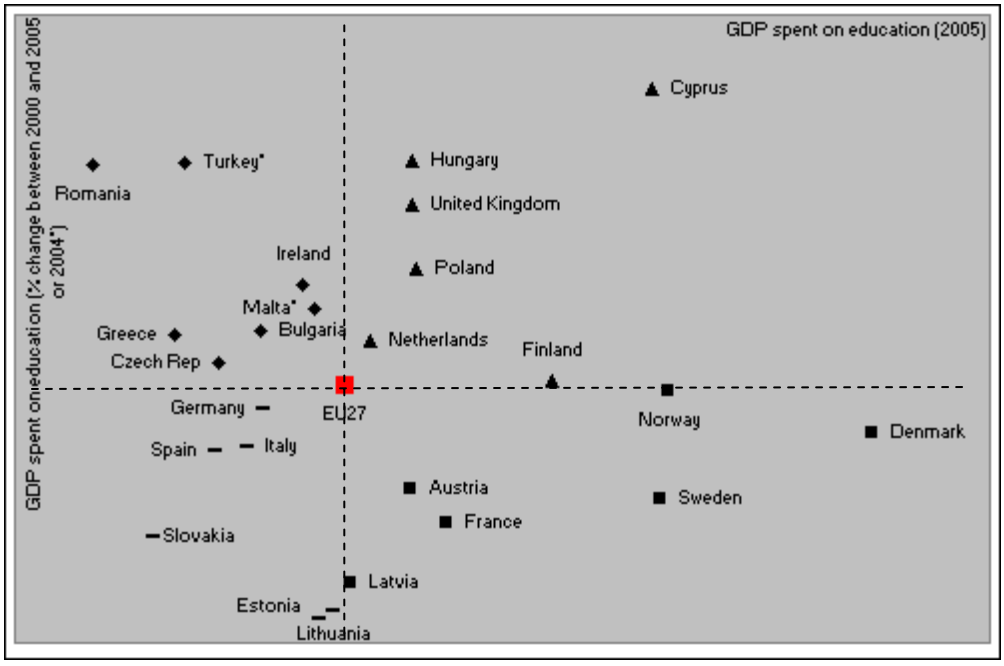
Data source: Eurostat (UOE)
(:) Not available, (e) Estimated value, (i) See additional notes, (n) Nil or negligible
(*)Average annual percentage change between 2000 and 2004
For additional country specific notes, please see:
http://epp.eurostat.ec.europa.eu/portal/page?_pageid=0,1136184,0_45572595&_dad=portal&_schema=PORTAL

the expenses of educational institutions, by supporting students and their families with scholarships and public loans, or by transferring public subsidies for educational activities to private companies or non-profit organisations. All these transactions are reported as public expenditure on education and included in the indicator on public investment on education as a percentage of Gross Domestic Product (GDP), which is often seen as the commitment which governments make to the provision of education in a country.

There are large variations between European countries in their levels of total public investment on education as a percentage of GDP. In 2005 Denmark had the highest relative investment level in education among the Member States (8.3% of GDP), followed by Sweden and Cyprus (about 7% each of them) and Finland (6.3%). High level of public investment on education was recorded as well in Iceland (7.6%) and Norway (7.0%). In Romania, Slovakia and Greece public investment in education in 2005 was close to or below 4% of GDP (See Table 8.1); among the third countries for which data exists, Israel, Ukraine, Morocco and Tunisia, the public investment on education as a percentage of GDP was higher than the EU average in 2004 (see table Ann 8.1).[101]

Chart 8.1 shows the average annual change in the relative investment on education (i.e. the proportion of GDP spent on education) between 2000 and 2005. The figure shows interesting trends in the relative investment on education in the European countries over the past five years. The countries in the lower-left quadrant (i.e. Lithuania, Estonia Italy, Slovakia, Spain, Germany) are falling behind the EU average in public investment as a percentage of GDP in 2005 whereas the countries in the lower-right quadrant (Denmark, Sweden, France etc.) are above the EU average but they are '*losing momentum*' in terms of relative investment on education as a percentage of GDP. In the upper-left quadrant some countries with lower levels of GDP spent on education (e.g. Greece, Bulgaria, Romania) are catching up with EU investment average levels as proportion of GDP. Finally, some countries (Cyprus, the UK, Hungary, Poland, Netherlands, Finland) in the upper-right quadrant are moving ahead in their levels of relative investment on education as proportion of the GDP; between 2000 and 2005 the average annual growth in the proportion of GDP allocated in education was about 5% in Cyprus, 4% in Romania and Hungary and 3.3% in the United Kingdom.

Chart 8.1 Public expenditure on education as percentage of GDP in the EU (2005)



Source : CRELL; *Data source*: Eurostat (UOE) – Graphical display is based on June 2008 data.

Public investment on education in absolute figures (expressed on comparable basis in purchasing standards) can offer a complementary picture on the public effort made by a country to finance its educational system. Table 8.2 shows that more European countries (among which many new Member States) are making efforts to increase the public investment on education in absolute terms in the past years. In countries like Romania, Hungary or Cyprus the public resources allocated to education expressed in comparative Purchasing Power Standards (PPS) have witnessed sizeable increases between 2000 and 2005 (over 10% annually). High average annual increases in the absolute figures of public investment on education between 2000 and 2005 were recorded as well in Ireland and Greece and in more than half of the Member States the average increase was at least 5% annually. In certain Member States changes in the national income were accompanied by high inflation rates, thus the figures expressed in constant terms (after adjusting for inflation) are lower.

Table 8.2: Public expenditure on education (all levels combined) in European countries

Total public expenditure on education in PPS (bill Euro) and average annual percentage change

	EU 27	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT	LU	HU
2000	445.5 e	:	1.9	5.3	11.2	82.4	0.7	4.1	5.9	32.0	80.5	58.0	0.6	0.9	1.5	:	4.9
2004	532.3 e	16.7	2.6	7.2	12.4	95.4	0.8	5.9	8.6	39.7	86.1	61.5	1.0	1.2	1.9	1.0	7.5
2005p	552.9 e	16.9	2.8	7.5	12.7	96.3	0.9	6.4	9.5	42.4	89.4	61.2	1.1	1.3	2.0	1.0	7.9
avg %	4.4	:	7.5	7.0	2.6	3.2	7.0	9.0	9.9	5.8	2.1	1.1	11.1	7.5	5.9	:	10.1

	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK	HR	MK	TR	IS	LI	NO
2000	0.3	18.6	11.5	17.5	9.0	3.2	:	2.1	7.1	15.5	58.3	:	:	14.1	0.4	:	9.8
2004	0.3	23.5	12.4	22.6	9.0	5.2	2.2	2.8	8.4	17.5	79.4	2.1	:	18.1	0.6	0.05	12.2
2005p	:	24.9	12.9	23.9	9.6	6.0	2.3	2.8	8.5	17.5	85.0	2.3	:	:	0.7	0.05	13.1
avg %	4.1*	6.0	2.4	6.5	1.4	13.0	:	5.8	3.6	2.4	7.8	:	:	6.4*	10.1	:	6.0

Data source: Eurostat (UOE)
(:) Not available, (e) Estimated value, (i) See information notes, (n) Nil or negligible, (p) Provisional data
(*) Average annual percentage change between 2001 and 2004
For additional country specific notes, please see:
http://epp.eurostat.ec.europa.eu/portal/page?_pageid=0,1136184,0_45572595&_dad=portal&_schema=PORTAL

8.1.2 Private investment on education

Use of private sources for funding educational institutions is becoming important in Europe. Between 2000 and 2005 in nearly all countries for which comparable data are available the private sources of funding for all combined levels of education have increased, both as a proportion of total funding as well as a percentage of GDP (See Tables 8.3 and 8.4). In 2005 in the majority of Member States for which data are available, the private sources of funding represented less than 10% of total investment on educational institutions (with 12.4% at the EU average). In some Nordic countries like Finland and Sweden educational institutions continue to be largely financed from public sources and less than 5% is covered from private sources. For another group of countries (France, Italy, Lithuania, and Poland) private sources of funding accounted for some 10% of total investment on educational institutions. In only four member states (the United Kingdom, Germany, Cyprus and Slovakia) the educational institutions were funded from private sources in a proportion of around 16-20% compared to 33% in the United States

Table 8.3: Private expenditure on educational institutions as a percentage of GDP in European countries

Expenditure on educational institutions (all levels of education) from private sources as % of GDP (i)

	EU 27	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT	LU	HU
2000	0.56 e	0.43 i	0.77	0.43	0.27 i	0.97	:	0.42	0.24 i	0.60	0.56 i	0.44	1.72	0.63 i	:	:	0.58
2004	0.64 e	0.34 i	0.64	0.61	0.32 i	0.91	:	0.32	0.19	0.61	0.55	0.46	1.17	0.82	0.48	:	0.52
2005p	0.67 e	0.35 i	0.62	0.57	0.57	0.92	0.38	0.29	0.25	0.53	0.55	0.44	1.21	0.76	0.49	:	0.49

	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK	HR	MK	TR	IS	LI	NO
2000	0.47 i	0.45	0.33	:	0.08 i	0.25 i	:	0.15 i	0.12	0.20	0.78 i	:	:	0.05 i	0.56 i	:	0.08 i
2004	0.45	0.50	0.39	0.59 i	0.13 i	:	0.84	0.75 i	0.13	0.20	0.95 i	:	:	0.11	0.74 i	:	0.05 i
2005p	:	0.43	0.47	0.55 i	0.42 i	0.40 i	0.81	0.70 i	0.13	0.19	1.25 i	:	:	:	0.73 i	:	:

Data source: Eurostat (UOE), (:) Not available, (e) Estimated value, (i) See information notes
For additional country specific notes, please see:
http://epp.eurostat.ec.europa.eu/portal/page?_pageid=0,1136184,0_45572595&_dad=portal&_schema=PORTAL

Table 8.4: Private expenditure on educational institutions as a percentage of total educational expenditure in European countries

Expenditure on educational institutions (all levels of education) from private sources as a % of total public and private expenditure

	EU 27	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT	LU	HU
2000	11.2 e	7.9 i	14.7 i	10.1	4.0 i	18.9	:	7.0	6.2 i	12.6	8.8 i	9.1	34.9	11.1 i	:	:	11.7
2004	11.6 e	5.7 i	14.3	12.7	4.4 i	17.7	:	7.1	4.7	12.9	9.0	9.6	16.6	14.8	9.0	:	9.3
2005p	12.4 e	5.8 i	13.9	12.4	7.7	18.0	:	6.3	6.0	11.4	9.2	9.5	16.7	13.8	9.8	:	8.7

	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK	HR	MK	TR	IS	LI	NO
2000	10.6	9.6	5.8	:	1.4 i	8.3 i	:	3.6	2.0	3.0	14.8	:	:	1.4 i	8.9 i	:	1.3 i
2004	8.5	9.9 i	7.2	9.9 i	2.5 i	:	13.7	16.0 i	2.1	3.0	16.1	:	:	7.4 i	9.4 i	:	0.8 i
2005p	5.3	8.6 i	8.6 i	9.3 i	7.4 i	10.8 i	13.2	16.1 i	2.2	3.0	19.9	:	:	:	9.1 i	:	:

Data source: Eurostat (UOE),
(:) Not available, (e) Estimated value, (i) See information notes, (p) Provisional data
For additional country specific notes, please see:
http://epp.eurostat.ec.europa.eu/portal/page?_pageid=0,1136184,0_45572595&_dad=portal&_schema=PORTAL

and 31% in Japan. But is there a link between different investment patterns and the educational outputs? In many Member States there is scope for making better use of public money and this topic will be addressed in the next section.

8.2 Measuring the efficiency of investment in education

A discussion about measures of investment efficiency should take into account the multi-faceted relationships between the data generated and the expected policy insights which an analysis of the data would yield. The translation of the educational variables into a coherent array of indicators which can be further used to measure the efficiency of investment in education has evolved in the past years especially due to increased availability of harmonised outcome data (mainly gathered through international large scale surveys). While the information collected through these surveys has created a lot of interest it can not at the moment be used for efficiency calculations since it should be contextualised with system level information. Consequently, identifying the most appropriate categories of indicators for measurement purposes in the field of investment efficiency in education remains a difficult exercise.[102]

The choice of certain measures is a policy choice rather than underpinned by research and therefore there's still uncertainty as to what is most pertinent to measured in order to identify:

- Which countries are most effective in converting education inputs into educational outputs?
- What scope is there among countries to either achieve greater outputs from the given inputs or the current level outputs but with less input resources?

The Communication from the Commission on "*Efficiency and equity in European education and training systems*" states that education and training systems are efficient if the inputs used produce the maximum output (European Commission, 2006a). The document makes clear that education and training policies must, and can, combine the twin objectives of efficiency and equity in seeking to maximise their economic and social potential. Thus, reforms must be carried out to ensure high quality education and training systems that are both efficient and equitable. The Communication has set out *five key messages*:

- the need to establish in each country a culture of evaluation;
- the importance of investing in pre-primary education;
- the contribution of autonomy and accountability systems to improving efficiency;
- the role of private funding in ensuring the equity in higher education and;
- the importance of clear pathways to further learning and employment.

With the 2008 Joint progress report, the Council and the Commission stressed the fact that "*the level, efficiency and sustainability of funding remain critical*" and reiterated the need for sustainable funding of education and training (Council, 2008b). The efficiency of investment in education is defined as a measure of how resources allocated to the educational system are converted into outputs for individuals (such as earnings or employment prospects) as well as into broader economic and societal outcomes. *Internal efficiency* relates to outcomes within the education and training systems such as individual learning outcomes whereas e*xternal efficiency* is related to broader outcomes such as increments to individual well-being or societal outcomes (European Commission,

2008b).[103] Below only the internal efficiency concept is addressed. In Chapter 7, the focus is on outcomes of education in terms of earnings of individuals, their skills and employability as a result of schooling.

Two categories of inputs can be distinguished for measurement purposes. The first type covers factors under the control of the education system such as teacher-student ratios, average instruction time, etc. The second category covers the so-called 'non-discretionary' factors such as students socio-economic background, which are not under the control of education providers but constitutes important determinants of the educational process; failing to notice them would bias the measurement.

Measuring investment efficiency imply using financial inputs. Ideally the financial data should be based on constant monetary units using Purchasing Power Parities (PPP) in order to filter out the effect of different price levels; even though, the use of PPP still does not filter out differences in salary levels (which relate to differences in per capita income). To correct this, one option is to use investment per student related to income per capita; this indicator filters out many of the structural and economic differences between countries but its unit is so small and is therefore rather difficult to be interpreted. Although no financial measure may eliminate all the possible bias, some are better proxies than others.

Outputs can be measured very broadly (in terms of educational attainment of the population) or more narrowly (in terms of graduation rates or study duration). From this perspective, the cost per typical graduate could be used as a proxy measure for measuring the investment efficiency and there would be value in being able to compare internationally the cost of producing a graduate (though these would be affected by measurement issues). EU member states are required to introduce direct measures of output for certain government services (including health care and education) with the dissemination of 2006 national accounts.[104]

The measures which could be envisaged to capture the outcomes are related to two main objectives of educational systems: educational achievement and equity. Some indicators that measure the learning outcomes of individuals (skills and knowledge acquisition) could be derived from data collected through surveys like PISA or PIRLS.[105]

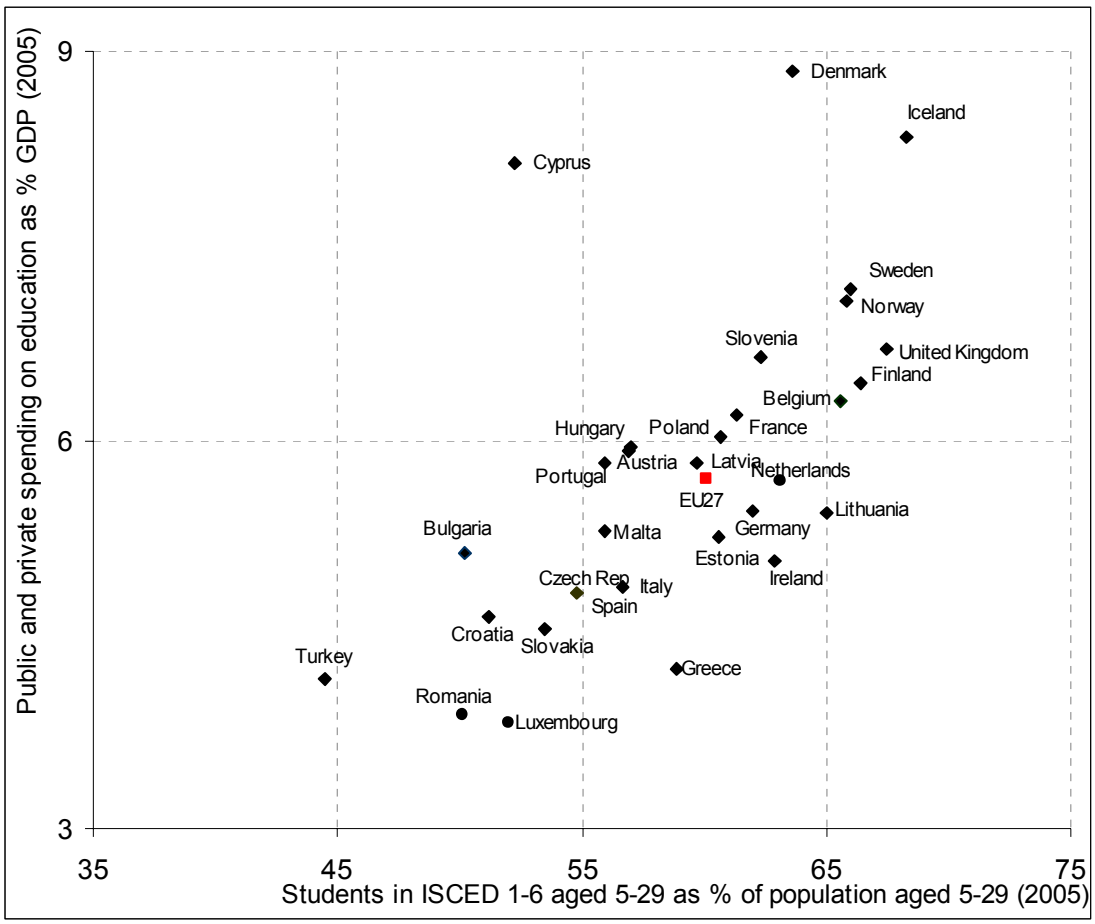
Although it is rather difficult to develop an overall measure of efficiency of investment in education, some aspects of it could be described using available indicators. For instance, the *rate of return to investment in education* represents a more complete measure of the returns in time compared to the initial investment in education.[106] In terms of available measures, PISA remain a good source for outcome-related indicators not only in terms of coverage (25 member states currently participating in the assessment) but also as a way to account for the measurement of individual learning outcomes by testing skills and competences acquired by students towards the end of compulsory education (See also Chapter 7 on Employability). At the tertiary level of education where there is no equivalent to 'PISA-type' of information, the graduation data could be used as output measures. Producing graduates could be considered as a common objective of the national educational systems and there would be value in being able to compare internationally the cost of producing a graduate; though these are not measured on an internationally comparable scale, data could be used as representing the accreditation of the knowledge and skills transferred.

8.2.1 Some measures of efficiency of investment in education

Most governments seem to recognise that the necessary reforms in education and training cannot be accomplished within the current levels and patterns of investment. The upward trend noted between 2000 and 2005 in some countries with low levels of investment in education could be seen as a promising sign of giving priority to investment on education. Also some European countries have made progress in experimenting with new instruments and with incentives for private investment.

Adequate spending levels are especially important for countries that face low levels of participation in education and where the current investment levels may not be adequate to increasing the proportion of population which participates in lifelong learning. As can be seen in Chart 8.2, among the European countries there is a clear link between the overall investment level (measured by the proportion of public and private expenditure on education in the GDP) and the participation patterns in education. Participation in education is much higher in the Nordic countries (which also allocate high proportion of public and private spending) whereas countries like Romania, FYR of Macedonia or Turkey will have difficulties to increase their participation levels from the population if investment levels do not increase.

Chart 8.2 Investment in education per pupil/student (Isced 1-6), 2005

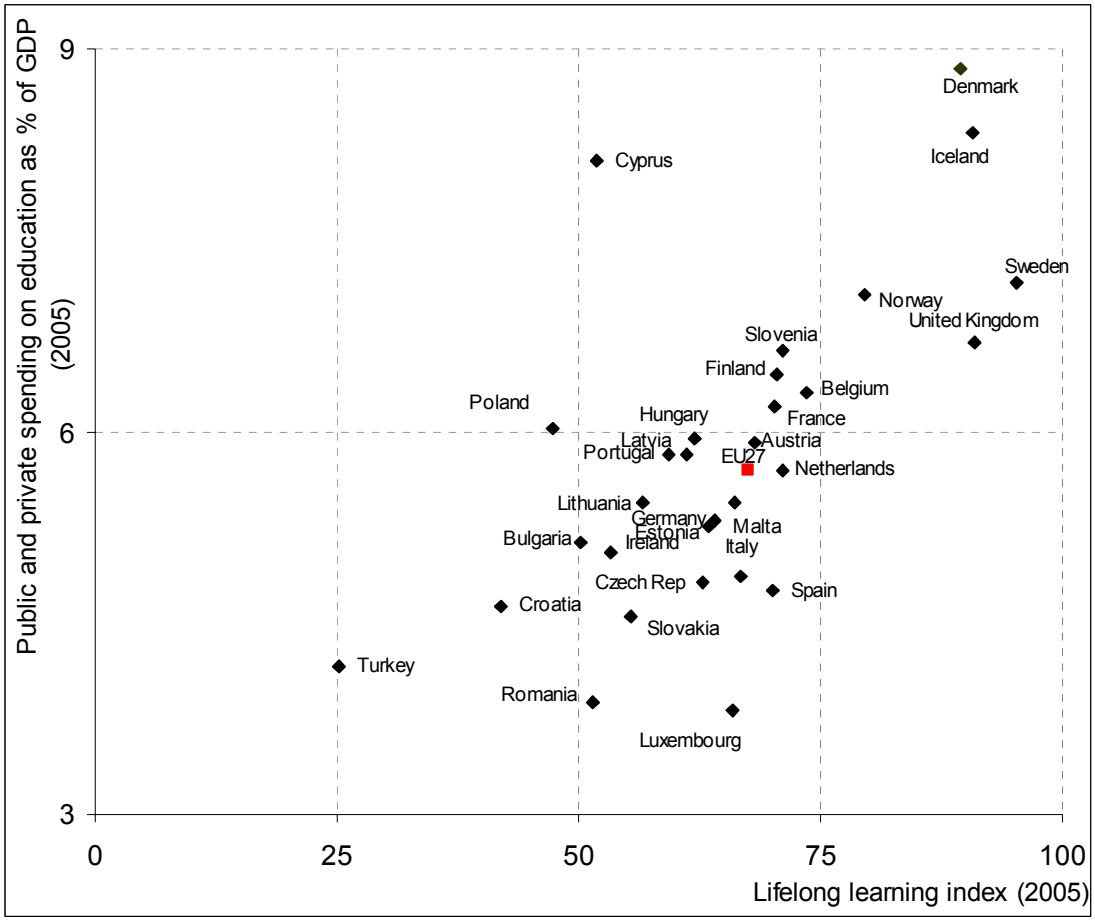


Source: CRELL, Joint Research Centre.

The same pattern can be observed if a composite measure of participation in education is used; progress in participation in lifelong learning (as measured by the LLL index - See Chapter B1)) in the best performing countries (Denmark, Sweden, United Kingdom but also Iceland and Norway) went hand-in-hand with a sustainable higher investment patterns (see Chart 8.3).

With reference to best available country level performance, efficiency estimates can be computed for different combinations of inputs and outputs, showing how much less input a country could use to achieve the same level of output. Input efficiency measures the extent to which inputs can be reduced while maintaining the same level of outputs whereas output efficiency measures the extent to which outputs can be increased with the same level of inputs. Another way to measure efficiency in the use of resources is to look at which countries are most effective in converting financial inputs into a high level of educational outcomes (e.g. individual learning outcomes relative to educational investment or the cost per typical graduate). The efficiency estimates which are available for some European countries are derived from a Data Envelopment Analysis (DEA).[107] The model uses teachers to student ratio, availability of computers, socio-economic and language backgrounds as inputs and PISA 2003 scores as output. They indicate that the potential for increasing learning outcomes while maintaining existing level of resources is high - over 20% across countries for which data exists (OCDE, 2007a, Indicator B7). Research evidences shows however that there is no clear, systematic relationship between the amount of resources which are invested on schools and the student achievement; hence, a substantial gain in individual learning outcomes measured through the test scores is not likely to change with the increase in investment unless changes also take place in the institutional structures of the educational systems.[108]

Chart 8.3. Investment in education / Composite measure of participation in education is used; (LLL-index (2005)



Source : CRELL, Joint Research Centre

The estimates which are available at country level clearly illustrates the role of the indicators used in the model, thus other structural differences across countries can play a role in explaining the results. Efficiency of investment in education can be affected by various country-specific factors, like institutional and structural factors. More often these factors are beyond the control of public authorities but they are essential in the analysis and neglecting them would lead to biased measures of efficiency. For instance, the educational attainment of adult population could influence the educational outcomes.[109] Since countries are different in what concerns the mix of public and private funding of education and while almost 90% of the investment on educational institutions (for all levels combined) in Europe is public, a possible source for cross-country differences in the investment efficiency in education could also derive from this.[110]

The efficiency estimates can be seen as a useful tool for cross-country comparisons but cannot account for all the structural differences at the system level; besides the general public might encounter some difficulties to grasp the results. Some of the findings may point to cross-country differences in the public investment efficiency in education but the comparisons should be treated with care before drawing policy conclusions. Clearly, and after measuring investment efficiency in education, identifying the inefficiency source would be of great importance in policy terms.

The Directorate General Economics and Financial Affairs has established together with the Member States a work programme on the measurement of efficiency and effectiveness of public expenditures. This stepwise approach includes comprehensive data analyses, efficiency calculations and case studies to identify the determinants of efficiency. The Economic Policy Committee Working Group on the quality of public finances has decided that tertiary education is one of the spending items which should be investigated. This ongoing work is based on a Council (Economic and Financial Affairs Council) mandate.

Part C THE COHERENT FRAMEWORK OF INDICATORS AND BENCHMARKS - DEVELOPMENT OF NEW INDICATORS

1. The coherent framework and new indicator developments

The 16 core indicators adopted by the Council in 2007 are mostly covered by statistical data that already exist and which have been used in monitoring the follow-up of the Lisbon objectives in education and training in this report. These indicators are continuously being improved within their specific statistical infrastructures: European statistical system (ESS), UNESCO/OECD/EUROSTAT (UOE) data collection and OECD/PISA survey.

However in the case of the five core indicator areas, mainly concerning the key competences, new data needs to be collected.

For two of the core indicators new surveys are being prepared by the European Union: "**Language skills**" where a European survey is being implemented and "**Learning to learn skills"** where a pilot survey is presently on-going.

In the case of the three other core indicator areas, new surveys are implemented in co-operation with other international organisations. In the areas of "**Adult skills**" and "**Teachers professional development**", EU data needs can be satisfied within new surveys organised by OECD. For the core indicator on "**Civic skills**" a European module has been included in the on-going International Civics and Citizenship Education Study (ICCS) prepared by the International Association for the Evaluation of Educational Achievements (IEA).

In organisational terms, work in these five areas has been undertaken in close co-operation with EU Member States. The Commission has created working groups of national experts in each of the areas and all countries involved in the Lisbon process have been invited to participate in the development of these indicators.

Below we will look further into the indicators based on data provided by the European Statistical System as well look into the development of new surveys in the five mentioned areas. The new surveys will provide the coherent framework. They will give valid and comparable data for the development of core indicators but also provide extensive contextual data and information which will make it possible to carry out secondary analysis producing new knowledge about learning processes in these fields.

2. Indicators based on data provided by the European Statistical System

The statistical infrastructure needed for the production of data within the European Statistical System (ESS) is a combination of surveys, administratively collected data, common instruments and methodologies (manuals, classifications, registers, definitions, concepts etc.).

The UOE data collection

The annual UOE collection of data related to the formal education systems in the Member States (enrolments, entrants, graduations, personnel, class sizes, education finance, etc…) is already used for providing data on some core education indicators as well as for a large number of context indicators.

Referring to the Council Conclusions of May 2007, the UOE data collection provides data on participation in pre-school education, higher education graduates (including the benchmark on MST graduates), cross-national mobility of students in higher education and upper-secondary completion rates of young people (when it concerns graduate rates).

However, the potential of the UOE is not fully exploited, in terms of the use of existing data (for example on initial vocational training, student mobility and investment in education). Hence, more development work on indicators is expected which takes into account quality considerations for improving comparability of already existing data. In addition, the UOE may eventually provide some information on pupils who follow special needs education. This group of pupils are specifically included in the UOE coverage but cannot at the moment be separately identified. Methodological development work will need to be undertaken in order to develop this aspect of the UOE collection. It is therefore a medium term project which at the end will provide data according to national definitions at first.

The Adult Education Survey

The Adult Education Survey (AES) has been carried out in most EU Member States,

candidate countries and EFTA (European Free Trade Association) countries during the period 2005-2008. This EU AES is a pilot experience which for the first time proposed a common EU framework including a standard questionnaire, tools and quality reporting.

The pilot Adult Education survey covers issues such as participation in education and lifelong learning activities including job-related training activities, characteristics of learning activities, self-reported skills as well as modules on cultural participation, language learning and background variables related to main characteristics of the respondents.

The results of the Adult Education survey would enhance the understanding of learning and training patterns in the EU countries and would therefore shed light on lifelong learning issues which is of prime importance in the Lisbon objectives in terms of the knowledge society. It will also specifically report on language skills of the adult population (self-reported).

The Continuous Vocational Training Survey(CVTS)
The CVTS is conducted about every five year in all EU Member States; the third wave was carried out in 2005.

Vocational training is a central theme in European lifelong learning strategies. Enterprise investment in continuing vocational training, designed to promote human capital resources, is a key dynamic of economic performance, competitiveness, and employment in Europe and reflects the role of enterprises in resolving labour market imperfections and employment imbalances. CVTS is a quality data set reflecting the continuing vocational training activities of European enterprises for the assessment of enterprise competitiveness and workforce employability and provide information on:

- labour skills supply and demand,
- the forms, fields and volume of training offered and training needs,
- the enterprises' own internal provision of vocational training as a function of the amount provided on the external market,
- the training opportunities of disadvantaged groups,
- costs of enterprise based vocational training,
- the effectiveness of public funding initiatives.

General household surveys
The above specific surveys are complemented by general sources of information such as the Labour Force Survey (LFS) and the EU Survey on Income and Living Conditions (EU-SILC). Such surveys provide information on education and training which can be linked to socio-economic variables. Furthermore, ad-hoc modules linked to the surveys explore information on education but at more irregular intervals. Other specific sources (ICT household and enterprises surveys) provide data on specialised topics or as background elements.)

The EU Labour Force Survey
The EU Labour Force Survey results provide data on educational attainment levels as well as on lifelong learning through a number of recommended variables on education. These can be combined with for example information on labour market status, regional information and a number of socio-economic background variables.

Three benchmarks are presently based on the EU Labour Force Survey: early school leavers, youth educational attainment levels and participation in lifelong learning. Hence it also provides information on the core indicators underlined by the 2007 Council conclusions regarding participation of adults in lifelong learning and the educational attainment of the population. The data from the EU Labour Force Survey is also used for a large number of context indicators.

In addition LFS's specific ad-hoc modules would be of interest for further studying issues related to the core indicators on education. The 2008 ad-hoc module is on the situation of migrants in the labour market and their immediate descendants whereas the 2009 ad-hoc module covers the entry of young people into the labour market[111]. The latter specifically concerns the relationship between

education and the labour market on issues related to employability.

The ICT household survey
The Information, Communication and Technology survey is an annual survey conducted in all EU member states on ICT issues. It is used in the education domain for looking at educational attainment related to use of ICT instruments. The ICT household survey could provide information on ICT skills although the definition of variables still has to be refined.

The EU Statistics on Income and Living Conditions
EU-SILC provides data from all EU Member States on income and living conditions combined with a large number of socio-economic background variables. The educational attainment level is one of the background variables surveyed. Whereas no core education indicators are based on EU-SILC, the survey does give a fairly wide scope for analysing education for example in relation to income, social exclusion and poverty. Data are for instance published on poverty rates by educational attainment levels.

Also other sources available at Eurostat would provide information on education like the structure of earnings survey, the national account data, the consumer price indexes etc.

Eurostat and the ESS are always concerned to maintain the quality of statistics, notably through the recognition and identification of fields where improvement and further work are needed.

3. Five new international surveys on competences organized by the European Commission and other International organisations

As mentioned above, five cross-national surveys will be implemented in the next couple of years in the core indicators' areas demanded by the Council. The planned schedules for the results' presentation from these surveys are from 2008 to 2013: The pilot survey on Learning to learn skills is presently being implemented and results are expect mid 2008; The Teachers survey (TALIS) of the OECD and the survey of IEA on Civic competences are presently being implemented and results are foreseen in 2009; The European language skills survey has been launched and final results are being planned to be released in 2011 and finally the presentation of the OECD Adult skills survey (PIAAC) is planned for 2013.

In the case of developing new core indicators included in the coherent framework, the Commission considers that it is primordial that all countries follow the Lisbon process and especially all EU Member States and candidate countries. A European indicator based on data from few countries would be of lesser quality and would not be able to play its full role as a tool for monitoring progress and identify good performances.

3.1. Language skills

Languages are the first tool of communication: Knowing more languages opens doors to other cultures and improves intercultural understanding both within Europe and with the rest of the world. The benefits of knowing foreign languages are unquestionable. The ability to understand and communicate in more than one language is a desirable life-skill for all European citizens. Improving language skills in Europe is an important objective as part of the Lisbon growth and jobs strategy.
The recognition of the importance of foreign language competences is continuously still growing. The Barcelona European Council expressed interest in this issue of language learning when it called for “the mastery of basic skills, in particular by teaching at least two foreign languages from a very early age.”(Council, 2002c, part I, 43.1) As a consequence, knowledge of foreign languages is now recognised as one of the key competences that should be intensively cultivated within lifelong learning.

The Commission and the Member States are undertaking a range of activities aimed at promoting good policy approaches for language learning within the Education and Training 2010 strategy. The results of the Action Plan "Promoting language learning and linguistic diversity 2004-2006" (European Commission, 2007d) provides a basis for further action in the field of multilingualism policy both at European and national level.

In the context of the 2008 European Year of Intercultural Dialogue, the Commission has created a Group of Intellectuals for Intercultural Dialogue which has been entrusted with the task of defining the contribution of multilingualism to intercultural dialogue. One of the conclusions set out in their final report called for learning at least two foreign languages with one of them being a "*personal adoptive language*" (European Commission, 2008c).

The future indicator of Language Competences will help to measure how far the EU is advanced on the way towards the multilingualism of the European society and in the achievement of the goal set up by the Barcelona Council.

European indicator of language competences

In its Communication "The European Indicator of Language Competence" (European Commission, 2005c) the Commission outlined a detailed approach to set up a European survey on language competences to collect the data necessary to construct a European language indicator. In May 2006 the Council adopted conclusions on a number of key issues concerning the indicator and stressed that a survey should be carried out as soon as possible. In April 2007 the Commission presented the Communication "Framework for the European survey on language competence" (European Commission, 2007e) which outlined conclusions on all the outstanding issues regarding development and implementation of the European language survey.

The realisation of the first European Survey on Language Competences was attributed - through the call for tender procedure - to the consortium SurveyLang [112]

The European Language Indicator will show the general level of the pupils' foreign language knowledge in the Member States and also show how close we are to achieve our objective of making Europe's citizens multilingual. This will provide invaluable, strategic information to policy makers, teachers and learners in all Member States wishing to improve the teaching and learning of foreign languages, thereby increasing the mobility of Europeans, and with it the competitiveness of the European Union in relation to third countries.

Subsequent rounds will monitor progress towards the objective of improving foreign language learning.

The basic framework for developing the language indicator is as follows:

- In the first round, tests will be developed on three skills: *reading comprehension, listening comprehension* and *writing*. The Commission will take measures to develop instruments to cover the fourth skill – *speaking* – in subsequent surveys.
- The survey will cover tests in the most taught official languages of the European Union, namely *English*, *French*, *German*, *Spanish* and *Italian*.
- The survey should be based on measuring a continuum of increasing levels of competence, from level A1 (basic user) to B2.
- A questionnaire will be developed for pupils, teachers, head teachers and governments to gather contextual information that will allow analysis of factors which might have an impact on pupils' language competences.
- Pupils enrolled in the final year of lower secondary education (ISCED 2) (or the second year of upper secondary education (ISCED 3), if a second foreign language is not taught in lower secondary education) who are taught the language being tested will be surveyed.
- Both computer-based tests, using open source software, and paper and pencil tests will be made available to countries in the survey. The test instrument should permit adaptive testing.

Tests are planned to be carried out in the first half of 2010.

3.2 Learning to learn skills

The Council conclusions of May 2005 and May 2007 invited the European Commission to develop indicators in several fields, including learning to learn (Council, 2005c and

2007a). The 2005 conclusions stated that "with regard to indicator areas (including learning to learn) where no comparable data exist, to present to the Council detailed survey proposals for the development of new indicators strategies should be developed and submitted to the Council".

Following this request, work has been undertaken to develop an instrument for measuring learning to learn skills. A European expert group has been set-up to oversee the development of a suitable instrument. CRELL, the research centre on lifelong learning at the Joint Research Centre, has guided development efforts based on research experiences in a number of Member States and supported by a European research network. The European Network of Policy Makers for the Evaluation of Education Systems has provided its advice on the launching of a pilot survey as a first step in creating a European Wide survey on measuring learning to learn competences.

A suitable instrument has now been developed which express practically the definition of the Recommendation (Council and Parliament 2006) on learning to learn. The framework model is based on three dimensions of learning to learn, namely Cognition, Metacognition and affective aspects of learning to learn.

Learning to learn is a process rather than a specific cognitive outcome. The process of learning clearly requires cognitive skills such as the ability to identify a proposition and critical thinking when addressing a particular problem. In addition it is essential to reflect with accuracy on ones own learning and performance.

The learning to learn framework

The affective dimension;

- Learning motivation, learning strategies and orientation towards change
- Academic self-concept and self-esteem
- Learning environment

The cognitive dimension;

- Identifying a proposition
- Using rules
- Testing rules and propositions
- Using mental tools

Meta-cognition dimension;

- problem solving (metacognitive) monitoring tasks,
- metacognitive accuracy
- metacognitive confidence

Thus metacognition is central to the concept of learning to learn. Finally, and what is equally important for understanding learning to learn is the affective dimension and aspects such as motivation, learning strategies and self-esteem. The affective aspects highlight processes, actions and barriers to learning. This combination of cognitive and affective components makes learning to learn particularly challenging to measure and compare across countries.

During spring 2008, the instrument was piloted in 8 countries, namely Italy, Slovenia, Spain, Austria, France, Finland, Portugal and Cyprus.

Based on an evaluation of the outcome of the pilot test of the instrument, the Commission will propose a way to take the instrument forward towards the development of a European indicator on learning to learn

3.3 Teachers professional development

In the Council Conclusions of May 2005 on New Indicators in Education and Training, the Council requested the Commission to co-operate with the OECD to satisfy EU data needs on the professional development of teachers, with a survey on teachers which was already in preparation by the OECD.

Following this request, an expert group of EU experts was created to define data needs in the professional development of teachers' area. The proposal of this group has been successfully implemented in the OECD survey.

The Teaching and Learning International Survey (TALIS) covers several aspects of the professional development of teachers, including:

- How many days of professional development undertaken during the last 18 month (including the number of compulsory days)
- Type of professional development and perceived impact of the professional development
- Payment for professional development (including private contributions)
- Informal professional development
- Professional development needs
- Obstacles to professional development.

The Commission has encouraged as many EU Member States as possible to take part in the survey to get comparable data. One million euros was set aside in the lifelong learning programme budget to encourage participation of EU Member States, acceding countries and candidate countries. 24 countries have committed to the survey including 19 EU, acceding, and EEA countries.

Analysing the results of TALIS

The first report on the results of TALIS will be published in June 2009. It will include a section on the professional development of teachers.

It has been agreed to publish a thematic report on teachers' professional development. The report will be drafted by the European Commission in collaboration with the OECD secretariat. It will be published as part of TALIS series. The introductory text of the report will set out the EU political context for having information on teachers' professional development; data for non-TALIS EU countries are included.

The report on the professional development of teachers is planned for end 2009.

3.4 Adult skills

If Europe wants to compete in the global knowledge society, it must also invest more in human capital. Skills, knowledge and competences are increasingly seen as crucial prerequisites for the productivity and competitiveness of the European economy. Europeans have to be equipped with the tools they need to adapt to an evolving labour market and this applies to all positions, high- and low-skilled, in both manufacturing and services.

The task of developing an indicator on adult skills was set by the Council conclusions of May 2005 on new indicators in education and training (Council, 2005c). In these conclusions the Council also requested the Commission to cooperate with the OECD to see if the EU's data needs on adult skills can be satisfied within the new survey on adult skills prepared by the OECD (PIAAC). This task was confirmed by the Council conclusions of 25 May 2007 (Council, 2007a). In 2007 the Council also invited the European Commission to report back on indicators on adult skills in due course, in particular on the EU Member States' participation and on the coverage of the EU's data needs.

The EU's data needs on adult skills were identified with the cooperation of the expert group on adult skills set up by the Commission in 2005. Already in 2005 this expert group concluded that it would be both policy-relevant and feasible to assess literacy, numeracy, ICT skills and certain job-related generic skills of adults.

The expert group also recommended examining the relationship between literacy, numeracy, problem-solving and ICT literacy because they might be conceptually and empirically related. At the same time, it was recognised that for some adult skills identified as EU policy-relevant, such as learning to learn, interpersonal and civic competences, cultural awareness and entrepreneurship, more effort needs to be put into developing suitable methods and instruments. Therefore it does not seem feasible to assess them all in the short term. However, the possibility of focusing on some of these skills in the second round of a survey should be examined.

After comparing EU data needs on adult skills with the PIAAC strategy developed by the OECD, the Expert group on adult skills came in its meeting of the 19th January 2007 to the conclusion that the PIAAC survey could meet the EU's data needs on adult skills.

Based on this and to ensure high country coverage in PIAAC and reliable data to enable the measurement of progress in the area of adult skills in all countries following the Lisbon agenda, the European Commission has budgeted of 1.05 million Euros in the 2008 EU budget to support the countries' participation in PIAAC to cover international costs for development work on PIAAC in 2008.

At present, 17 European countries committed themselves to participate in development work focused on PIAAC in 2008[113].

Competencies measured in The Programme for the International Assessment of Adult Competencies (PIAAC)

PIAAC will focus on the key cognitive and workplace skills that are required for successful participation in the economy and the society of the 21st century. There will be a direct test of the level of literacy and numeracy of adult population (age group 16 to 64 is considered), which will be expanded to include new competencies needed in the new information age. An effort will be made to assess in particular the competencies of the low skilled.

With the so called "Job Requirement Approach" (JRA module), individuals will be asked up to which extent they use certain competencies at the workplace. The data collected via this module will allow analysis on the nature of skill gaps and demands in individual countries.

PIAAC will also gather a range of other information to allow the interpretation and analysis of the assessment results. This will include information on the antecedents and outcomes of skills, as well as information on usage of information technology and literacy and numeracy practices generally.

Measurement of key cognitive and workplace skills

At the core of PIAAC will be an assessment of literacy in the information age, understood as the "interest, attitude and ability of individuals to appropriately use socio-cultural tools, including digital technology and communication tools, to access, manage, integrate and evaluate information, construct new knowledge, and communicate with others". To achieve this goal, four areas of competency will be assessed – problem-solving in a technology-rich environment, reading literacy, numeracy, and mastering of the basic building blocks of literacy.

In addition, PIAAC will collect information from respondents concerning their use of key work skills in their jobs – a first for an international study. Questions will cover a range of generic work skills in areas such as computer use, communication, team working and management. It will possible to use the resulting data to investigate differences between countries regarding the utilisation of these skills (for example, in the proportion of adults that are in jobs which require highly specialised knowledge of computers) and to identify the presence and the nature of skill gaps.

Data from PIAAC will allow investigation of the links between key cognitive skills and a range of demographic variables, economic and other outcomes as well as the use of skills in the workplace and other settings. This will constitute a rich evidence base for policy-relevant analysis. In particularly, data from PIAAC will facilitate a better understanding of the labour market returning to education (by taking into account skills), identify the role played by cognitive skills in improving the labour market prospects of the at-risk

populations and examine the efficiency of matching the skills possessed by individuals and the skills demanded in the workplace.

Measurement of the stock of skills
By providing a direct measure of key cognitive skills and measures of formal educational attainment, PIAAC will offer a far more complete and nuanced picture of the amount of human capital in individual countries. In particular, PIAAC will show the population proficiency's distribution according to the types and levels of cognitive tasks they can perform together with the levels of formal education and training achieved. PIAAC will also have links to previous international adult skills assessments. Some analysis of the changes will be possible for countries which participated in either the International Adult Literacy Survey and/or the Adult Literacy and Life skills Survey.

Performance of education and training systems
PIAAC will enhance the understanding of the effectiveness of education and training systems in developing basic cognitive skills and key generic work skills. For younger cohorts, PIAAC will complement the results of PISA by providing measures of skill following completion of initial education. For older cohorts, PIAAC will allow examination and analysis of the processes of skills loss and maintenance and the effectiveness of education and skills formation systems in supporting skills development over the lifecycle.

Countries participating in PIAAC will have the possibility of completing the core components of PIAAC in order to address additional policy issues of national relevance. For example, participating countries will be able to enhance the PIAAC sample by providing reliable data for particular geographic regions or subgroups of the population and by adding questions designed to assess national policy settings.

Participation, management and time schedule
PIAAC is steered by a Board of Participating Countries (BPC) established in 2008 which is supported by staff of the OECD Secretariat. The operational elements of PIAAC are undertaken by external contractor. PIAAC is open for participation for all European countries following Lisbon agenda, including non OECD Member States (under a special regime in cooperation with external consultant).

The survey will take place in 2011, with results being released in early 2013.

3.5 Civic skills
The data available on education and active citizenship are limited in terms of scope, content, frequency and freshness. In the past one important source was the 1999 IEA CIVED survey. The Commission is cooperating with Member States to identify the data needs and to prepare a European module in the forthcoming International Civics and Citizenship Education Study (ICCS) which will be carried out in 2008/09 and will cover the needs for indicators on education and training for active citizenship.

The purpose of the ICCS is to investigate the ways young people are prepared and to a certain extent if they have already begun to perform their roles as citizens. The study will report on student achievement with a test of conceptual understandings and competencies in civics and citizenship. As parts of this test it will also collect and analyze affective learning outcomes variables, including student activities, dispositions and attitudes related to the practise of active citizenship. The proposal is built on the previous IEA studies of civic education and is a response to today's challenges of educating young people in a fluctuating context of cohesion, democracy and civic participation.

The European Module of the ICCS will consist of a questionnaire and a test that will be given to 14 years old in school across Europe in 2009. The outcome of the module will be a comprehensive database about 14 years old Europeans and active citizenship. The study will provide information on the young people's behaviour, attitudes and knowledge.

Behaviour – Active citizenship
The European module will provide a knowledge based on participation rates of young people in European related activities (meeting people or chatting on the internet with other European youngsters, participation rates in cultural and sport activities relating to

other European countries and visits to other European countries.)

Civic competence - Attitudes
This module will deliver a significant amount of information on young people's civic competences (the learning outcomes necessary for active citizenship which includes attitudes, identity and knowledge). The module focus is predominantly on attitudes, for example, attitudes towards pertinent issues in Europe such as intercultural understanding and migration. It will give data on young people's attitudes towards European integration and their attitudes towards learning foreign languages. The study will also ask questions to young people about whether they identify with Europe or a region in Europe.

Civic competence - Knowledge
To complete the questionnaire a limited cognitive test will be included which will give the contextual background for understanding the young people's attitudes, identity and practices. These items will refer to their basic knowledge of European Union affairs such as recognition of the European Union flag, basic understanding of the Euro and self-reported evaluation of their knowledge on Europe. This will enable researchers to explore the extent to which young people's attitudes to Europe are based on knowledge.

Appendix

Measuring key competences

"Competences" refer to a complex combination of knowledge and understanding, skills, values, attitudes that lead to effective, embodied human action in the world, in a particular domain. One's achievement at work, in personal relationships or in civil society are not based simply on the accumulation of second hand knowledge stored as data, but as a combination of this knowledge with skills, values, attitudes and desires that enable us to learn and to successfully use our previous experiences. Competence implies a sense of agency, action and value (Hoskins and Deakin-Crick 2008).

Competencies are broader than knowledge or skills and are acquired in an ongoing, lifelong learning process across the whole range of personal, social and political contexts. The use of the concept of competence stresses the connections between our actions and our surroundings, between the subjective and the objective, and between personal development and achievement. The term competence is strongly value dependent (Westera, 2001) because a competence is expressed in action in the real world, for example a person could be a competent thief, a competent mechanic or a competent carer (Hoskins and Deakin-Crick 2008).

Importantly, competences are expressed in action and by definition are embedded in narratives and shaped by values – this action or way of doing something is more important or desirable than that one because it leads to a particular end. Just as a competence is recognised in the context of the real world the development of competences are also based in real world experiences and take into account the full spectrum of learning opportunities (informal, non-formal and formal learning) throughout the life span (Hoskins and Deakin-Crick 2008).

In general it is much easier to test the outcome of learning rather than the process. This presents particular difficulties when trying to test the concept of learning to learn. This concept from its very definition is described in terms of process rather than an outcome. In contrast the PISA test focuses predominantly on the outcomes of the learning and much less on the process and measuring the affective dimension of a competence. The process of learning requires particular cognitive skills such as the ability to identify propositions, or to think critically about a particular problem, but successful performance in a test situation does not necessarily mean that the individual is disposed to think critically, or is able to identify propositions in the process of learning how to learn. It may simply mean that they have acquired the ability to perform in this specific manner by being taught how to do it. In other words they may be high achievers, but fragile in their capacity for learning how to learn in other domains and in life. So it is possible that testing of cognitive skills alone may indicate little more than the fact that the individual has acquired the knowledge, skills and understanding which is the focus of the formal curriculum. Thus the new European learning to learn test focuses on trying to capture some of this process through measuring the affective and metacognitive dimensions of learning.

Measuring the affective dimension of a competence is challenging. Values, attitudes and intention are difficult to measure because they are personal and subjective. Self awareness and metacognition takes place internally, and is often not articulated. What someone feels about something, what they value, experience intra or interpersonally or what they think about what they do can only be measured in a written test by self-report. By definition therefore, whilst cognitive skills can be measured by the quality of an individual's performance in a written test, and marked against agreed criteria, the strength of an individual's values, attitudes and dispositions in a particular domain is most authentically validated by that individual. A large scale test does not afford the opportunity for this data to be triangulated by observation of behaviour or 360 degree reports from parents, teachers and peers. Nevertheless, there is sufficient evidence to suggest that what individuals report about their values, attitudes and dispositions in relation to a particular domain

is an important indicator of developing a competence. It is also important data for school and system self-evaluation in relation to pedagogical strategies, school culture and leadership.

Paper and pencil tests, however, will always have limitations in term of measuring certain aspects of competences that require interaction with others and/or require observations to measure. One clear example of this is the testing of foreign language competence and in particular the testing of spoken language. Testing spoken language is not possible through paper and pencil tests and what is required is that 'pupils will need to be tested individually on a one-to-one basis by highly trained examiners'. Another example of the limitation of measurement from measuring civic competence is the interactive and observable aspects of this competence such as the ability to lobby and to deliver a persuasive speech. It is necessary to ensure that the aspects of a competence that can not be measured in the paper and pencil test should not be diminished in their importance and when producing tests and indicators from tests on certain competences it is necessary to highlight what can not be tested in order to demonstrate the limitations of the indicator. It remains to be seen whether in the future computer based testing can tackle some of the limitations afforded by paper and pencil tests.

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LIST OF ABBREVIATIONS

General abbreviations

ACCI	the active citizenship Composite indicator
AES	Adult Education Survey
ALL	Adult Literacy and Life-skills Survey
ARWU	The *Academic ranking of World Universities*
CLA	Classification of Learning Activities
CEDEFOP	European Centre for the Development of Vocational Training Centre européen pour le développement de la formation professionnelle
CEPES	Centre Européen pour l'enseignement supérieur/ European Centre for Higher Education (UN organisation based in Bucharest)
CEPS	Centre for European Policy Studies
CHE	Centre for Higher Education Development
CILT	UK National Centre for Languages
CIS	Community Innovation Survey
CIVED	Citizenship Education Survey (IEA study of 1999)
CPS	Current Population Survey
CRELL	Centre for Research on Lifelong Learning
CVET	Continuing vocational education and training
CVT	Continuing Vocational Training
CVTS	Continuing Vocational Training Survey
DEA	Data Envelopment Analysis
DTI	Danish Technological Institute
ECTS	the European Credit Transfer System
ECVET	European Credit for Vocational Education and Training
EEA	European Economic Area (EU 27+Norway, Iceland and Liechtenstein)
EIT	European Institute of Technology
EMU	European Monetary Union
ENQA	European Network of Agencies
EPL	Employment Protection Legislation
ESI	Essential Science Indicator
ETF	European Training Foundation
ESCS	Economic, social and cultural status
ESPAIR	Education par le sport de plein air contre le décrochage scolaire
ESS	European Social Survey
EQF	European qualifications framework
EUA	European University Association
EUR PPS	Euro in purchasing power parities (taking into account different price levels)
EURYDICE	Education Information Network in the European Community
EU-SILC	EU-Statistics on Income and Living Conditions
FTE	Full-time equivalent
FYR	Former Yugoslav Republic (of Macedonia)
GCSE	General Certificate of Secondary Education
GDP	Gross Domestic Product
GERESE	European Group of Research on Equity of Educational Systems
GED	General Education Diploma
GNP	Gross National Product
HEI	Higher Education Institution
IALS	International Adult Literacy Survey
ICCS	International Civic and Citizenship education survey
ICT	Information and Communication Technology
IEA	International Association for the Evaluation of Educational Achievement
ILO	International Labour Organisation (UN-Organisation based in Geneva)
IREG	International Ranking Expert Group
ISCED	International Standard Classification of Education
ISCO	International Standard Classification of Occupations
LFS	Labour Force Survey

MEDSTAT	Regional co-operation programme between the European Union and 10 Mediterranean Countries (Algeria, Egypt, Israel, Jordan, Lebanon, Morocco, Palestinian Authority, Syria, Tunisia and Turkey)
MST	Maths, science and technology
NACE	Classification of Economic Activities in the European Community
NEET	Not in employment, education or training
NER	Net Enrolment Rate
NFER	National Foundation for Educational Research
NGOs	Non-government organisations
OMC	Open Method of Co-ordination
OECD	Organisation for Economic Co-operation and Development
OJC	Official Journal of the European Communities
PIAAC	Programme for the International Assessment of Adult Competencies (OECD study)
PIRLS	Progress in International Reading Literacy Survey
PISA	Programme for International Student Assessment
PLA	Peer Learning Activity
PPS	Purchasing Power Standards
R&D	Research and development
SCI	Science Citation Index
SEN	Special Educational Needs
S&E	Science and engineering
SENDDD	Statistics on students with disabilities, learning difficulties and disadvantages
SES	socioeconomic status
SSCI	Social Science Citation Index
TALIS	Teaching and Learning International Survey (OECD study)
TAFE	Technical and Further Education College
THES	Times Higher Education Supplement
TIMSS	Trends in International Mathematics and Science Study
UIS	UNESCO Institute for Statistics (based in Montreal)
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization (based in Paris)
UOE	UIS/OECD/Eurostat (common data collection)
VET	Vocational education and training
WUR	World University Ranking

Country abbreviations

EU	**European Union**	PT	Portugal
BE	Belgium	RO	Romania
BG	Bulgaria	SI	Slovenia
CZ	Czech Republic	SK	Slovakia
DK	Denmark	FI	Finland
DE	Germany	SE	Sweden
EE	Estonia	UK	United Kingdom
EL	Greece		
ES	Spain	**CC**	**Candidate Countries**
FR	France	HR	Croatia
IE	Ireland	MK	FYR Macedonia
IT	Italy	TR	Turkey
CY	Cyprus		
LV	Latvia	**EEA**	**European Economic Area**
LT	Lithuania	IS	Iceland
LU	Luxembourg	LI	Liechtenstein
HU	Hungary	NO	Norway
MT	Malta		
NL	Netherlands	**Others**	
AT	Austria	JP	Japan
PL	Poland	US/USA	United States of America

STATISTICAL ANNEX

Table Ann A.1: Country positioning in terms of HDI Rank, UN Education Index, and Distance from EU27 average

Country	HDI Rank	Education index	Distance from EU27 average
Austria	15	0.966	--
Belgium	17	0.977	--
Bulgaria	53	0.926	--
Cyprus	28	0.904	--
Czech Republic	32	0.936	--
Denmark	14	0.993	--
Estonia	44	0.968	--
Finland	11	0.993	--
France	10	0.982	--
Germany	22	0.953	--
Greece	24	0.97	--
Hungary	36	0.958	--
Ireland	5	0.993	--
Italy	20	0.958	--
Latvia	45	0.961	--
Lithuania	43	0.965	--
Luxembourg	18	0.942	--
Malta	34	0.856	--
Netherlands	9	0.988	--
Poland	37	0.951	--
Portugal	29	0.925	--
Romania	60	0.905	--
Slovakia	42	0.921	--
Slovenia	27	0.974	--
Spain	13	0.987	--
Sweden	6	0.978	--
United Kingdom	16	0.97	--
Norway	2	0.991	1.04
Iceland	1	0.978	1.02
Belarus	64	0.956	1.00
Russian Federation	67	0.956	1.00
Israel	23	0.946	0.99
Switzerland	7	0.946	0.99
Ukraine	76	0.948	0.99
Georgia	96	0.914	0.96
Armenia	83	0.896	0.94
Croatia	47	0.899	0.94
Moldova	111	0.892	0.93
Albania	68	0.887	0.93
Palestinian Territories	106	0.891	0.93
Macedonia (FYROM)	69	0.875	0.92
Bosnia and Herzegovina	66	0.874	0.91
Jordan	86	0.868	0.91
Turkey	84	0.812	0.85
Tunisia	91	0.75	0.78
Egypt	112	0.732	0.77
Algeria	104	0.711	0.74
Morocco	126	0.544	0.57

Data source: UN Education Index (reference year 2005)

Table Ann B.1.1: Making lifelong learning a reality in European countries (d)
A composite index on participation in lifelong learning for 4-to-64 year olds (i)

2000	EU27	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT	LU	HU
ECE	82.8	99.2 i	67	81	90.6	81.4	78.2	51.1 i	53.9	99	100	100	55.7	60.6	51	94.9	89.5
EDU	57	62.7	48.7	51.6	56.9	60.3	61.4	62.4	52.3	55.8	61	52	51.9	57.2	59.6	49.3	52.7
LLL	7.1 e	6.2 i	:	:	19.4 b	5.2	6.5 b	:	1	4.1 b	2.8	4.8 b	3.1	:	2.8	4.8	2.9
INDEX	62.5	69.9	47.5	57.0	77.3	61.8	62.5	54.8	44.5	64.3	65.9	63.5	47.0	54.1	48.8	60.5	58.4

2000	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK	HR	MK	TR	IS	LI	NO
ECE	100	99.5	79.5	33	72.3	60.3	67.7	:	41.9	72.8	100	:	12.4	:	90.9	:	78.1
EDU	55.8	60.7	55.5	59.2	56.9	48.4	56.3	:	64.2	62.8	64.7		47.9		64.2	:	62.7
LLL	4.5	15.5	8.3	:	3.4	0.9	:	:	17.5 b	21.6	20.5 b	:	:	1	23.5	:	13.3
INDEX	65.1	78.3	61.9	44.3	55.3	44.6	57.2	56.6	62.8	76.5	85.4	40.8	28.5	21.5	85.1	:	69.9

2005	EU27	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT	LU	HU
ECE	85.6	100 i	73.2	91.4	93.5	84.6	84.2	45.4 i	57.8	99.3	100	100	61.4	72.2	56.8	95.4	90.7
EDU	60.1	65.6	50.2	54.8	63.6	62	60.6	62.9	58.9	54.1	61.3	56.7	52.3	59.7	65	52	57
LLL	9.7	8.3	1.3	5.6	27.4	7.7	5.9	7.4	1.9	10.5	7.1	5.8	5.9	7.9	6	8.5	3.9
INDEX	67.6	73.6	50.2	62.8	89.6	66.1	63.5	53.2	49.9	70	70.3	66.8	51.9	61.1	56.6	66.0	61.9

2005	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK	HR	MK	TR	IS	LI	NO
ECE	94.4	73.4	82.5	38.1	84	76.2	75.9	74	46.7	88.9	91.8	44.7	15.4	5	95.3	50.6	88.9
EDU	55.9	63.1	56.9	60.7	55.9	50.1	62.3	53.5	66.4	66	67.5	51.2	48.2	44.5	68.3	:	65.8
LLL	5.3	15.9	12.9	4.9	4.1	1.6	15.3	4.6	22.5	33.4 e	27.5	2.1	:	1.9	25.7	:	17.8
INDEX	64.0	71.1	68.1	47.2	59.4	51.4	71	55.4	70.4	95.2	91	42	29.2	25.3	90.7	:	79.5

Source: CRELL, *Data source:* Eurostat (UOE data collection)

(:) Missing or not available, (d) See definitions, (i) See information notes
(d) The Composite Index of Lifelong Learning in Europe (LLL-INDEX) is a proxy measure of participation in education and lifelong learning for the population aged 4 to 64. One indicator is used for each stages of lifelong learning: the Early Childhood Education (ECE) measures the participation of 4-years old in education at ISCED levels 0 and 1, EDU shows the participation in primary, secondary and tertiary education of population aged 5 to 29 and LLL is the EU benchmark on participation in lifelong learning (i.e. the persons aged 25 to 64 who stated that they received education or training in the four weeks preceding the Labour Force Survey as percentage of population aged 25-64). Each those LLL-INDEX components are assigned equal weight in the overall index in accordance with the principle of considering each stage of lifelong learning participation as being of equal importance
(i) Country notes are available in Table Anns 1.1 and 1.3a. Imputations are used for missing data.

Table Ann.B.1.2: Participation in education and training in European countries (d)

Enrolment of students as percentage of population (i)

2000	EU27	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT	LU	HU
ISCED 0	:	96.2	65.5	:	88.2	:	76	:	70	92.6	99.9	95	53.3 e	:	50	77.5	78
ISCED 1	:	99.5	96.9	:	97.3	:	96.4	93.6	93.5	99.9	99.1	98.4	95.3 e	:	95.7	96.6	87.9
ISCED 2 to 3	:	:	85.7	:	88.5	:	83.8	83.8	81.3	89.4	93.5	87.6 e	88 e	:	91.7	84.3	85.4
ISCED 5 to 6	:	57.8	44.4	29.4	57.6	:	55.6	48.6	51.2	59.3	52.9	48.6	19.6 e	56.3	50.3	9.6	36.7

2000	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK	HR	MK	TR	IS	LI	NO
ISCED 0	88.3	96.6	:	48.6	70.2	68.6	76.9	:	48.9	73.2	75.9	42.3	27.2	:	86.8	:	76
ISCED 1	95.5	99.4	:	96.6	:	93.8	94.5	:	99.7	99.4	100	85.9	92.1	:	98.9	:	99.7
ISCED 2 to 3	:	91.1 e	:	90.4 e	83.9 e	76.3	91.4	:	95	95.6	94.4	82.1	80.8 e	:	83.3	:	94.9 e
ISCED 5 to 6	21.4	52.1	55.8	49.7	48.2	24	55.7	28.7	82.8	67.2	58.1	30.8	22.6	23.2 e	45.5	:	69.3

2005	EU27	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT	LU	HU
ISCED 0	:	100	76.6	:	90.4	:	93.6	:	68	99.8	:	99	60.4 e	85	63.2	84.7	82.7
ISCED 1	:	97.6	92.9	92.5	95.8	:	94.7	94.6	99.6	99.6	98.6	98.6	99.3 e	90.1 e	88	96.7	88.8
ISCED 2 to 3	:	96.7	89.1	:	91.2	:	90.8	86.7	91.1	93.9	99	92.5	94.1 e	:	94.2	83.3	89.9
ISCED 5 to 6	:	62.4	43.7	47.8	80.8	:	66	58.2	90.4	66.2	56.1	65.3	33.2 e	74.9	76.5	:	65.3

2005	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK	HR	MK	TR	IS	LI	NO
ISCED 0	83.3	89.7	83.3 e	53.6	77.8	72.7	76.4	:	59	92.6	66.3	:	31.7	10.4	95.4	:	87.7
ISCED 1	86.3	97.9	96.9 e	96.7	98	91.3	95.7	86.2 e	98.5	97.1	98.7	:	91.8	90.2	98.1	:	98
ISCED 2 to 3	84.8	86.6	:	92.9	81.6	80.8	91	92 e	95.3	99.3	95.3	:	81.3	66 e	88.7	:	95.8
ISCED 5 to 6	31.5	59	48.9	64.1	55.1	45.2	79.5	40.7	91.9	81.6	59.4	:	29.8	31	70.4	:	78.5

Data source: UNESCO Institute for Statistics (UOE data collection)

(:) Missing or not available, (d) See definitions, (e) Estimated data, (i) See information notes

(i) Net enrolment rates (NER) are presented for the pre-primary (ISCED 0), primary (ISCED 1) and secondary (ISCED 2 and 3) levels whereas for the tertiary level (ISCED 5 and 6) the gross enrolment ratio (GER) is shown in the table. For details see the definitions below.

(d) The Gross Enrolment Ratio (GER) is the number of pupils enrolled in a given level of education, regardless of age, expressed as a percentage of the population in the theoretical age group for the same level of education. For the tertiary level, the population used is the five-year age group following on from the secondary school leaving age. The Net Enrolment Rate (NER) is the number of pupils of the theoretical school-age group for a given level of education, expressed as a percentage of the total population in that age-group. When the NER is compared with the GER the difference between the two ratios highlights the incidence of under-aged and over-aged enrolment.

Table Ann B.1.3: Pupils and students participating in education (aged 5-29) as percentage of the corresponding population group. (ISCED 1-6)

	2000	2005	2006
EU-27	56.9	60	59.2
Belgium	62.7	65.6	65.7
Bulgaria	48.7	50.2	49.8
Czech Republic	51.6	55.4	55.2
Denmark	56.9	63.6	63.7
Germany	60.3	62.0	61.9
Estonia	61.4	60.6	59.0
Ireland	62.4	62.9	61.7
Greece	52.3	58.9	62.3
Spain	55.8	54.1	53.9
France	61.0	61.2	61.0
Italy	52.0	56.7	57.3
Cyprus	51.9	52.3	51.0
Latvia	57.2	59.7	58.2
Lithuania	59.6	65.0	63.8
Luxembourg	49.3	50.8	52.6
Hungary	52.7	57.0	57.3
Malta	55.8	55.9	54.9
Netherlands	60.7	63.1	64.5
Austria	55.5	56.9	57.2
Poland	59.2	60.7	60.2
Portugal	56.9	55.9	55.7
Romania	48.4	50.1	50.5
Slovenia	56.3	62.3	62.0
Slovakia	:	53.5	53.5
Finland	64.2	66.4	66.4
Sweden	62.8	66.0	65.6
UK	64.7	67.5	60.1
Croatia	:	51.2	51.5
FYR Macedonia	47.9	48.2	47.5
Turkey	39.6	44.5	46.0
Iceland	64.2	68.3	67.8
Liechtenstein	37.7	55.0	56.6
Norway	62.7	65.8	66.3
United States	58.8	60.8	60.6
Japan	41.3	42.2	43.1

Source: Eurostat (UOE)

Chart Ann B.2.1 Young people (20-24) with upper secondary attainment

	All		Females	Males
	2000	2007	2007	2007
EU-27	76.6	78.1	80.8	75.4
Belgium	81.7	82.6	84.9	82.6
Bulgaria	75.2	83.3	83.6	83.0
Czech Republic	91.2	91.8	92.4	91.3
Denmark	72.0	70.8 b	77.7	64.2
Germany	74.7	72.5	74.4	70.6
Estonia	79.0	80.9	89.6	72.2
Ireland	82.6	86.7	89.7	83.7
Greece	79.2	82.1	87.0 (p)	77.5 (p)
Spain	66.0	61.1	67.3	55.1
France	81.6	82.4	85.0	79.8
Italy	69.4	76.3	80.0	72.7
Cyprus	79.0	85.8	91.0	79.8
Latvia	76.5	80.2	84.1	76.4
Lithuania	78.9	89.0	91.5	86.5
Luxembourg	77.5	70.9	76.4	65.6
Hungary	83.5	84.0	85.6	82.5
Malta	40.9	54.7.	58.6	51..1
Netherlands	71.9	76.2	80.5	71.9
Austria	85.1	4.1	85.4	82.7
Poland	88.8	91.6	93.4	89.7
Portugal	43.2	53.4	60.8	46.3
Romania	76.1	77.4	77.7	77.1
Slovenia	88.0	91.5	94.3	89.0
Slovakia	94.8	91.3	92.1	90.5
Finland	87.7	86.5	88.0	4.8
Sweden	85.2	87.2	89.0	85.4
United Kingdom	76.6	78.1	79.0	77.2
Croatia	90.6	94.6	95.0	94.3
FYR Macedonia	:	:	:	:
Turkey	38.6	46.4	40.0	54.2
Iceland	46.1	49.3	58.7	40.7
Liechtenstein	:	:	:	:
Norway	95.0	93.3 (p)	95.4 (p)	91.2 (p)

Source: Eurostat (LFS), Iceland, Norway: 2006 instead of 2007

(p) provisional value
HR: 2002 instead of 2000, 2005 instead of 2006

Additional notes:
CY: Pupils usually living in the country but studying abroad are not yet covered by the survey. Hence results for CY are understated.
Since the 5 December 2005 release, Eurostat has been applying a refined definition of the "upper secondary" educational attainment level in order to improve the comparability of results in the EU. For the 1998 data onwards ISCED level 3C programmes shorter than two years no longer fall under the "upper secondary" level but come under "lower secondary". This change implies revision of the results in DK (from 2001), ES, CY and IS. However, the definition cannot yet be implemented in EL, IE and AT, where all ISCED 3C levels are still included

Table Ann B.4.1: Countries of origin of foreign students (2006)

	Number of foreign students	Main countries of origin (% of foreign students)
Belgium	47 012	France 37.6, Netherlands 7.0, Morocco 6.4
Bulgaria	8 996	FYR Macedonia 40.4, Turkey 18.6, Greece 8.9
Czech Rep.	21 395	Slovakia 68.5, Russian Federation 3.7, Ukraine 3.2
Denmark	19 123	Norway 11.4, China 10.8, Iceland 8.5
Germany	261 363	China 10.5, Turkey 9.7, Poland 6.2
Estonia	2 151	Russia 52.5, Finland 18.5, Latvia 9.2
Ireland	12 745	United States 16.1, China 13.5, United Kingdom 9.4
Greece	16 558	Cyprus 54.1, Albania 16.0, Bulgaria 3.1
Spain	51013	Morocco 9.2, Colombia 9.0, Argentina 6.6
France	247510	Morocco 11.8, Algeria 8.7, China 6.9
Italy	48766	Albania 22.5, Greece 11.2, Germany 3.4
Cyprus	5630	China 22.0, Bangladesh 14.9, India 14.1, Greece 7.4
Latvia	1423	Lithuania 37.0, Russian Federation 24.9, Sri Lanka 4.8
Lithuania	1226	Poland 14.3, Belarus 8.2, Germany 8.2, Israel 8.2, Lebanon 8.0
Luxembourg	1137	France 34.0, Portugal 15.9, Belgium 14.1, Germany 9.8
Hungary	14491	Romania 23.0, Slovakia 16.0, Ukraine 9.2
Malta	639	China 34.3, Bulgaria 11.9, Russian Federation 6.6
Netherlands	36427	Germany 32.7, China 10.5, Belgium 6.0
Austria	39329	Germany 25.9, Italy 15.7, Turkey 5.3
Poland	11365	Ukraine 21.8, Belarus 13.0, Lithuania 4.3
Portugal	17077	Angola 24.1, Cape Verde 23.9, Brazil 11.2
Romania	11790	Moldova 52.0, Israel 5.2, Greece 5.1
Slovenia	1390	Croatia 43.0, Bosnia-H. 15.8, Serbia-Montenegro 10.1
Slovakia	1733	Czech Republic 27.8, Serbia-Mont. 12.0, Greece 5.7
Finland	8955	China 16.1, Russia 12.4, Estonia 7.0
Sweden	41410	Finland 9.4, Germany 7.4, Norway 3.5
UK	759771	China 6.9, Greece 7.4, Ireland 3.4, India 3.2
Croatia	749	Bosnia-H. 42.7, Slovenia 11.2, Serbia-Mont. 11.1
FYR Maced.	182	Bulgaria 46.2, Albania 30.8, Serbia-Montenegro 14.3
Turkey	19079	Azerbaijan 8.3, Turkmenistan 6.3, Greece 5.
Iceland	715	Germany 13.7, Denmark 8.1, Sweden 7.4
Liechtenstein	573	Austria 46.2, Switzerland 22.5, Germany 17.5
Norway	14296	Sweden 8.2, Denmark 6.0, Russian Federation 5.4
Japan	130124	China 66.4, Korea 17.2, Malaysia 1.5
United States	:	

Source: Eurostat

Table Ann B.4.2: Distribution of graduates by main subject field (2006)

	Science and mathe-matics	Engineering	Education and training	Humanities and art	Social science, business and law	Agriculture and veterinary	Health and welfare	Services
EU-27								
Belgium	6252	7587	14002	7971	2306	1881	15386	1689
Bulgaria	241	7079	3139	3811	217	928	2814	3472
Czech Rep.	5268	10377	10181	5217	19914	2506	8614	3904
Denmark	1085	1148	118	1322	4226	25	1339	996
Germany	47533	56189	39467	66139	98619	7648	84685	13006
Estonia	1085	1148	118	1322	4226	25	1339	996
Ireland	8194	7147	3703	11328	20566	326	649	143
Greece	:	9137	:	:	:	:	:	:
Spain	28707	47181	35117	26166	8083	5211	40726	21745
France	7152	94737	13542	7765	267695	9753	83474	25233
Italy	:	:	:	:	:	:	:	:
Cyprus	375	162	432	384	1687	7	26	551
Latvia	1222	1794	4015	1625	14792	266	1375	13
Lithuania	2561	6892	7089	2891	17739	767	3896	1508
Luxembourg	:	:	:	:	:	:	:	:
Hungary	4037	4669	12962	5269	30529	1829	6151	6109
Malta	:	:	:	:	:	:	:	:
Netherlands	7955	9691	18642	9617	44892	18	19361	5234
Austria	4379	688	4867	3043	10334	72	3444	1285
Poland	42824	42564	87259	43713	214939	8312	39457	24983
Portugal	8134	10871	10859	7423	23102	1303	17374	5194
Romania	7904	27653	4773	20744	84205	4756	1681	3734
Slovenia	601	2168	1578	867	8504	412	1703	1312
Slovakia	3447	6018	647	2515	11026	1156	6873	2685
Finland	3555	8483	2943	4957	9454	873	7997	2363
Sweden	4934	11209	10333	3723	15044	625	15348	131
UK	:	:	:	:	:	:	:	:
Croatia	1304	2388	1505	1948	8153	753	185	2786
FYR Maced.	48	895	1099	871	1746	262	797	351
Turkey	29052	53311	64376	24072	140672	14895	21271	23278
Iceland	271	219	9	379	116	25	398	46
Liechtenstein		46	0	4	72	0	1	0
Norway	2738	2518	5969	2951	9058	375	821	1617
United States	235255	189532	303917	347206	1005047	29129	357323	171597
Japan	31685	194129	7558	162226	288599	23411	136192	103573

Source : Eurostat

Table Ann B.4.3 Mobility of Students - Host Country 2006/07

Country of home institution

	BE	BG	CZ	DK	DE	EE	GR	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK	TOTAL
BE		14	81	126	335	15	49	1.296	715	134	487	13	9	16	0	74	15	331	105	111	223	25	19	9	232	219	327	**5.119**
BG	79		32	19	190	8	60	85	118	12	69	4	0	13	1	8	0	33	25	39	35	0	6	13	24	21	44	**938**
CZ	172	11		180	1.020	20	97	424	606	70	210	2	8	47	2	28	3	263	291	147	233	14	72	96	308	178	409	**5.079**
DK	36	2	16		309	5	14	226	190	27	87	4	13	5	0	13	8	86	56	23	17	0	4	0	13	25	331	**1.587**
DE	326	20	345	575		76	197	5.121	4.319	869	1.824	30	61	66	11	312	41	764	440	669	368	76	71	47	1.106	1.989	3.005	**23.884**
EE	15	13	12	40	73		14	57	56	4	50	3	5	4	0	8	1	18	15	5	19	2	1	2	83	23	27	**572**
EL	125	8	134	69	329	4		380	438	12	258	3	2	0	1	25	0	125	73	31	83	10	7	11	95	76	115	**2.465**
ES	1.250	34	377	619	2.411	24	238		3.230	613	5.124	34	27	64	2	124	27	1.119	365	471	1.214	98	79	55	686	860	2.775	**22.322**
FR	413	29	346	620	2800	56	217	5454		1241	1638	10	36	88	4	240	61	823	396	514	264	213	84	69	879	1257	4673	**22.981**
IE	52	6	30	24	253	1	10	271	439		94	3	0	5	0	6	14	71	39	15	8	2	6	0	38	71	43	**1.524**
IT	600	13	126	363	1.708	54	139	6.350	2.687	261		13	8	50	0	137	89	630	266	269	789	142	23	25	392	468	1.326	**17.195**
CY	11	0	3	0	3	0	28	12	10	0	12		0	0	0	6	0	0	4	0	1	0	0	0	10	6	16	**129**
LV	61	1	9	34	168	7	6	43	61	3	35	4		57	0	4	2	43	27	41	17	8	2	4	74	31	31	**807**
LT	101	14	58	206	316	11	34	118	139	22	137	13	45		0	10	1	54	73	111	98	9	17	17	175	118	74	**2.082**
LU	2	0	1	0	82	0	1	16	15	2	6	0	0	0		1	0	4	7	0	5	0	0	0	6	8	10	**170**
HU	167	4	39	97	751	10	54	210	329	13	275	4	12	3	0		0	176	168	51	69	13	18	11	244	64	161	**3.028**
MT	6	0	2	5	6	0	0	3	13	14	36	0	0	0	0	0		5	2	1	6	1	0	0	4	5	16	**125**
NL	194	10	45	170	375	20	44	818	468	112	269	0	13	15	1	65	5		116	56	98	8	6	0	289	458	554	**4.502**
AT	80	8	82	130	254	18	42	718	504	144	437	2	8	8	0	44	11	212		73	84	14	40	5	257	349	351	**4.032**
PL	520	66	353	629	2.384	38	184	1.171	1.188	167	881	38	42	120	0	109	9	453	286		478	24	101	160	459	373	627	**11.219**
PT	217	17	234	72	188	14	58	1.240	230	18	753	0	17	75	0	78	0	207	55	306		96	74	43	118	111	147	**4.424**
RO	184	0	15	50	442	4	81	356	1.140	17	512	0	0	5	0	60	0	77	59	48	131		7	8	45	33	76	**3.350**
SI	37	2	41	24	153	5	9	117	73	1	70	1	2	10	0	5	0	52	88	54	76	2		9	47	40	31	**972**
SK	53	4	159	24	218	1	30	114	155	6	89	2	6	13	2	25	0	39	75	81	71	0	16		70	27	39	**1.346**
FI	131	12	116	34	593	46	55	493	435	113	158	8	11	19	0	132	9	306	256	58	77	10	37	16		122	466	**3.773**
SE	65	1	33	22	394	9	16	283	438	71	154	3	5	4	0	28	7	232	139	47	36	4	2	0	4		478	**2.532**
UK	123	7	122	146	1.010	14	49	1.632	2.159	26	654	15	0	5	0	27	22	323	139	53	86	21	8	10	202	262		**7.235**
EU	**5.021**	**296**	**2.812**	**4.278**	**16.766**	**460**	**1.726**	**27.008**	**20.155**	**3.972**	**14.319**	**209**	**330**	**692**	**24**	**1.569**	**325**	**6.446**	**3.565**	**3.274**	**4.586**	**792**	**700**	**610**	**5.860**	**7.194**	**16.153**	**153.396**
IS	7	0	11	50	16	2	6	23	8	1	15	0	9	0	0	4	0	7	4	0	0	0	2	0	3	7	14	**189**
LI	3	0	0	6	0	0	0	7	4	2	2	2	2	0	0	0	0	0	0	2	0	0	0	0	6	2	6	**44**
NO	18	0	17	69	191	7	12	177	199	28	75	0	9	1	0	12	2	108	37	20	33	0	4	0	10	23	205	**1.257**
TR	259	0	219	142	905	20	97	249	307	9	368	0	23	115	0	123	4	353	170	434	168	0	46	45	119	133	130	**4.438**

Source : European Commission – DG Education and Culture

Table Ann B.5.1: Percentage of pupils learning two foreign languages, by ISCEL level

	Percentage of pupils at ISCED level 2 (GEN) learning 2 foreign languages, 2005	Percentage of pupils at ISCED level 2 (GEN) learning 2 foreign languages, 2006	Percentage of pupils at ISCED level 3 (GEN) learning 2 foreign languages 2005	Percentage of pupils at ISCED level 3 (GEN) learning 2 foreign languages 2006	Percentage of pupils at ISCED level 3 (Pre vocational and vocational) learning 2 foreign languages 2005	Percentage of pupils at ISCED level 3 (Pre vocational and vocational) learning 2 foreign languages 2006
EU	47.9	52.3	51.4	50.1	27.6s	27.8
Belgium	28.6	28.6	59.9	59.9	41.6	41.5
Belgium Wallonia	0.6	0.5	73.6	73.4	20.0	19.7
Belgium Flanders	48.1	47.9	45.2	45.6	55.8	55.8
Bulgaria	23.9	27.6	76.9	77.4	46.4	47.5
Czech Republic	5.3	9.6	96.2	96.9	26.9	28.6
Denmark	97.1	97.2	72.6	74.6	-	-
Germany	:	:	:	:	:	:
Estonia	67.1	67.1s	34.1	34.1s	83.9	83.9s
Ireland	11.8	11.3	7.8	7.6	2.2	2.8
Greece	94.3	95.0	6.7	6.9	1.4	1.0
Spain	40.4	40.4	28.0	27.3	3.6	2.7
France	50.2	50.7	:	83.2	:	10.2
Italy	43.8	71.9	14.3	18.5	36.2	34.7
Cyprus	:	:	:	:	:	:
Latvia	60.3	62.1	63.7	63.7s	:	:
Lithuania	78.0	78.8	50.9	52.0	13.9	12.2
Luxembourg	47.1	47.2	9.9	9.1	18.8	19.3
Hungary	:	:	:	:	:	:
Malta	73.9	77.5	13.2	18.5	-	-
Netherlands	33.1	32.7	44.4	43.7	:	:
Austria	9.1	9.1s	63.7	63.7s	25.1	25.1s
Poland	:	:	:	:	:	:
Portugal	90.7	95.4	17.1	9.2	28.7	17.1
Romania	94.8	96.0	88.3	88.3	30.3	37.0
Slovenia	24.0	34.1	86.7	92.5	34.6	35.3
Slovakia	12.6	15.7	97.4	97.3	31.2	32.5
Finland	73.8	76.0	39.1	40.1	:	:
Sweden	70.5	71.0	72.4	71.8	10.7	9.9
United Kingdom	6.4	6.2	:	1.6	:	:
Croatia	:	:	85.8	84.1	15.1	15.8
FYR Macedonia	51.5	68.1	:	:	:	:
Turkey	:	:	:	7.6	:	4.5
Iceland	90.3	89.1	39.5	37.7	16.2	17.0
Norway	:	:	:	:	:	:

Source: Eurostat
S: Eurostat calculations

Table Ann B.5.2: Percentage of individuals carrying out computer tasks

	Percentage of individuals who have					
	copied or moved a file or folder	used copy or cut and paste	used basic arithmetic formulae in a spreadsheet	connected and installed new devices	compressed files	written a computer program
EU	56	54	39	40	30	9
Belgium	59	53	40	37	31	8
Bulgaria	30	27	18	9	19	3
Czech Republic	53	49	33	21	29	5
Denmark	74	71	60	57	41	14
Germany	69	68	51	53	34	10
Estonia	49	48	43	34	34	10
Ireland	52	48	35	27	25	6
Greece	40	39	25	26	22	7
Spain	55	54	38	40	39	11
France	59	58	43	49	35	13
Italy	42	42	29	29	26	7
Cyprus	46	43	32	28	25	7
Latvia	51	47	35	19	25	5
Lithuania	48	46	35	25	30	5
Luxembourg	73	70	54	59	56	18
Hungary	54	54	46	38	33	9
Netherlands	76	74	49	58	43	13
Austria	70	68	52	47	44	12
Poland	45	39	27	25	18	5
Portugal	46	43	35	29	29	7
Romania	27	23	10	8	13	3
Slovenia	59	54	47	41	35	8
Slovakia	63	58	46	29	27	5
Finland	64	62	48	49	35	19
Sweden	70	70	49	50	36	11
United Kingdom	65	63	47	50	31	11
Iceland	79	76	70	53	45	14
Norway	65	75	59	64	46	15

Source: Eurostat

Table Ann B.5.3: E-skills Internet

	Percentage of individuals who have					
	used a search engine	sent an email with attached files	posted messages to chat rooms, newsgroups or an online discussion forum	used the Internet to make phone calls	used peer-to-peer file sharing for exchanging movies, music, etc.	created a Web page
EU	57	50	24	15	13	10
Belgium	66	59	21	12	10	8
Bulgaria	32	27	20	16	10	4
Czech Republic	50	49	18	17	6	9
Denmark	80	72	33	25	13	18
Germany	73	60	28	14	8	10
Estonia	61	59	43	28	22	18
Ireland	55	47	12	8	6	6
Greece	36	26	11	6	9	5
Spain	55	45	29	9	20	9
France	59	55	25	29	14	14
Italy	41	38	25	13	13	9
Cyprus	37	29	8	9	7	5
Latvia	58	48	34	21	13	7
Lithuania	50	40	25	25	16	6
Luxembourg	75	70	37	26	24	16
Hungary	54	48	27	13	12	9
Netherlands	83	75	26	25	24	16
Austria	68	58	22	17	9	12
Poland	48	35	23	15	12	7
Portugal	42	37	24	11	11	7
Romania	23	21	12	5	7	4
Slovenia	58	49	24	12	20	12
Slovakia	62	55	21	16	9	9
Finland	79	65	27	22	16	17
Sweden	76	64	19	12	19	13
United Kingdom	67	62	22	10	13	14
Iceland	86	76	37	33	23	31
Norway	80	73	31	22	23	21

Source: Eurostat

Table Ann B.6.1: Difference in performance in reading between pupils with both parents born in the country and neither of parents born in the country, 2006

	Both parents born in the country	Only one parent born in the country	Neither parent born in the country	Difference between both parents born in the country and neither parent born in the country
EU average	542	522		37*
Belgium Fl.	554	530	511	43
Belgium Fr.	511	498	479	32
Bulgaria	552	504	:	48*
Denmark	551	546	511	40
Germany	564	543	515	49
Spain	521	509	481	40
Italy	553	538	524	29
Latvia	543	537	547	+4
Lithuania	540	525	:	15*
Luxembourg	583	:	528	55
Hungary	553	541		12*
Netherlands	553	:	513	40
Poland	522	498	:	24*
Romania	495	452	:	43*
Slovenia	527	517	488	39
Slovakia	533	521	:	12*
Sweden	557	547	520	37
UK (Eng.)	552	539	502	50
Iceland	516	504	462	54
Norway	504	500	446	58

Data source: 2006 PIRLS data set

Additional notes:
* - Calculated based on data for only one parent born in the country for some countries
- To calculate the EU average, data for at least 14 of the EU-27, accounting for at least 60% of the total EU population, must be present. Since the data cover only 12 of the EU-27 countries the average has not been calculated for 2003. Only data statistically significant were taken into account for the calculations of EU averages.

Table Ann B.6.2: Difference in average score in mathematics between native and foreign pupils (first generation), 2003 and 2006

	Difference	
	2003	2006
EU average	60	61
Belgium	100	112
Luxembourg	38	55
Denmark	68	80
Germany	81	65
Ireland	4	19
Greece	43	45
Spain	45	59
France	54	62
Italy	:	44
Latvia	3	:
Luxembourg	38	55
Netherlands	66	58
Austria	61	65
Portugal	61	59
Sweden	64	64
UK	:	25
Norway	52	58
USA	28	37
Australia	:	+11
OECD average	:	49

Source: DTI, OECD (PISA 2003 dataset). The figures concern average performance on the PISA mathematics scale.

Additional notes:
Because the number of observations was insufficient to provide reliable estimates, the data for the countries with very low proportions of foreign pupils have been omitted. The OECD average performance in PISA was fixed as 500 points in 2000. Differences in bold are statistically significant.
To calculate the EU average, data for at least 14 of the EU-27, accounting for at least 60% of the total EU population, must be present. Since the data cover only 12 of the EU-27 countries the average has not been calculated for 2003. Only data statistically significant were taken into account for the calculations of EU averages.

Table Ann B.6:3 Probability of having jobs as manager, professional or technician for women and men aged 25-65 by education level of father

Country	Father not present	Main occupation of father						
		Man+Prof+Tech	Clerks	Sales +Serv	Skilled manual	Unskilled manual	Total	Odd ratio
PT	0,22	0,61	0,43	0,38	0,19	0,14	0,25	3,07
PL	0,21	0,63	0,39	0,31	0,28	0,16	0,29	2,71
ES	0,22	0,54	0,41	0,29	0,23	0,15	0,26	2,57
CY	0,18	0,61	0,50	0,36	0,25	0,19	0,29	2,46
HU	0,28	0,63	0,43	0,35	0,28	0,18	0,32	2,41
CZ	0,29	0,62	0,36	0,30	0,28	0,23	0,35	2,25
SI	0,29	0,63	0,38	0,40	0,31	0,18	0,33	2,24
LT	0,23	0,60	0,40	0,39	0,29	0,26	0,32	2,22
LU	0,35	0,67	0,56	0,35	0,30	0,26	0,42	2,12
GR	0,26	0,54	0,47	0,32	0,29	0,20	0,30	2,12
LV	0,23	0,55	0,39	0,34	0,29	0,24	0,31	2,07
IT	0,29	0,61	0,46	0,37	0,31	0,24	0,36	2,06
FR	0,25	0,62	0,49	0,37	0,32	0,23	0,39	2,05
AT	0,27	0,51	0,41	0,27	0,26	0,19	0,30	2,05
EU-25	**0,31**	**0,62**	**0,50**	**0,38**	**0,33**	**0,23**	**0,38**	**1,99**
SK	0,32	0,60	0,50	0,36	0,32	0,26	0,37	1,93
BE	0,21	0,57	0,43	0,39	0,28	0,24	0,38	1,93
EE	0,30	0,58	0,38	0,32	0,34	0,27	0,37	1,84
SE	0,34	0,60	0,47	0,54	0,28	0,32	0,39	1,84
DK	-	0,62	0,50	0,45	0,37	0,31	0,44	1,73
FI	0,38	0,65	0,53	0,59	0,41	0,30	0,44	1,70
IE	-	0,52	0,52	0,43	0,34	0,19	0,40	1,66
UK	-	0,61	0,54	0,38	0,30	0,27	0,42	1,62
NL	0,44	0,65	0,56	0,48	0,42	0,40	0,52	1,48
DE	0,41	0,65	0,56	0,50	0,44	0,40	0,51	1,46

Source: EU-SILC, 2005

Table Ann B.6.4: Probability of having jobs as manager, professional or technician for men aged 25-65 by education level of father

Country	Father not present	Main occupation of father						
		Man+Prof+Tech	Clerks	Sales +Serv	Skilled manual	Unskilled manual	Total	Odds ratio
PL	0,15	0,58	0,35	0,29	0,21	0,12	0,23	3,25
PT	0,24	0,66	0,42	0,41	0,20	0,15	0,27	3,20
ES	0,26	0,59	0,46	0,30	0,23	0,15	0,28	2,76
LV	0,17	0,50	0,28	0,22	0,20	0,18	0,24	2,65
HU	0,27	0,58	0,37	0,35	0,23	0,14	0,28	2,63
CZ	0,22	0,61	0,33	0,22	0,24	0,22	0,32	2,56
LT	0,18	0,53	0,37	0,31	0,22	0,18	0,25	2,55
SI	0,25	0,61	0,40	0,34	0,27	0,17	0,30	2,44
CY	0,25	0,68	0,58	0,36	0,29	0,23	0,32	2,43
GR	0,21	0,55	0,48	0,30	0,26	0,20	0,29	2,28
IT	0,28	0,62	0,43	0,37	0,29	0,24	0,34	2,21
AT	0,30	0,61	0,50	0,30	0,32	0,21	0,35	2,13
SK	0,27	0,53	0,46	0,26	0,25	0,21	0,31	2,10
EU-25	**0,30**	**0,64**	**0,52**	**0,40**	**0,31**	**0,22**	**0,38**	**2,08**
EE	0,26	0,51	0,21	0,21	0,26	0,18	0,30	2,07
LU	0,34	0,74	0,65	0,47	0,36	0,25	0,47	2,06
FR	0,29	0,66	0,52	0,46	0,35	0,25	0,42	1,95
BE	0,23	0,60	0,49	0,35	0,30	0,24	0,39	1,95
SE	0,34	0,61	0,60	0,65	0,29	0,38	0,41	1,76
DK	-	0,62	0,54	0,46	0,36	0,30	0,44	1,74
FI	0,39	0,64	0,62	0,66	0,40	0,31	0,44	1,69
IE	-	0,60	0,63	0,50	0,39	0,23	0,47	1,65
NL	0,44	0,71	0,58	0,51	0,44	0,43	0,56	1,57
UK	-	0,62	0,59	0,43	0,28	0,30	0,45	1,52
DE	0,39	0,67	0,60	0,59	0,44	0,38	0,52	1,50

Source: EU-SILC, 2005

Table Ann B.6.5: Probability of having jobs as manager, professional or technician for women aged 25-65 by education level of father

Country	Father not present	Main occupation of father						
		Man+Prof+Tech	Clerks	Sales +Serv	Skilled manual	Unskilled manual	Total	Odds ratio
PL	0,26	0,67	0,43	0,34	0,34	0,21	0,34	2,37
PT	0,21	0,56	0,43	0,35	0,19	0,13	0,24	2,91
ES	0,17	0,48	0,35	0,27	0,22	0,16	0,25	2,35
LV	0,28	0,59	0,52	0,46	0,37	0,29	0,37	1,78
HU	0,30	0,68	0,49	0,35	0,34	0,21	0,36	2,26
CZ	0,35	0,63	0,40	0,39	0,31	0,24	0,38	2,03
LT	0,28	0,67	0,43	0,47	0,35	0,32	0,38	2,03
SI	0,33	0,64	0,36	0,46	0,35	0,19	0,36	2,06
CY	0,11	0,54	0,44	0,35	0,21	0,15	0,25	2,57
GR	0,31	0,53	0,46	0,35	0,33	0,20	0,32	1,95
IT	0,29	0,60	0,50	0,36	0,34	0,26	0,37	1,90
AT	0,23	0,37	0,30	0,23	0,18	0,17	0,23	1,90
SK	0,35	0,66	0,54	0,43	0,38	0,30	0,42	1,83
EU-25	**0,33**	**0,60**	**0,47**	**0,35**	**0,34**	**0,24**	**0,38**	**1,90**
EE	0,33	0,63	0,53	0,41	0,40	0,34	0,43	1,70
LU	0,35	0,60	0,47	0,18	0,24	0,26	0,37	2,24
FR	0,21	0,59	0,46	0,28	0,29	0,20	0,35	2,18
BE	0,19	0,54	0,37	0,44	0,27	0,23	0,36	1,92
SE	0,33	0,59	0,38	0,42	0,27	0,26	0,37	1,96
DK	-	0,63	0,46	0,44	0,37	0,33	0,45	1,72
FI	0,38	0,66	0,45	0,53	0,43	0,30	0,44	1,72
IE	-	0,45	0,46	0,36	0,30	0,16	0,34	1,63
NL	0,45	0,58	0,55	0,43	0,40	0,38	0,49	1,36
UK	-	0,60	0,49	0,34	0,31	0,24	0,40	1,74
DE	0,44	0,64	0,52	0,41	0,44	0,43	0,51	1,44

Source: EU-SILC, 2005

Note: Countries are ranked in the same order as in Table Ann 18

Table Ann B.7.1: Educational attainment of the adult population aged 15-64 in %

	2000			2007			Change between 2000 and 2007		
	Percentage of the population with low, medium and high educational attainment			Percentage of the population with low, medium and high educational attainment					
	Low	Medium	High	Low	Medium	High	Low	Medium	High
EU-27	38.0	45.0	17.0	32.7	46.7	20.6	-5.3	1.7	3.6
Belgium	43.0	33.2	23.8	34.8	37.1	28.1	-8.3	3.9	4.4
Bulgaria	36.4	48.4	15.2	28.7	52.8	18.5	-7.7	4.4	3.3
Czech Republic	19.6	70.9	9.5	16.2	72.2	11.6	-3.5	1.3	2.1
Denmark	27.0	51.4	21.6	31.0	41.9	27.1	4.0	-9.5	5.5
Germany	21.5	57.1	21.4	23.0	56.3	20.7	1.5	-0.8	-0.7
Estonia	22.2	54.1	23.7	20.4	52.4	27.3	-1.8	-1.7	3.6
Ireland	43.8	37.5	18.7	34.9	37.0	28.1	-8.9	-0.5	9.5
Greece	48.4	37.6	14.0	41.0	39.7	19.2	-7.4	2.1	5.2
Spain	59.1	19.9	21.0	49.3	23.7	27.0	-9.8	3.8	6.0
France	40.1	40.1	19.8	33.6	42.1	24.3	-6.5	2.1	4.4
Italy	55.2	36.7	8.1	48.6	39.3	12.0	-6.5	2.6	4.0
Cyprus	40.7	37.2	22.1	31.1	39.1	29.7	-9.6	1.9	7.6
Latvia	24.1	61.0	14.9	23.5	57.6	18.8	-0.6	-3.3	3.9
Lithuania	23.5	41.7	34.7	19.6	56.3	24.1	-4.0	14.6	-10.6
Luxembourg	38.5	44.8	16.7	38.7	38.6	22.7	0.2	-6.2	6.0
Hungary	33.3	55.2	11.5	26.2	58.5	15.4	-7.1	3.3	3.9
Malta	79.4	15.6	4.9	71.4	17.0	11.5	-8.0	1.4	6.6
Netherlands	37.4	41.9	20.7	31.6	41.7	26.7	-5.8	-0.2	6.0
Austria	28.3	59.4	12.3	25.2	60.0	14.8	-3.1	0.6	2.5
Poland	26.6	64.3	9.1	20.4	63.9	15.7	-6.2	-0.3	6.5
Portugal	79.0	13.4	7.6	71.3	16.7	12.0	-7.7	3.3	4.4
Romania	35.9	56.7	7.4	30.9	59.1	9.9	-5.0	2.4	2.6
Slovenia	29.4	57.8	12.8	22.2	59.3	18.5	-7.2	1.5	5.7
Slovakia	22.1	69.7	8.2	18.4	69.7	11.9	-3.7	0.0	3.7
Finland	30.8	41.6	27.5	25.6	44.9	29.5	-5.2	3.2	2.0
Sweden	26.8	46.8	26.8	20.6	52.4	27.0	-5.7	5.6	0.2
United Kingdom	35.5	39.2	25.3	27.8	44.1	28.2	-7.7	4.8	2.9
Iceland	50.6	30.4	19.0	43.8	32.2	24.0	-6.8	1.8	5.0
Norway	17.1	54.2	28.7	28.9	42.0	29.1	11.8	-12.3	0.4

Table Ann B.7.2.: Labour force statistics by educational attainment of 15- to 24-year-olds (d) 2007

EU country (2007)		Low educational attainment level			Medium educational attainment level			High educational attainment level		
		Activitiy	Employment	Unemployment	Activity	Employment	Unemploy-ment	Activity	Employment	Unemploy-ment
EU average	**EU-27**	31.6	25.3	19.9	56.3	48.8	13.3	69.7	61.7	11.4
Belgium	**BE**	17.0	12.1	29.1	42.3	34.9	17.5	75.2	66.5	11.5
Bulgaria	**BG**	9.5	6.7	29.5	50.0	43.8	12.3	74.3	67.4	:
Czech Republic	**CZ**	6.5	4.4	31.2	53.9	49.2	8.6	53.7	48.9	8.8u
Denmark	**DK**	65.4	59.6	8.8	82.3	77.5	5.8	82.8	76.8	:
Germany	**DE**	39.1	33.0	15.5	70.2	64.0	8.6	83.5	78.1	:
Estonia	**EE**	20.1	16.4	:	55.0	51.0	:	81.2u	77.5u	;
Ireland	**IE**	27.4	22.6	17.5	70.6	65.4	7.4	84.1	79.5	5.5u
Greece	**EL**	21.5	17.6	17.8	34.7	26.5	23.7	83.2	56.6	32.0
Spain	**ES**	52.4	41.7	20.4	46.3	38.6	16.6	68.1	58.8	13.6
France	**FR**	23.5	16.5	29.9	49.2	41.5	15.6	56.0	49.2	12.1
Italy	**IT**	20.6	16.0	22.5	43.8	35.5	19.0	33.0	26.6	19.3
Cyprus	**CY**	18.3	16.1	12.3u	53.3	48.5	9.0	83.8	74.9	10.7u
Latvia	**LV**	21.7	18.1	16.8u	63.2	57.2	9.4	85.5	81.8	:
Lithuania	**LT**	9.0	8.0	:	38.9	35.7	8.1u	75.8	71.1	:
Luxembourg	**LU**	19.3	15.1	21.4u	35.1	31.8	:	58.2u	49.4u	:
Hungary	**HU**	9.7	6.7	30.5	38.7	32.7	15.6	80.0	70.2	12.3u
Malta	**MT**	47.4	39.4	16.9	57.9	53.0	:	83.0	76.4	:
Netherlands	**NL**	64.4	59.0	8.4	81.2	78.0	3.9	85.8	83.5	:
Austria	**AT**	46.7	40.9	12.4	74.6	70.0	6.2	81.3	73.0	:
Poland	**PL**	8.9	6.9	22.8	51.0	39.9	21.7	71.5	57.2	20.0
Portugal	**PT**	41.3	34.6	16.2	38.3	32.7	14.8	77.0	57.1	25.9
Romania	**RO**	20.2	16.5	18.6	40.3	31.8	21.0	80.4	63.4	21.1
Slovenia	**SI**	18.9	16.4	13.2u	56.5	51.2	9.4	87.6	79.4u	:
Slovakia	**SK**	7.2	2.5	66.2	56.4	47.8	15.3	76.5	62.0	19.0
Finland	**FI**	34.9	25.9	25.8	72.8	64.2	11.8	87.7	78.5	:
Sweden	**SE**	45.1	31.7	29.7	75.5	66.4	12.4	68.2	59.9	12.3
United Kingdom	**UK**	58.0	42.5	26.7	70.0	62.2	11.3	85.0	86.6	7.5

Source: Eurostat (LFS) , database extraction: 1 July 2008

Additional notes:
m: Missing or not available.
u: Unreliable data.
DE and FR: provisional data
(d) The indicators are based on the EU Labour Force Survey. The employment rate is the number of employed as a percentage of the corresponding age-group population. The activity rate is the number of persons who are in the labour force (i.e. are either employed or unemployed) as a percentage of the corresponding total population (the employed, the unemployed and the inactive) by single year of age or by age group. Persons are regarded as participating in the labour market if they were either employed or unemployed in the four weeks prior to being questioned in the Labour Force Survey (LFS). The unemployment rate is the number of unemployed as a percentage of the labour force (employed an unemployed). The unemployed are persons who: were without work during the reference period of the survey AND were available for work (i.e. could start a job within two weeks) AND had been actively seeking work during the past four weeks.

Table Ann B.7.3. Labour force statistics by educational attainment of 25- to 64-year-olds (d)

EU country (2007)		Low educational attainment level			Medium educational attainment level			High educational attainment level		
		Activity	Employment	Unemployment	Activity	Employment	Unemployment	Activity	Employment	Unemploy-ment
EU average	**EU-27**	63.0	57.2	9.2	79.4	74.6	6.0	88.5	85.3	3.6
Belgium	**BE**	56.2	49.8	11.3	79.1	74.2	6.2	87.8	84.9	3.3
Bulgaria	**BG**	53.5	44.5	16.8	79.7	75.7	5.0	87.1	85.1	2.2
Czech Rep	**CZ**	56.4	45.7	19.1	79.5	76.1	4.3	86.6	85.2	1.5
Denmark	**DK**	69.5	66.6	4.2	84.7	82.5	2.5	90.5	87.8	2.9
Germany	**DE**	66.9	54.9	17.7	81.6	74.9	8.2	89.5	86.1	3.7
Estonia	**EE**	62.1	56.7	:	83.2	79.4	4.6u	89.5	87.4	:
Ireland	**IE**	62.5	58.7	6.1	79.7	77.1	3.5	88.7	86.7	2.3
Greece	**EL**	64.5	59.9	7.0	75.7	69.5	8.2	88.3	83.0	6.0
Spain	**ES**	66.6	60.6	9.0	81.9	76.3	6.8	88.6	84.4	4.8
France	**FR**	64.6	58.0	10.2	80.6	75.8	5.9	87.8	83.5	4.8
Italy	**IT**	56.4	52.8	6.3	77.7	74.5	4.1	83.7	80.2	4.2
Cyprus	**CY**	69.1	66.1	4.4	82.0	79.3	3.2	90.1	87.6	2.8
Latvia	**LV**	65.5	59.7	8.8	82.2	77.7	5.4	90.7	87.3	3.7
Lithuania	**LT**	52.8	49.1	6.9	79.6	75.8	4.8	91.1	89.4	1.8u
Luxembourg	**LU**	65.0	62.3	4.1	76.1	73.9	2.8u	87.1	84.5	3.0u
Hungary	**HU**	45.8	38.5	16.0	74.6	70.2	5.9	82.5	80.4	2.6
Malta	**MT**	52.2	48.8	6.6	84.3	82.3	:	88.9	87.9	:
Netherlands	**NL**	64.5	61.9	4.0	82.5	80.3	2.7	89.3	87.7	1.8
Austria	**AT**	62.5	57.9	7.4	79.5	76.9	3.3	88.9	86.8	2.4
Poland	**PL**	48.6	41.0	15.5	71.5	65.2	8.7	87.8	84.5	3.8
Portugal	**PT**	77.8	71.6	8.0	85.7	79.8	6.8	92.0	85.9	6.6
Romania	**RO**	57.7	53.8	6.6	74.2	70.1	5.5	88.8	86.9	2.2
Slovenia	**SI**	60.1	56.2	6.5u	78.5	75.1	4.3	90.6	87.7	3.2
Slovakia	**SK**	49.7	29.1	41.5	80.0	73.2	8.6	87.2	84.2	3.4
Finland	**FI**	64.4	58.6	8.9	81.1	76.2	6.1	88.4	85.2	3.6
Sweden	**SE**	71.5	66.6	7.0	86.8	83.1	4.2	91.6	88.5	3.4
United Kingdom	**UK**	68.3	64.2	5.9	84.1	81.1	3.6	89.8	87.9	2.1

Source: Eurostat (LFS), database extraction: 1 July 2008

Additional note:
d: See definitions in Table Ann 8.2a.
m: Missing or not available.
p: Provisional data.
u: Unreliable data.

Table Ann B.7.4: Schooling (d) and earning differentials (i) in European countries in 2005 (p)

Earning differentials (in percentages) for gross monthly income of individuals with 'High', respectively 'Low' level of education compared to income of individuals with 'Medium' level of education

	EUR 21	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT	LU	HU
Low	- 18	- 15	:	- 34	- 9	- 29	- 17	- 24	:	:	- 8	:	- 25	:	- 14	- 30	- 22
High	44	28	:	54	25	37	43	45	:	:	50	:	45	:	69	56	85

	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK	HR	MK	TR	IS	LI	NO
Low	:	- 16	- 31	- 26	:	:	- 38	- 25	- 11	- 16	- 25	:	:	:	- 17	:	- 17
High	:	32	39	56	:	:	78	32	35	25	31	:	:	:	32	:	23

Source: CRELL estimates based on EU SILC data

(:) Not available, (d) See definitions, (i) See information notes, (p) Provisional data

(d) The 3 levels of educational attainment are based on ISCED levels, as follows: 'Low' includes ISCED levels 0 to 2 and 3C short, 'Medium' includes ISCED levels 3AB, 3C long and 4 and 'High' includes ISCED levels 5 and 6

(i) Schooling wage premium (Mincerian returns to schooling) for individuals aged 16 to 70 who were full time employed, worked at least 15 hours per week in the main job and whose gross earning during reference period was positive. Gross monthly income is computed as cash or near cash income received divided by the number of months worked full-time during the reference period.

Table Ann B.8.1: Public expenditure on education as a percentage of GDP in third countries

Public expenditure on all levels of education as a % of GDP

	EU 27	USA	Japan	China	India	Russian Fed.	Albania	Serbia*	Bosnia-Herzegovina	Ukraine	Rep. Of Moldova
2000	:	4.94 i	3.82 i	:	4.41	2.94	:	3.29	:	4.17	4.0
2004	5.07 e	5.12 i	3.62 i	:	3.75	3.54 e	:	:	:	5.31	:
EU-Med*	**Algeria**	**Egypt**	**Israel**	**Jordan**	**Lebanon**	**Morocco**	**Palestinian Aut.**	**Syrian AR**	**Tunisia**	**Libyan AJ**	
2000	:	:	7.01	:	2.0	6.40	:	:	6.85 e	:	
2004	:	:	6.89	:	2.6	6.32	:	:	7.45	:	

Data source: UNESCO Institute for Statistics (UOE data collection)

(:) Missing or not available, (e) Estimated data, (i) See information notes
(*) Include data for Montenegro
(**) This group include 9 countries and territories which are part of the Euro-Mediterranean partnership (Algeria, Egypt, Israel, Jordan, Lebanon, Morocco, Palestinian Authority, Syrian Arab Republic, and Tunisia) and Libyan Arab Jamahiriya, which has an observer status

Additional notes:
US: Adjustment of GDP to the financial year that is running from 1st of July to 30th of June; expenditure on educational institutions from public sources
JP: Adjustment of GDP to the financial year that is running from 1st of April to 31st of March

Table Ann B.8.2: Private expenditure on educational institutions as a percentage of GDP in third countries

Expenditure on educational institutions (all levels of education) from private sources as a % of GDP (i)

	EU 27	USA	Japan	China	India	Russian Fed.	Albania	Serbia*	Bosnia and Herzegovina	Ukraine	Rep. of Moldova
2000	:	2.11	1.19	:	0.24	:	:	:	:	:	1.60
2004	0.63 e	2.46	1.23	:	1.26	:	:	:	:	:	:
EU-Med*	**Algeria**	**Egypt**	**Israel**	**Jordan**	**Lebanon**	**Morocco**	**Palestinian Aut.**	**Syrian AR**	**Tunisia**	**Libyan AJ**	
2000	:	:	1.70	:	:	:	:	:	:	:	
2004	:	:	2.06	:	:	:	:	:	:	:	

Data source: UNESCO Institute for Statistics (UOE data collection)

(:) Missing or not available, (e) Estimated data, (i) See information notes
(*) Include data for Montenegro
(**) This group include 9 countries and territories which are part of the Euro-Mediterranean partnership (Algeria, Egypt, Israel, Jordan, Lebanon, Morocco, Palestinian Authority, Syrian Arab Republic, Tunisia) and Libyan Arab Jamahiriya, which has an observer status

Additional notes:
US: Adjustment of GDP to the financial year that is running from 1st of July to 30th of June; expenditure on educational institutions from public sources
JP: Adjustment of GDP to the financial year that is running from 1st of April to 31st of March

NOTES

[57] The denominator consists of the total population of the same age group, excluding no answers to the questions "highest level of education or training attained" and "participation in education and training". In this indicator, a very low level of upper secondary education (ISCED 3C short courses) is taken to mean a level which is not sufficient for full participation in the knowledge based economy. However, the ratio of 18 to 24 years old with this qualification in the EU is very low: non-existent in some countries and no higher than 2% in the EU as a whole. The numerators and the denominators both come from the EU Labour Force Survey.

[58] Data for Slovenia are unreliable because of the small sample size.

[59] Peer learning activities are organised by the European Commission in selected areas within the Education and Training 2010 programme. From 2006 on, site visits within this cluster were organised in Belgium, Ireland and Hungary.

[60] Nationality is interpreted as citizenship. Citizenship is defined as the particular legal bond between an individual and his/her State acquired by birth or naturalisation, whether by declaration, option, marriage or other means according to national legislation. It corresponds to the country issuing the passport. For persons with dual or multiple citizenship who hold the citizenship of the country of residence, that citizenship should be coded. The variable about nationality takes into account own-country national, a person from another EU15 country or a person from a non-EU15 country. The comparability of the data is limited because this variable is linked to the Member State's specific laws on naturalisation.

[61] See http://www.standaardsite.nl/createsite/page/createpage.asp?b_id=13758&pg=9

[62] See http://www.acceleratedschools.net/

[63] See http://www.uscharterschools.org/pub/uscs_docs/index.htm

[64] See http://www.ssb.no/english/subjects/04/02/30/vgogjen_en/fig-2007-09-20-01-en.html

[65] The Learning County: Vision into Action. Department for Education, Lifelong Learning and Skills.

[66] The USA has a longer tradition of and more comprehensive approach to measuring dropouts using several types of rate. The "status dropout" rate is a cumulative rate that estimates the proportion of young adults aged 16 to 24 in the civilian, non-institutionalised population who are dropouts (i.e. who are not enrolled in a high school programme and have not received a high school diploma or obtained an equivalent certificate), regardless of when they dropped out. The "event dropout" rate measures the number of "new" dropouts in a given year, i.e. the percentage of young people aged 15-24 who dropped out of grades 10 and 12 in the previous year. The "cohort dropout" rate measures what happens over time for a particular cohort of pupils sharing similar characteristics. Combining these measurements yields a more robust understanding of the situation with early school leaving. The limitations of one indicator are counterbalanced by the advantages of another.

[67] Using data from the Current Population Survey (CPS), a US household survey similar to the EU's LFS, status dropout rates show the percentage of young people aged 16-24 who are not in school and who have not gained any high school credential (either diploma or equivalent credential such as a General Educational Development certificate). That means that not only the age groups observed are different (18-24 for the EU and 16-24 for the USA), but also the definition (participation in formal, non-formal and informal education in the EU in contrast to only formal education in the US definition).

[68] http://www.un.org/disabilities/countries.asp?navid=17&pid=16

[69] See information on methodological difficulties of this approach in Annex

[70] Additional resources are those made available over and above the resources generally available to pupils regardless of the needs of pupils likely to have particular difficulties with access to the standard curriculum. Resources can be of many different kinds, including personnel (e.g. additional teachers), material (e.g. hearing aids, Braille or conversion of classrooms) and financial (e.g. favourable funding formulae) OECD (2004). Equity in Education — Students with Disabilities, Difficulties, and Disadvantages: Statistics and Indicators. Paris.

[71] Segregation refers to education where the pupil with special needs follows education in separate special classes or special schools for the largest part (80% or more) of the school day.

[72] Data are collected and published by the Agency according to their date of collection and refer to a period longer than one year. As of April 2008 confirmed data were available from Austria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Malta, Norway, Poland, Portugal, Slovenia, Spain, Sweden, Switzerland, UK (England) and UK (Scotland). All information in this report is based on this confirmed data. It might be that data from some other countries will be available for later drafts of this report.

[73] 2006 data covered 28 countries, but not Slovenia or the UK (Scotland).

[74] For all calculations, percentages are calculated against the total number of pupils in compulsory education. Raw data are available in the Agency publication SEN Data 2008 (in press).

[75] See also Soriano, V. (Editor) (2002) Transition from School to Employment. Main problems, issues and options faced by students with special educational needs in 16 European countries. Middelfart: European Agency for Development in Special Needs Education

[76] The percentage of pupils in compulsory education who are taught in segregated settings because of their special education needs is calculated as a percentage of the total compulsory school-age population. The data show public and private grant-aided provision but exclude pupils educated in private non-grant-aided schools. This indicator takes two reference periods. Although national definitions of segregated setting may differ; the definition applied here is that the student spends most of the school week in a non-mainstream (separate) school or class.

[77] Additional resources are those made available over and above the resources generally available to pupils regardless of the needs of pupils likely to have particular difficulties with access to the standard curriculum. Resources can be of many different kinds, including personnel (e.g. additional teachers), material (e.g. hearing aids, Braille or conversion of classrooms) and financial (e.g. favourable funding formulae) OECD (2004). Equity in Education — Students with Disabilities, Difficulties, and Disadvantages: Statistics and Indicators. Paris.

[78] Pupils with disabilities or impairments viewed in medical terms as organic disorders attributable to organic pathologies (e.g. related to sensory, motor or neurological defects). OECD (2005). Students with Disabilities, Difficulties and Disadvantages: Statistics and Indicators. Paris.

[79] For the definition of dropouts in the USA see footnote 27.

[80]Heckman, Friedrich (2008) Integration and Migration. Strategies for integrating migrant children in European schools and societies, prepared for the Commission, are presented here.

[81] Bundesministerium für Arbeit und Soziales 2007a**:** Nationaler Integrationsplan. Arbeitsgruppe 3, Dokumentation des Beratungsprozesses. CD Berlin

[82] European Monitoring Centre on Racism and Xenophobia (EUMC) 2004: Migrants, Minorities and Education. Documenting Discrimination and Integration in 15 Member States of the European Union. Luxembourg

[83] See more information on participation in pre-primary education in the 2007 Progress report.

[84] Ibid

[85] See more in the 2007 Progress report.

[86] However, the correlation is not perfect. It is therefore of interest to examine the occupation link separately, not least because it gives a guide to the relative earnings of the parents concerned and, accordingly, to the income of the household when the people surveyed were young. To focus on the influence of the father's occupation rather than the mother's is more relevant since in many countries a substantial proportion of the mothers concerned were not in paid employment during the period when the people surveyed were young teenagers (which is up to some 50 years ago)

[87] For an analysis of school to work transition patterns please see European Commission, 2007k.

[88] According to the projections, which are based on current policies, the overall employment rate of the EU-25 would rise from 63% in 2004 to 67% in 2010 and to 70% in 2020

[89] The description of the graphical display is from the same publication

[90] The graphical display and the analysis illustrate the overall European situation. However, there are clear country differences in terms of when the distinct phases will materialise depending on historic development in fertility rates and migration. For the specific national situation, see Europe's demographic future (op.cit.)

[91] The 3 levels of educational attainment are based on ISCED levels, as follows: 'Low' includes ISCED levels 0 to 2 and 3C short, 'Medium' includes ISCED levels 3A and B, 3C long and 4 and 'High' includes ISCED levels 5 and 6.

[92] Two issues should be underlined: 1. educational attainment is solely an attainment measure. It does not consider possible differences in the quality of the skills and knowledge across countries with similar attainment levels. 2. The age group 15-64 has been selected to ensure correspondence with labour market statistics where employment and un-employment figures are based on this age-span. It is obvious that this age-span implies an over-representation of the low skilled. In most countries people do not reach their final educational attainment level before in the beginning of the twenties (or even mid to late twenties).

[93] See also European Economy 2006 –chapter 4 for a full exposition of these arguments.

[94] Please note that educational attainment is computed for 25-64 year olds.

[96] Education is also associated with other benefits like its impact on health, civic participation and well-being of individuals (cf. McMahon 2004). A positive association was found between education and health-related behaviour, diet habits and job satisfaction (cf. Blanchflower and Oswald 2004).

[97] Individual salaries can largely depend on other labour market factors and different institutional arrangements (for details see Card, 1999). The measurement limitations can also influence the results when using this indicator to search for evidences of higher returns from education.

[98] The presidency conclusions of the European Council meeting on 13/14 March 2008 invites the Commission to present a comprehensive assessment of future skills requirement in Europe up to 2020.

[99] Cedefop is the European Centre for the Development of Vocational Training www.cedefop.europa.eu

[100] See also Levy, F. and R. J. Murnane, 2005a", which presents a theoretical framework for understanding changes to skill demands.

[101] Data source: UNESCO Institute for Statistics (UOE data collection)

[102] For details see OECD (2007) and CRELL (2007)

[103] In the field of public finance one distinguishes between efficiency and effectiveness whereas overall efficiency consists of technical and allocative efficiency.

[104] The United Kingdom is one of the front-runners in implementing the output-based approach, a direct measure of education output introduced in 1998. The current measure reflects pupil attendance (rather than number of pupils) and adjustments based on past trends in exam results (*Atkinson Review*, 2005).

[105] **PIRLS** (Progress in International Reading Literacy Study) is an international study conducted by the International Association for Evaluation of Educational Achievement (IEA) to monitor, on a regular basis and within an internationally agreed common framework, the outcomes of education systems in terms of student achievement for different school grades. **PISA** (Programme for International Student Assessment) is an international study conducted by the OECD to monitor, on a regular basis and within an internationally agreed common framework, the outcomes of education systems in terms of student achievement for students aged 15 years old.

[106] The indicator is available on a regular basis for some countries (see *Education at a Glance*, Indicator A9)

[107] Data envelopment analysis (DEA) constructs an efficiency frontier which, by assumption, determines best practice based on country data. The potential efficiency gains for specific countries are measured by their position relative to this frontier.

[108] See Hanushek (2003) for an overview, Wößmann (2005) for cross-country evidence; and Gundlach *et al.* (2001) for evidence over time from European countries.

[109] Empirical evidences shows that pupils' socio-economic background could also be related to efficiency. Hanushek and Kimko (2000), Hanushek and Luque (2003), Afonso and St. Aubyn (2005), Haveman and Wolfe (2005) found that adult schooling attainment levels have a positive and significant effect on student

performance. OECD (2007) and Wößmann (2005) shows that institutional settings influence the efficiency of education spending while Wilson (2005) demonstrates that inefficiencies in transition economies might result from managerial ineptitudes or from other constraints outside the authorities' direct control.

[110] The boundaries between public and private sector at the national level could suggest a rather misleading picture for cross-country investigations; certain data about the private spending is not always available.

[111] Commission Regulation (EC) No 102/2007 of 2 February 2007 adopting the specifications of the 2008 ad hoc module on the labour market situation of migrants and their immediate descendants, as provided for by Council Regulations (EC) No 577/98 and amending Regulation (EC) No 430/2005 (OJ No L 28/3
Commission Regulation (EC) No 207/2008 of 5 March 2008 adopting the specifications of the 2009 ad hoc module on the entry of young people into the labour market provided for by Council Regulation (EC) No 577/98 (OJ No L 62/4)

[112] "SurveyLang" consortium is composed of the following partners: University of Cambridge ESOL Examinations – coordinator, Centre International d'Etudes Pédagogiques (CIEP), Goethe-Institut, Instituto Cervantes, National Institute for Educational Measurement (CITO), Gallup, Universidad de Salamanca and Università per Stranieri di Perugia.

[113] Belgium, Czech Republic, Denmark, Estonia, Germany, France, Ireland, Italy, the Netherlands, Austria, Poland, Slovakia, Portugal, Finland, Sweden, the UK and Norway.