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Lifelong Learning: Education and Training policies
Analyses, statistics and indicators

Annex

DETAILED ANALYSIS OF PROGRESS TOWARDS THE LISBON OBJECTIVES IN EDUCATION AND TRAINING

2006 Report

Analysis based on indicators and benchmarks

Report endorsed by

The Standing Group on Indicators and Benchmarks

Report prepared by :

DG Education and Culture, Unit A6
(Analyses, Indicators and Benchmarks)

In cooperation with

EUROSTAT

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Introduction

The European Council in Lisbon in 2000 responded to the changing global challenge by announcing a comprehensive economic and social policy strategy: to become, by 2010, "the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth, with more and better jobs and greater social cohesion."[72] In the light of slow economic growth, an ageing society and the emergence of new competitors on the world market the Lisbon strategy is today more urgent than ever.

The responsibility put on European education and training systems by the institutionalisation of this goal is immense. Education and training help to deliver what European citizens desire most – personal fulfilment, jobs, prosperity, greater social cohesion and a cleaner environment. Without first-rate education and training systems, a skilled, flexible workforce, a cohesive, participative society, research into high-value and technologically-advanced products, it will not be possible to achieve the Lisbon goals.

The high ambitions in the field of European education and training were also expressed in the wish of the Barcelona European Council of March 2002, that European education and training systems should become "a world reference for quality by 2010."

This annual report[73] charts progress towards Europe's targets in the area of education and training using a framework of indicators, benchmarks and statistics, and puts performance, where useful and possible, into a global perspective. The data gives an indication of the direction European education systems are moving in and of Europe's potential to fulfil the objectives set at Lisbon.

The Council has grouped the strategic objectives of European education and training systems into three broad categories, concerning: firstly, the quality and effectiveness of education systems; secondly, access to education; and thirdly, opening up education systems to the wider world.[74] In addition to these overall strategic objectives, the Council has set precise targets or "benchmarks," in five exemplary areas of education policy, namely early school leavers, completion of upper-secondary education, reading literacy, participation in lifelong learning, and graduates in maths, science and technology (MST). These benchmarks are not concrete targets for individual states, but rather "reference levels of European average performance."[75] They are targets for the Union as a whole, and the collective responsibility of the Member States to reach the targets by 2010 is translated into action at national level on the basis of specific national policy priorities, fully respecting the principle of subsidiarity, as stipulated by the Treaty (Article 149 and 150).[76]

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[72] Presidency Conclusions, Lisbon, paragraph 37.

[73] A first Commission staff working paper "Progress towards the Common Objectives in Education and Training" was published in January 2004.

[74] Adopted by the European Council, Stockholm, 2001. Work programme approved by the European Council, Barcelona, 2002.

[75] Council Conclusions, 5 May 2003

[76] However, within the EU the Netherlands has drawn up an Action Plan on how it will translate the five EU objectives agreed in the Council into national objectives and policy measures (see Dutch EU Education Action Plan). In "A report on education and training in Sweden and the shared European goals," Sweden more generally looks into its progress towards the commonly agreed objectives and towards the five benchmarks. Norway recently published a Norwegian perspective on progress using the framework of 29 indicators and 5 benchmarks.

With this Commission Staff Working Paper, "Progress towards the Lisbon Objectives in Education and Training," the Commission "takes the temperature" regarding the performance and progress of education and training systems in some 30 countries, with the aid of some 60 data sets, amongst them the 29 key indicators [77] which were identified and endorsed by experts from the participating countries, including 5 benchmarks.

The main section of the report is divided into eight chapters detailing the analysis of the indicators selected and five European benchmarks of average European performance adopted by the Council. In each chapter an analysis is made of the most recent valid and comparable data, with the aim of measuring performance and progress and identifying instances of good policy practice. In areas which are relevant for European benchmarks, the analysis, where possible, draws conclusions on the prospect of reaching the targets set for 2010. While in most chapters the structure of the 2005 report has been kept with an updating of figures and an enhancement of the analysis, chapter 6 on the strategic objective 2 represents a focus area of this report with a much greater detail of analysis than in corresponding chapters of the previous report.

The following section gives a brief overview of the themes of the individual chapters, as well as the distribution of indicators among the chapters, as endorsed by the Commission's working group of national experts, the Standing Group on Indicators and Benchmarks.

Chapter I: Improving the Quality of Teachers and Trainers. The ageing of the teaching body is producing a more experienced teaching force, but also implies a challenge in terms of the motivation, retention and retirement of teachers. The retirement of up to 30% of the current teaching force within the next 10 years will necessitate the recruitment and training of at least 1 million new teachers.

Chapter II: Developing Skills for the Knowledge Society, analyses several key indicators related to indispensable skills (mainly based on OECD PISA data) and minimum attainment levels for the modern economy. The Council has set two benchmarks in this field to improve participation rates and performance levels in education and training.

European Benchmarks 2010
- At least 85% of 22-year-olds in the European Union should have completed upper-secondary education.
- The percentage of low-achieving 15-year-olds in reading literacy in the European Union should have decreased by at least 20% compared to the year 2000.

Chapter III: Increasing Recruitment to Scientific and Technical Studies, focuses on the fact that an adequate supply of scientific specialists is essential for the EU in becoming the most dynamic and competitive knowledge-based economy in the world. The Stockholm European Council in 2001 highlighted the need to encourage young people, particularly young women, to become interested in scientific and technological studies.

European Benchmark 2010
- The total number of graduates in mathematics, science and technology in the European Union should increase by at least 15%, while at the same time the level of gender imbalance should decrease.

[77] The full title of each of the 29 indicators can be found in Annex 1.

Chapter IV: Making Best Use of Resources, springs from the Lisbon European Council's call for a "significant yearly increase in per capita investment in human resources." Public investment in education and training (as a percentage of GDP) has increased in recent years, but there is increasing awareness of the need for more efficient use of resources, including encouraging more private investment.

Chapter V: Ensuring Access to ICT for everyone, follows from the precept that every citizen should be equipped with the skills needed to live and work in the new information society. The educational use of ICT accordingly features prominently in the Commission's e-learning strategy. The indicators utilised focus on the ICT infrastructure in schools and households and the learning outcomes of ICT usage.

Chapter VI: Participation in Education and Training is a together with chapter VII a focus area of this report and thus compared to other chapters examines in greater detail issues as the participation of various age groups in non-compulsory education (pre-primary, upper secondary, tertiary, adult education).

European Benchmark 2010
- The European Union average level of participation in lifelong learning should be at least 12.5% of the adult working age population (25-64 age group).

Chapter VII: Early School Leavers looks at early school leavers in more detail and addresses issues of equity and social inclusion.

European Benchmark 2010
- By 2010, an EU average rate of no more than 10% early school leavers should be achieved.

Chapter VIII: Improving Foreign Language Learning, monitors adherence to the 2002 Barcelona European Council's recommendation that all European citizens should be taught at least two foreign languages from an early age.

Chapter IX: Mobility and Cooperation, concentrates on the need to promote the free circulation of students and teaching staff within the EU, both as part of the process of internationalising European education and training systems to improve teaching and learning, and in order to foster international cooperation. Inward mobility is also an indicator of the relative attractiveness of the EU as a destination for academic and research talent.

Most of the thirteen concrete objectives of Education and Training 2010 are covered by the indicators listed above. However, as a result of missing data, areas such as active citizenship, entrepreneurship and European co-operation are not currently covered. In other areas like teachers and trainers and languages, the indicators used neglect some important aspects. For a proposal of short-, medium- and long-term strategies in these and other areas, see the Staff Working Paper "New Indicators on Education and Training."[78]

The report covers performance and progress in the following countries: the 25 Member States of the European Union (EU); the two Acceding countries (AC-Bulgaria, Romania), the Candidate Countries (Croatia, FYR Macedonia, Turkey); and three countries of the European Economic Area (EEA - Iceland, Liechtenstein, Norway). Where valid data is available, comparisons are made with the performance of Japan and the US.

[78] Commission Staff Working Paper, *New Indicators on Education and Training*, 29 November, 2004. SEC(2004) 1524

STRATEGIC OBJECTIVE 1

IMPROVING THE QUALITY AND EFFECTIVENESS OF EDUCATION AND TRAINING SYSTEMS IN THE EU

I. IMPROVING THE QUALITY OF TEACHERS AND TRAINERS

Main messages

- The indicators selected in this objective area address the shortage or surplus of teachers – an issue which might have an impact on the quality of teaching and learning. However, they do not capture the complexity of what the objective area suggests - "improving the quality of teachers and trainers". The Commission, in co-operation with experts from Member States, has devised a plan to respond to these data insufficiencies, and better data on the evaluation of teacher training and on the professional development of teachers should be available in the short to medium term.
- Trainers are not covered by the indicators selected in this objective area. The concept trainer is understood differently in different countries and there is not much statistical information available. The Commission will examine how information about trainers can be collected.

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- An increasing proportion of teachers in the EU is aged 50 or older – in Sweden and Germany more than 40% of teachers in both primary and secondary education are above this age. Policies and initiatives are being developed to motivate older teachers to remain in the profession and to integrate them into a dynamic of continuous professional development.
- Pupil-teacher ratios in primary and secondary education vary substantially within the EU, from almost 10:1 in Lithuania to almost 20:1 in the UK. The majority of EU countries have pupil-teacher ratios below 15:1.
- Within a generally decreasing pupil/student population, the proportion of students with migrant background is increasing. From 2000 to 2003 the proportion of first-generation students (born in the country but with parents born outside) increased by 12.8 percent, and non-native students (themselves born abroad) by 9 percent.
- To equip the teaching body with skills and competencies for its role in the knowledge society over the coming decades it is necessary to have in place high-quality initial teacher education, in conjunction with a process of continuous professional development keeping them up to date with the skills required in the knowledge based society.
- In order to recruit the number of teachers needed for the future it will be necessary to develop long term policies in terms of maintaining, or even improving, the status of the teaching profession and ensuring its attractiveness.

1.1 Introduction

"Improving education and training for teachers and trainers" is the first of the thirteen concrete objectives in education and training systems in Europe.[79] It is a crucial instrument to improve the quality and effectiveness of education systems, and in turn to strengthen Europe's position in the modern knowledge economy.

[79] Report from the Education Council to the European Council: "The concrete future objectives of education and training systems," 2001.

Teachers and trainers are traditionally one of the most important interfaces between individuals and society. They have always played a vital role in the transmission of knowledge and cultural values. However, the economic and social changes in Europe proceeding from the knowledge revolution are placing increasingly complex demands on the teaching profession. Schools and teachers are expected to deal with different languages and student backgrounds, to be sensitive to culture and gender issues, to promote tolerance and social cohesion, to respond effectively to disadvantaged students and students with learning or behavioural problems, to use new technologies, and to keep pace with rapidly developing fields of knowledge and approaches to student assessment.[80] This requires new and continuously developing knowledge and skills among the teachers.

Consequently, the quality of the teaching body has implications for Europe's economic and social ambitions. As the Detailed Work Programme points out, "attracting and retaining well-qualified and motivated people in the teaching profession, which is faced with massive recruitment needs due to the ageing of the teaching population, is a short- and medium-term priority in most European countries."[81]

The Commission's expert Working Group on Improving the Education of Teachers and Trainers has made a number of policy recommendations on the question of how to ensure that teachers and trainers are adequately supported for their role in the knowledge based society, and on how to make the teaching profession more attractive.[82] These recommendations range from the development of coherent lifelong teacher education and professional development processes, quality assurance and accreditation systems, to partnership between schools and teacher-education institutions, research-based teacher education and increased mobility.

As a follow-up to this work, a set of common European principles for teacher competences and qualifications has now been elaborated. The purpose of the common principles is to provide a tool to support policy making in the field of teacher education at a national or regional level. They should contribute to the process of increasing the quality and efficiency of teacher education in the countries participating in the Education and Training 2010 work programme, thereby helping them to retain well-qualified and highly-motivated teachers in the profession.[83] The Common European Principles also contain practical recommendations addressed to national and regional policy makers.

In the area of Vocational Education and Training (VET), the Maastricht Communiqué[84] furthermore emphasises as one key priority at national level the "continuing competence development of teachers and trainers in VET, reflecting their specific learning needs and changing role as a consequence of the development of VET".

1.2 Indicators for monitoring performance and progress

Three indicators have been selected in the objective area of teachers and trainers to monitor progress:

- *Number of young people in the 0-14 and 15-19 age groups and as percentage of total population*
- *Age distribution of teachers together with upper and lower retirement age*
- *Ratio of pupils to teaching staff by education level*

[80] OECD (2004): *Teachers matter: Attracting, Developing and Retaining Effective Teachers*
[81] European Commission (2002): Detailed Work Programme, p. 15.
[82] Working Group Progress Report, "Improving the education of teachers and trainers," (2004)
[83] ibid.
[84] Maastricht Communiqué on the future priorities of enhanced European cooperation in VET (2004) - Review of the Copenhagen Declaration of November 2002?

The indicators selected in this objective area address the shortage or surplus of teachers – an issue which might have an impact on the quality of teaching and learning. Data on the age distribution of teachers, development in the number of pupils, and the pupil-teacher ratio allows a certain insight into the future need for teachers, and hence the need for policy development in relation to retention, retirement, and recruitment of teaching staff. The ratio of pupils to teaching staff is also an indicator of the resources devoted to education.

However, they do not capture the complexity of what the objective area suggests - "improving the quality of teachers and trainers".[85] They do not address the very important matter of the quality and content of teaching, or of the quality of teacher-education, professional development and support systems.

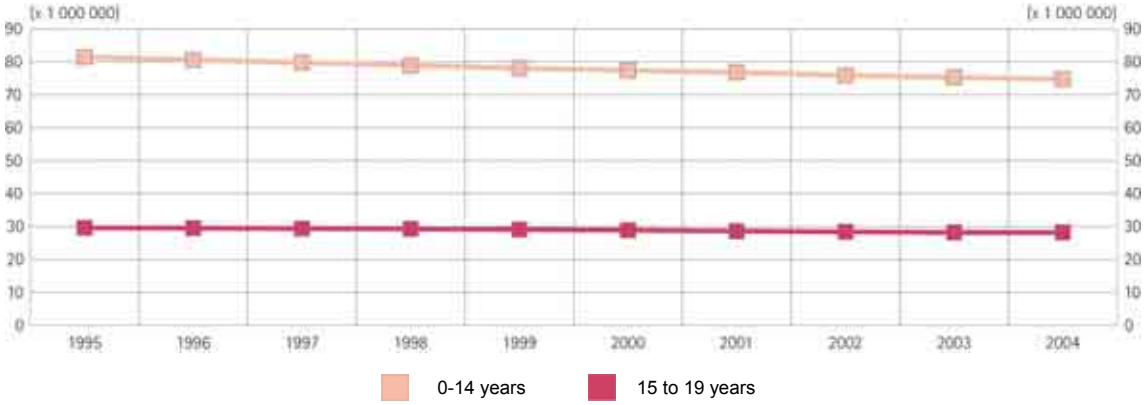
To respond to these insufficiencies, on the basis of the Council conclusions of 24 May 2005[86], the Commission has initiated co-operation with EU member states taking part in the OECD survey *teachers, teaching and learning* to ensure that empirical information on teacher education, and professional development at school level are collected. Moreover, the Eurydice network has been asked to provide an overview of procedures for evaluating initial teacher education. Eurydice is expected to publish a comparative analysis of evaluation systems in relation to teacher education in the beginning of 2006.[87] Finally, the Commission has tendered a study on teachers and trainers and their professional and geographical mobility, which will enhance the analysis in the 2007 issue of this report.

1.3 Performance and progress in improving the quality of teachers and trainers

1.3.1 Number of young people in the population

The number of young people in the European Union is declining steadily. Between 1995 and 2004, the population aged 0-14 years in the EU25 decreased by 8% and the population aged 15-19 by 4.6% (Chart 1.1). As a percentage of the total population, the age group 0 to 19 years old declined by 9% in the same period.

Chart 1.1: Number of young people in the 0-14 and 15-19 age groups in EU 25. 1995 to 2004.



[85] For a comprehensive analysis, see Eurydice (2002) *The Teaching Profession in Europe: Profile, Trends and Concerns*.
[86] Council conclusions of 24 May 2005 on New Indicators in Education and Training, and Commission Staff Working Paper, New Indicators on Education and Training, 2004.
[87] Eurydice (2006) *Quality Assurance in Teacher Education in Europe*

(million)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
0-14 years	81.5	80.6	79.8	78.9	78.1	77.4	76.8	75.9	75.3	74.8
15 to 19 years	29.6	29.5	29.4	29.3	29.1	28.9	28.6	28.4	28.2	28.2
% of total population	24.9	24.6	24.3	24.1	23.8	23.6	23.3	23.0	22.8	22.5

Source: DG Eurostat (Population statistics)

However, this overall decline conceals the considerable variations between ISCED levels, and in terms of how countries are affected.

There was a clear decline in the number of pupils in primary education in the period 1999 to 2003. However, the number of pupils in lower secondary education was increasing – partly a consequence of the increase in birth cohorts during the period 1985-1990. The number of pupils in pre-primary and students in upper secondary education has remained approximately constant.[88]

When analyzing individual countries, the picture is even more complex. Most countries experience an increase in the number of pupils at some ISCED-levels and a decrease at other levels. However, two countries, Denmark and Luxembourg experienced increasing number of pupils' at all three levels during the period 1999-2003. France and Ireland are the only two countries experiencing a decline in the number of pupils' at all three levels during the same period.[89]

Another issue is the composition of students. An increasing proportion of students have migrant background. Students with migrant background on average face greater challenges achieving a good learning yield. The reasons behind this vary, but important factors may be the challenge to learn a new language[90] and the socio-economic situation of many immigrant families. Results from the Pisa -survey clearly shows that some countries appear to be more effective in minimising the performance disadvantage for students with a migration background. However, a more heterogeneous student population lead to greater challenges for teachers when it comes to putting into practice effective teaching and learning for all pupils. In lower secondary education the proportion of (15-year-old) first-generation students (born in the country but with parents born outside) increased by 12.8 percent, and non-native students (themselves born abroad) by 9 percent from 2000 to 2003. In 2003, Luxembourg, Germany, France and Austria had the greatest proportion of pupils with migrant background.[91]

Population forecasts

In terms of future pupil intakes population forecasts are of great interest. These projections can be used to plan the human and material resources required for the sound functioning of the education systems: for example, they enable future requirements in terms of teachers to be estimated. Within the EU-25, 15 countries have a deliberate planning policies based on populations forecasts.[92]

Eurostat's population forecast for the 5-9 and 10-14 age cohorts respectively give indications of the likely developments in the number of pupils in compulsory education.

[88] See annex table A1
[89] See Annex table A2
[90] However, the extent to which immigrants have to overcome language barriers varies considerably across countries.
[91] See Annex table A3
[92] Eurydice (2002) *Teaching profession in Europe: Profile, trends and concerns. Report II: Supply and demand. General lower secondary education.*

During the period 2000-2015 in the EU-25, both age cohorts will decline noticeably– the 5-9 year olds by nearly 9% and the 10-14 year olds by 12%. On the level of individual countries, however, there are again great variations. When it comes to the age cohort 5-9 year olds four countries Spain (19.8%), France (1.8%), Ireland (21.9%) and Portugal (6.0%) will experience an increase in the number of pupils, while particularly the new Member States will experience drastic declines - Lithuania (-36.7%), Poland (-31.2%), Slovakia (-31.0%), and Cyprus (-25.1%).

In the age group 10-14, during the same period, seven countries, namely Denmark (11.9%), Spain (4.7%) France (1.5%), Ireland (4.1), Italy (1.0%), Luxembourg (15.6%) and the Netherlands (8.4%) experience an increase, while new member states experience dramatic declines – Latvia (-46.8%), Lithuania (-44.1%), Estonia (-40.7%), and Poland (-40.2%).

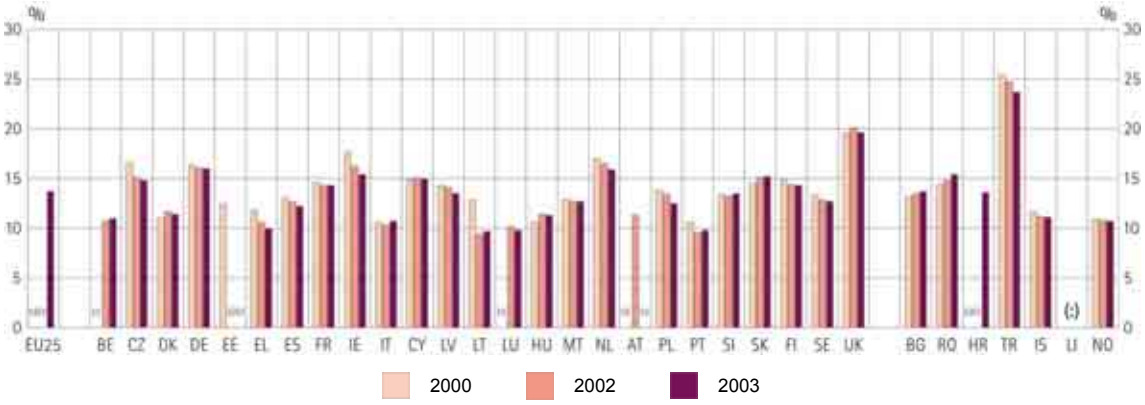
Despite the decline in the number of young people there is a reverse effect through increasing participation rates in lower and upper secondary education. An analysis has been carried out to quantify the effect on the number of student in upper secondary education of reaching the benchmarks of no more than 10 % early school leavers and 85 % completion of upper secondary education. The result is that more than a million additional entrants into upper secondary education are required every year up to 2010.[93]

1.3.2 Ratio of pupils to teaching staff

The ratio of pupils to teaching staff is an important indicator of the resources devoted to education, and its relation to quality in education is often discussed.[94]

However, the ratio of pupils to teaching staff is not the same as actual class size. The ratio of pupils to teaching staff is calculated by dividing the number of enrolled pupils by the number of full-time-equivalent teachers. Class size is defined as the number of students for whom a teacher is primarily responsible during a school year. Neither the pupil-teacher nor class size give the exact picture of the situation in the classroom. Two countries with the same pupil-teacher ratio can have different class sizes, for instance if the number of hours teachers spend teaching differ. Moreover, actual class size can differ from the statistical figure as it may vary over time and according to pedagogical choices, such as the use of team teaching and different grouping of pupils according to the subjects taught.[95]

Chart 1.2: Ratio of pupils to teaching staff, primary and secondary education combined (ISCED 1-3), 2000-2003



[93] London Economics (2005) *The returns to Various types of Investment in Education and Training*.
[94] Wößmann and West (2005), Krueger (2002), Hanushek (2002, 2005)
[95] For an analysis of national regulations in relation to class size in primary education see Eurydice, *Key data on education in Europe 2005*. For a general discussion of issues related to differences between class size and pupil teacher ratios see OECD, *Education at a glance 2005* (page 347).

	EU25	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
2000	:	:	16.6	11.0	16.4	12.5	11.8	13.1	14.6	17.7	10.6	14.9	14.3	12.8	:	10.6	12.9
2001	:	11.2	15.6	10.9	16.3	12.4	11.4	12.4	14.5	16.8	10.4	16.6	14.4	13.2	10.0	11.6	13.9
2002	:	10.7	15.1	11.7	16.1	:	10.6	12.6	14.3	16.2	10.3	15.1	14.1	9.4	10.2	11.4	12.7
2003	13.7	11.0	14.8	11.4	16.0	:	10.0	12.2	14.3	15.4	10.7	15.0	13.5	9.7	9.8	11.3	12.7

	NL	AT	PL	PT	SI	SK	FI	SE	UK		BG	RO	HR	TR	IS	LI	NO
2000	17.0	:	13.8	10.6	13.4	14.5	15.0	13.4	19.6		13.2	14.4	:	25.4	11.7	:	10.9
2001	17.2	11.1	13.9	10.1	13.4	15.4	14.8	13.5	19.3		13.6	14.4	:	26.2	12.1	:	10.3
2002	16.5	11.3	13.4	9.5	13.2	15.1	14.4	12.8	20.1		13.5	14.8	:	24.7	11.2	:	10.8
2003	15.9	11.3	12.5	9.8	13.5	15.2	14.3	12.7	19.6		13.7	15.4	13.6	23.7	11.1	:	10.7

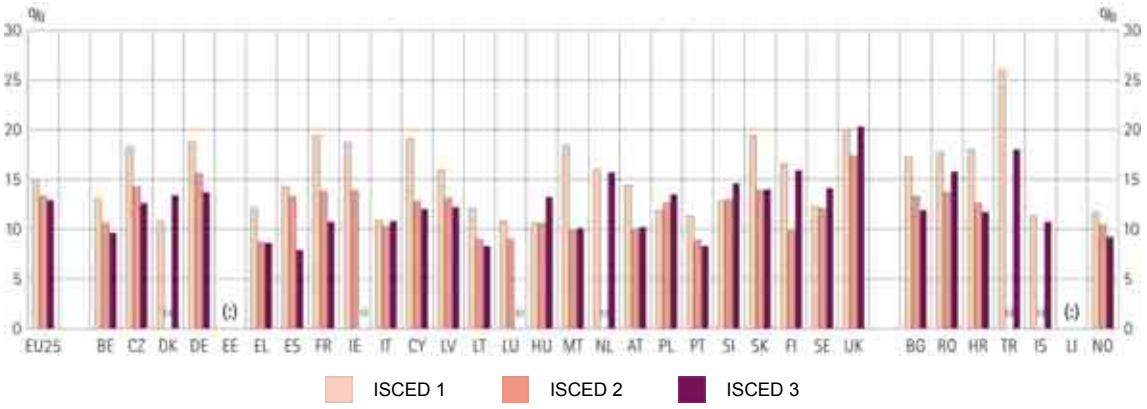
Data source: Eurostat (UOE)

Additional notes:
2001-2003 BE Data exclude the German Community and all independent private institutions. Teachers in social advancement education in the French Community are not included. ISCED 4 included in ISCED 3
2000-2002: ES ISCED 3 includes ISCED 4
2000-2003: IE, UK, NO ISCED 3 includes ISCED 4
2002 LT: The methodology to calculate full-time equivalent teachers has improved 2002, data not comparable with previous years
2001-2003: LU Public sector only
2001 HU: The calculation of full-time equivalent teachers has been improved 2001 compared to previous years
2000-2003: NL ISCED 1 includes ISCED 0. The methodology for statistics on personnel in secondary education changed in 2002
2000-2003: PT Data on full-time equivalent teachers are not available, all teachers - head-counts - included in the denominator. Data do not include Azores and Madeira
2000-2003: FI ISCED 3 includes ISCED 4 and 5 vocational and technical programmes
2000-2003: IS ISCED 4 is partly included in ISCED 3

Pupil-teacher ratios vary considerably within the EU (Chart 1.2). In Lithuania the ratio is close to 10 to 1, while in the UK it is almost 20 to 1. In Turkey the rate is almost 24 to 1. The majority of EU countries have pupil-teacher ratios below 15. Six EU countries (DK, IT, CY, HU, SI and SK) registered an overall increase in the ratio over the period 2000-2003 (with Hungary recording the greatest increase, from 10.6 to 11.3). The rest of the EU countries recorded a decrease, with Ireland and the Czech Republic recording the greatest falls.

The pupil-teacher ratios also vary considerably between ISCED-levels (Chart 1.3). In most countries the ratio of pupils to teaching staff is higher in primary (ISCED 1) than in lower and upper secondary education (ISCED 2 and 3). This may be due to a combination of factors, including differences in annual instruction time and differences in teaching hours for teachers at different levels. Also specialization by subject at secondary level and the element of choice of subjects on the part of pupils could create a situation in which more teachers are needed than at primary level. From an educational perspective, however, it is not obvious why a smaller ratio of students to teaching staff should be more desirable at higher levels of education.[96]

Chart 1.3: Ratio of pupils to teaching staff, primary and secondary education (ISCED 1-3), 2003



[96] OECD, *Education at a Glance 2005* page 348

	EU25	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
ISCED 1	15	13.1	18.3	10.8	18.7	:	12.1	14.3	19.4	18.7	10.9	19.1	15.9	12.1	10.8	10.6	18.4
ISCED 2	13.3	10.6	14.3	:	15.6	:	8.7	13.3	13.8	13.9	10.3	12.8	13.1	9.0	9.0	10.6	10.0
ISCED 3	12.9	9.6	12.6	13.4	13.7	:	8.6	7.9	10.7	:	10.8	12.0	12.2	8.3	:	13.2	10.1

	NL	AT	PL	PT	SI	SK	FI	SE	UK		BG	RO	HR	TR	IS	LI	NO
ISCED 1	16.0	14.4	11.9	11.3	12.8	19.4	16.6	12.3	20.0		17.2	17.8	18	25.9	11.3	:	11.7
ISCED 2	:	10.0	12.6	8.9	13.0	13.9	9.8	12.1	17.4		13.3	13.7	12.6	:	:	:	10.4
ISCED 3	15.7	10.2	13.5	8.3	14.6	14.0	15.9	14.1	20.3		11.9	15.8	11.7	18.0	10.7	:	9.2

Data source: Eurostat (UOE)

Additional notes:
(additional to chart 1.2)
DK, IS ISCED 2 is included in ISCED 1
IE, LU ISCED 3 is included in ISCED 2
LT ISCED 3 general programmes are included in ISCED 2, ISCED 3 includes vocational programmes only
NL ISCED 2 is included in ISCED 3

1.3.3 Age of teachers

The ageing of the labour force affects all sectors of the economy and has been addressed repeatedly by the European Council (for example in Barcelona[97] and Brussels[98]). An older teaching body implies relatively more experienced teachers, but it also signifies a wave of retiring teachers and possible new recruitments for replacement.

As a consequence of the ageing of the teaching profession, a potentially serious shortage of staff may materialize when the current generation of older teachers reaches retirement age. This is a matter of some concern, considering that most teachers leave the profession before 'normal' retirement age (see section below), and that some countries experience significant difficulties in attracting qualified new teachers and trainers.[99] At present the Union counts close to six million teachers (2003)[100] in primary and secondary education. An average of 30% is 50 years old or older implying that close to two million teachers could retire within the next 10 years. As a consequence major new teacher recruitment appears inevitable depending on the developments in the pupil-teacher ratio, demographic trends and projections, participation rates in post compulsory education etc. It is estimated that a minimum of one million new teachers will have to be recruited over the period 2005-2015 to satisfy replacement needs.

[97] "Efforts should be stepped up to increase opportunities for older workers to remain in the labour market, for instance, through flexible and gradual retirement formulas and guaranteeing real access to lifelong learning. A progressive increase of about 5 years in the effective average age at which people stop working in the European Union should be sought by 2010." Presidency Conclusions, European Council, Barcelona, 2002, p.12.

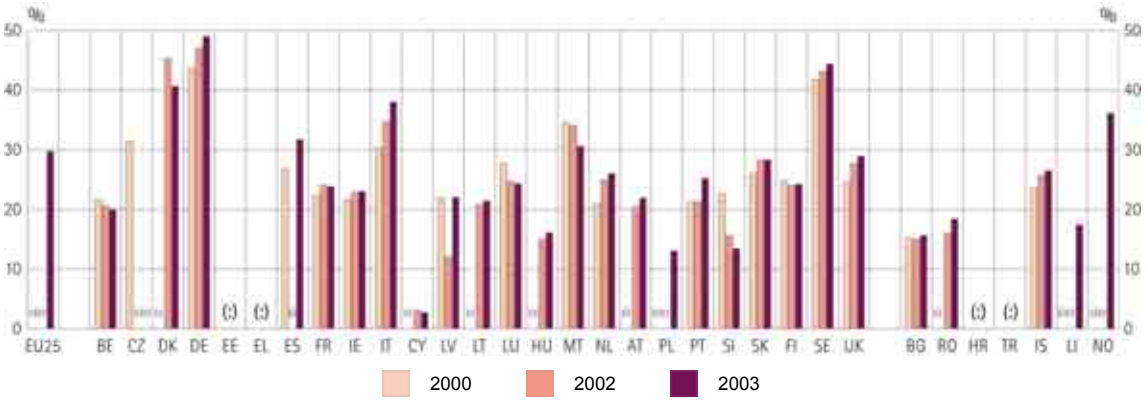
[98] "The European Union is facing a pension problem, which should be redressed by encouraging active ageing and by discouraging early retirement incentives." Presidency Conclusions, European Council, Brussels, 2003, p.20.

[99] Report from the Education Council to the European Council: "The concrete future objectives of education and training systems," 2001.

[100] Eurostat, UOE data collection, 2004.

Primary level

Chart 1.4: Percentage of teachers aged 50 or older, primary education (ISCED 1), 2000-2003



	EU25	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
2000	:	21.6	31.4	:	43.5	:	:	26.7	22.3	21.6	30.3	:	22.0	:	27.7	:	34.6
2001	:	21.4	:	:	44.9	:	:	:	23.6	22.0	34.1	5.1	21.0	20.7	24.5	:	33.3
2002	:	20.6	:	45.3	47.0	:	:	:	24.1	22.8	34.7	3.0	12.0	20.8	24.7	15.0	34.1
2003	29.7	19.9	:	40.6	49.0	:	:	31.7	23.8	23.0	38.0	2.7	22.0	21.4	24.3	16.1	30.6

	NL	AT	PL	PT	SI	SK	FI	SE	UK		BG	RO	HR	TR	IS	LI	NO
2000	20.9	:	:	21.3	22.6	26.0	24.9	41.8	24.6		15.2	:	:	:	23.4	:	:
2001	23.1	:	14.6	19.2	17.0	28.3	24.6	41.7	26.0		14.5	:	:	:	25.1	:	:
2002	24.9	20.4	:	21.3	15.6	28.2	24.0	43.1	27.7		15.0	16.0	:	:	25.7	:	:
2003	26.0	21.9	13.0	25.2	13.4	28.3	24.2	44.3	28.9		15.6	18.4	:	:	26.5	17.4	36.1

Data source: Eurostat (UOE)

Additional notes:

2000-2003 BE	Data exclude the German Community and all independent private institutions
2002-2003 DK	ISCED 2 is included in ISCED 1
2000-2003 LU	Public sector only
2000-2003 NL	ISCED 1 includes ISCED 0
2000-2003 IS	ISCED 2 is included in ISCED 1

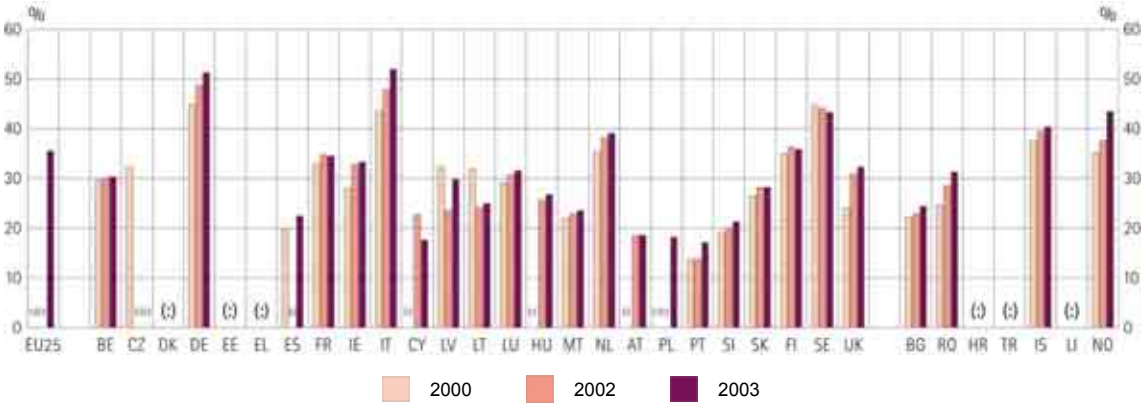
Germany, Denmark and Sweden have a high proportion of older teachers at primary level, with more than 40% of teachers being at least 50 years old (Chart 1.4). Conversely, Cyprus has an extremely low proportion of older teachers in primary education (2.7%), followed by Poland (13%), Slovenia (13.4%), Bulgaria (15.6%) and Hungary (16.1%).

Over the period 2000-2003 the proportion of teachers at least 50 years old at primary level increased significantly in Germany, Spain, Italy, Luxembourg, the Netherlands and the UK, whereas it decreased in Belgium, Denmark, Cyprus, Malta, and Slovenia.[101]

[101] Data for Denmark is available only from 2002, for Cyprus data is available from 2001

Secondary level

Chart 1.5: Percentage of teachers aged 50 or older, secondary education (ISCED 2-3), 2000-2003



	EU25	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
2000	:	29.7	32.3	:	44.9	:	:	19.8	32.9	28.0	43.6	:	32.4	31.9	29.2	:	22.0
2001	:	29.8	:	:	46.7	:	:	:	31.1	28.9	48.7	26.1	27.6	22.9	30.7	:	24.7
2002	:	30.2	:	:	48.8	:	:	:	34.8	32.8	47.9	22.7	23.6	24.2	30.7	25.7	22.9
2003	35.6	30.3	:	:	51.3	:	:	22.5	34.5	33.3	52.0	17.6	29.8	25.0	31.6	26.8	23.5

	NL	AT	PL	PT	SI	SK	FI	SE	UK		BG	RO	HR	TR	IS	LI	NO
2000	35.4	:	:	13.8	19.2	26.5	35.0	44.8	24.1		22.3	24.7	:	:	37.5	:	35.2
2001	37.1	:	21.1	12.1	19.1	28.3	36.1	44.6	26.0		22.0	25.1	:	:	37.6	:	36.3
2002	38.2	18.5	:	13.8	20.1	28.2	36.3	44.1	31.0		22.9	28.6	:	:	39.5	:	37.6
2003	39.1	18.6	18.2	17.1	21.3	28.2	35.9	43.3	32.3		24.4	31.3	:	:	40.4	:	43.5

Data source: Eurostat (UOE)

Additional notes:
2000-2003 BE Data excludes German-speaking community. ISCED 3 includes ISCED 4. UK includes ISCED2 and ISCED3 general programmes only.

2000-2001 UK includes ISCED2 and ISCED3 general programmes only.
2000: ES ISCED 3 includes ISCED 4
2000-2003: IE ISCED 4 included; LU Public sector only; FI ISCED 3 includes ISCED 4 and 5 vocational and technical programmes; IS ISCED 4 partly included in ISCED 3; NO ISCED 3 includes ISCED 4.
2002-2003: UK ISCED 3 includes ISCED 4

At secondary level, more than 50% of teachers in Germany, and Italy were at least 50 in 2003, while in Poland (18.2%), Cyprus (17.6%) and in Portugal (17.1%), teachers were on average significantly younger (Chart 1.3).

Over the period 2000-03, the proportion of teachers at least 50 years old increased most (in absolute terms) in Italy, Norway, the UK, Romania, Germany, Ireland, and the Netherlands. It decreased in five countries: Cyprus, Latvia, Lithuania, Poland, and Sweden. [102]

In general, the proportion of older teachers is higher in secondary education (ISCED 2-3) than in primary education (ISCED 1).

Retirement age

The development of the proportion of teachers aged over 50 must be seen in relation to the retirement age of the countries. In general, the normal minimum age at which they can retire is around 60 and carries with it full pension entitlement when they have completed the number of years of service required. Nevertheless, in many countries, teachers are able to retire before they reach official retirement age.

[102] No data for 2000 for Cyprus and Poland

The official and minimum retirement ages for teachers are specified in Chart 1.6. The official retirement age differs from 53.8 years for women in Slovenia to 70 years in Norway.

Table: 1.1: official and minimum retirement age

	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
Official	65	59.4/ 60.9	67	65	58.5/ 63	60	65	60	65	65	60	60/ 61.5	57.5/ 61.5	65	62	61
Minimum	60		60			55	60				55			60	57/ 60	60

	NL	AT	PL	PT	SI	SK	FI	SE	UK		IS	NO	BG	HR	RO	TR
Official	65	65	60/ 65	65	53.8/ 59	57/ 60	65	65	65		65	70	56/ 61		57/ 63	:
Minimum		61.5		52			60		60		60	62				:

Data source: Eurydice

Additional notes:
Countries with two ages: female retirement age mentioned first
MT: only women have a Minimum retirement age
UK: concerns ENG/WLS/NIR/SCO

Overall, in countries for which data are available, the great majority of teachers retire from their profession as soon as they are offered an opportunity to do so, whether in primary or secondary education. In most Eastern and Central European Countries, measures have been taken recently to postpone teachers' official retirement age. Reforms are increasing the age gradually over the next two decades until it is brought in accordance with the retirement age in the "old" EU member states. Often the retirement age of women are brought into line at the same time.[103]

In Germany and Italy (in secondary education), almost 70 % of the current teachers will retire in the next 20 years. By contrast, in countries where the proportion of teachers in older age groups are lower, as in Belgium (in the case of primary education), Ireland, Latvia, Lithuania, Hungary, Austria, Portugal (in secondary education in particular), Slovenia, Iceland or Bulgaria, retirements will occur more evenly over time. Cyprus (in the case of primary education) and Malta (in secondary education) are two of the very few countries which have low percentages in the age groups close to retirement.[104]

To ensure an adequate supply of well-qualified teachers, countries take various measures to retain older teachers ranging from bonus pay to reduction of teaching hours and changes in job profiles (for instance giving tutorship roles to experienced teachers so they can support inexperienced colleagues in a final on-the-job qualifying phase).[105] However, the danger is that the wave of retirements will lead to serious shortages of teachers and hence to a lowering of the quality of teaching and learning. As suggested in *Teachers Matter*[106] "school systems often respond to teacher shortages in the short-term by some combination of: lowering qualification requirements for entry to the profession: assigning teachers to teach in subject areas in which they are not fully qualified; increasing the number of classes that teachers are allocated: or by increasing class sizes. Such responses, which ensure that classrooms are not left without a teacher, and that a shortage is not readily evident, nevertheless raise concerns about the quality of teaching and learning."

[103] Eurydice Key data 2005 page 244 - 245
[104] Eurydice Key data 2005 page 245
[105] See also Eurydice, *The teaching profession in Europe: profile, trends and concerns*, report IV, chapter 6.
[106] OECD (2004) *Teachers Matter: Attracting, Developing and Retaining Effective Teachers,* Overview p.5.

1.3.4 Attractiveness

The attractiveness of teaching is on the policy agenda in several countries. It is seen as crucial to make teaching an attractive career choice, in order to recruit the best candidates and avoid teacher shortages. Policy objectives are directed towards improving the image and status of teaching, improving teaching's salary competitiveness, improving employment conditions and capitalising on an over-supply of teachers.[107]

Eurydice Key Data 2005 includes several indications on teachers' working conditions. Key messages include that the contractual weekly workload and employment conditions of teachers vary very widely depending on the country concerned and by the education level in which teachers teach. Working conditions for teachers are important for the attractiveness of – and the recruitment to - the profession. However, they are also important for teachers already in the occupation. Working conditions and the availability of professional development are important measures to secure that teachers are able to keep up with the increasingly complex demands on the teaching body and avoid seeking retirement as early as possible.

A study from OECD[108] shows teachers are highly motivated by the intrinsic benefits of teaching; working with children and young people, helping them to develop, and making a contribution to society. System structures and school workplaces need to ensure that teachers are able to focus on these tasks. In its most radical form, a greater emphasis on teacher quality could see teachers' work being redesigned to focus more on its professional and knowledge-based components, with perhaps fewer teachers being employed, but with more other people being employed to do those parts of teachers' current work that do not require teachers' professional skills, and teachers being paid substantially more to attract and retain the best possible candidates.

When it comes to wages, minimum basic teacher salaries in primary and general lower secondary education are lower than per capita GDP in the majority of European countries. Teachers need to have completed a certain number of years in service and/or to have satisfied other conditions before their salary increase. According to Eurydice[109], teachers whose salaries rise significantly throughout their entire career may be less inclined to leave the profession than those whose salaries do not progress beyond the first few years of experience. In some countries, like Denmark (primary and lower secondary education) and Latvia, teachers may hope for no more than very modest salary increases throughout their career (corresponding to some 10 %). In Cyprus, Luxembourg (in the case of teachers in primary education), the Netherlands (for teachers in general upper secondary education), Austria, Poland and Portugal, salaries may reach more than double their initial level. In the United Kingdom, measures introduced in 2000 sought to extend the salary scale of teachers who had reached their upper limit to encourage them to remain in the profession.[110]

1.4 Conclusion

The indicators selected in this objective area address the shortage or surplus of teachers – an issue which might have an impact on the quality of teaching and learning. However, they do not capture the complexity of what the objective area suggests - "improving the quality of teachers and trainers". The Commission, in co-operation with experts from Member States, has devised a plan to respond to these data insufficiencies, and better data on the evaluation of teacher training and on the professional development of teachers should be available in the short to medium term.

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[107] ibid
[108] ibid
[109] Eurydice Key data 2005, page 217 - 218
[110] ibid

Notwithstanding an expected decrease in the number of pupils in the coming years, more than one million teachers would have to be recruited in primary and secondary education over the ten-year period 2005-2015 in the EU simply to replace retirees. However, the need for recruiting new teachers varies considerably across countries due to different demographic situations concerning both pupils/students and the teacher body.

The anticipated shortage of teachers should inspire policy measures to motivate and retain experienced teachers through the provision of new challenges and responsibilities, as well as the establishment of a coherent continuous professional development strategy, to increase the attractiveness of the profession and enhance the quality of the teaching and learning environment for all. Long term policies are also important in terms of maintaining the status of the profession, and ensuring its attractiveness.

The common European framework for teachers' and trainers' competences and qualifications is a tool to support Member States to develop policies that respond to these challenges. It is the hope that the framework can contribute to improving working conditions and increasing the long-term attractiveness of the profession, to new graduates and horizontal movers in the labour force, as well as to the current teaching body.

II. DEVELOPING SKILLS FOR THE KNOWLEDGE SOCIETY

Main messages

Key competences

- There was no progress over the period 2000-2003 in terms of the European Benchmark of a 20% reduction in the percentage of low achievers in reading literacy by 2010 (i.e. to 15.5%) However, there was progress in some member states, notably Latvia and Poland. The average percentage of low achievers in reading literacy in the 16 EU countries for which comparable data is available was 19.4% in 2000 and 19.8% in 2003.

- In 2003, Finland had the lowest proportion of low-achievers in reading literacy (5.7%), followed by Ireland, the Netherlands and Sweden. EU countries with a high proportion of low-achievers included Greece, Slovakia, Italy, Luxembourg, Germany, Portugal and Spain. The USA and Japan have similar levels of low-achievers to the EU, in Japan the proportion increased significantly compared to 2000.

- In all EU countries girls are performing better in reading than boys. On an EU level girls already have passed the benchmark level.

- Compared to 2000 the EU score in maths and scientific literacy improved considerably in 2003, while results for Japan and the USA remained stable.

Upper-secondary attainment

- The European Benchmark of an educational attainment level of 85% at upper-secondary level by 2010, for those aged 20-24, poses a significant challenge for the majority of Member States. The present average level in the Union is 77.3% (2005) and has only improved by 1 percentage point since 2000.

- Eight EU countries are at present achieving completion rates beyond the benchmark of 85%, among which four countries (the Czech Republic, Poland, Slovakia, Slovenia) have rates of over 90%.

2.1 Introduction

Key competences designate a set of transferable, multifunctional skills and qualities that all individuals need for personal fulfilment and development, social inclusion and employability.[111] Key competency areas include the foundation skills numeracy and literacy, basic competences in mathematics, science and technology, foreign languages, ICT, learning-to-learn, social skills, entrepreneurship and general culture. These competences should be developed by the end of compulsory education and should form the foundation for more advanced or specialised training, either in higher education or through lifelong learning activities. Data from the European Labour Force Survey shows that participation in lifelong learning is strongly correlated to attainment levels achieved in formal education (see also Chapter V: Open learning environment). Completing upper-secondary education is therefore very important for participation in the knowledge society. There are also high personal returns from education, including, for example, higher salaries, higher labour force participation and a lower risk of unemployment.

[111] The Working Group on basic skills has decided on the term "key competency" to refer to the knowledge, skills, aptitudes and attitudes necessary for personal fulfilment, social inclusion and employability.

Indicators for monitoring performance and progress

In this area two sets of indicators have been used. A first set of four indicators addresses the measurement of skills of 15-year-old pupils:

- *Percentage of pupils with reading literacy proficiency "level 1 and lower" on the PISA reading literacy scale.*
- *Distribution and mean performance of students, per country, on the PISA reading literacy scale.*
- *Distribution and mean performance of students, per country, on the PISA mathematical literacy scale.*
- *Distribution and mean performance of students, per country, on the PISA scientific literacy scale.*

A second set of two indicators monitors successful completion of upper-secondary education and adult participation in education and training:

- *Percentage of those aged 22 who have successfully completed at least upper- secondary education (ISCED 3).*
- *Percentage of adults with less than upper-secondary education who have participated in any form of education or training in the last 4 weeks, by age group (25-34, 35-54 and 55-64).*

These indicators cover to some extent the issue of the acquisition of key competences, by taking into account performance in the PISA study, participation in education and training and completion of upper-secondary education. They are also broken down by gender and in some cases by socio-economic group.

The Council has set two benchmarks in this area, one of which is supported by existing data from the OECD PISA survey.[112] The new phases of PISA already in preparation will ensure the delivery of new data until at least 2009, making it possible to measure progress in this field in the participating countries. However not all EU countries participated in the first two PISA rounds (19 EU countries in PISA 2000 and 20 EU countries in PISA 2003), and for some countries results were not reliable. There are only 16 EU countries for which the results for 2000 and 2003 can be compared. Furthermore, in the field of mathematics, two out of four survey scales have changed between the 2000 and the 2003 survey rounds, so that only the results for two scales in mathematics are comparable between the two surveys. Moreover, small changes in the results cannot be considered as significant, as they are the result of normal sampling error. Nevertheless PISA data are now widely used, the assessment tool is considered to be of good quality and country coverage is increasing. All EU countries except Malta and Cyprus and all Acceding, Candidate and EFTA-EEA countries will participate in the 2006 survey.

A survey which might be used to complement the PISA-based analysis is the Trends in Mathematics and Science Study (TIMSS), which is organised by the IEA (International Association for the Evaluation of Educational Achievement). The last round of TIMSS was carried out in 2003 and results became available at the end of 2004. Eleven EU countries participated in the 2003 survey round, amongst them several new Member States, which have so far not participated in PISA (Cyprus, Estonia, Lithuania and Slovenia), plus the Acceding countries Bulgaria and Romania.[113] TIMSS 2003 assessed 4th and 8th grade pupils (results for the 8th grade are shown in the annex of this report).

[112] OECD, 2004, *Learning for Tomorrow's World: First results from PISA 2003*.
[113] See http://www.iea.nl/iea/hq/

2.2 Performance and progress in the field of skills for the knowledge society

2.2.1 Developing key competences-reading literacy

At present, the OECD PISA 2003 survey, which covers skills assessment in reading literacy, scientific and mathematical literacy for 15-year-olds, is the most comprehensive and up-to-date survey in this complex area. The data it provides gives information on some of the foundation skills for the knowledge society.[114]

The PISA survey makes it possible to identify the share of pupils who have a low level of foundation skills such as literacy and numeracy and thus are inadequately prepared for the challenges of the knowledge society and for lifelong learning. It is on the basis of such considerations that the Ministers for Education adopted a specific benchmark targeting low performance in reading literacy.

European Benchmark 2010
By 2010, the percentage of low-achieving 15-year-olds in reading literacy in the European Union should have decreased by at least 20% compared to the year 2000.

This benchmark, adopted by the Council in May 2003, is based on an indicator taken from the PISA survey, namely the percentage of pupils with reading literacy proficiency level 1 or lower in the PISA reading literacy scale.

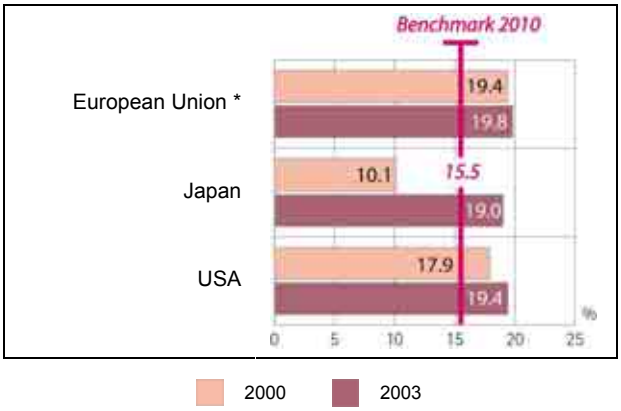
Students who reach the highest proficiency level (5) are expected to be capable "of completing sophisticated reading tasks, such as managing information that is difficult to find in unfamiliar texts; showing detailed understanding of such texts and inferring which information in the text is relevant to the task; and being able to evaluate critically and build hypotheses, draw on specialised knowledge, and accommodate concepts that may be contrary to expectations" (OECD, 2004). At the lowest level of proficiency (1), students are capable of "completing only the least complex reading tasks developed for PISA, such as locating a single piece of information, identifying the main theme of a text, or making a simple connection with everyday knowledge."[115] Students performing at level 1 or lower experience serious difficulties when dealing with written information and thus with any learning process dependent upon written material.

The average percentage of low performers in the 16 EU countries for which comparable PISA data is available for 2000 and 2003 was 19.8% in 2003, and thus did not improve from 2000 (see Chart 2.1). The PISA 2003 results also show that 7% of pupils (4.1% of girls, but 10.4% of boys) in the EU countries participating in the survey do not reach even the lowest proficiency level (1).

[115] OECD, 2004, *Learning for Tomorrow's World*, *First results from PISA 2003*.

Chart 2.1: Low achievers in reading

Indicator: Percentage of pupils with reading literacy proficiency level 1 and lower on the PISA reading literacy scale



Data source: OECD, PISA 2003 and 2000 database.

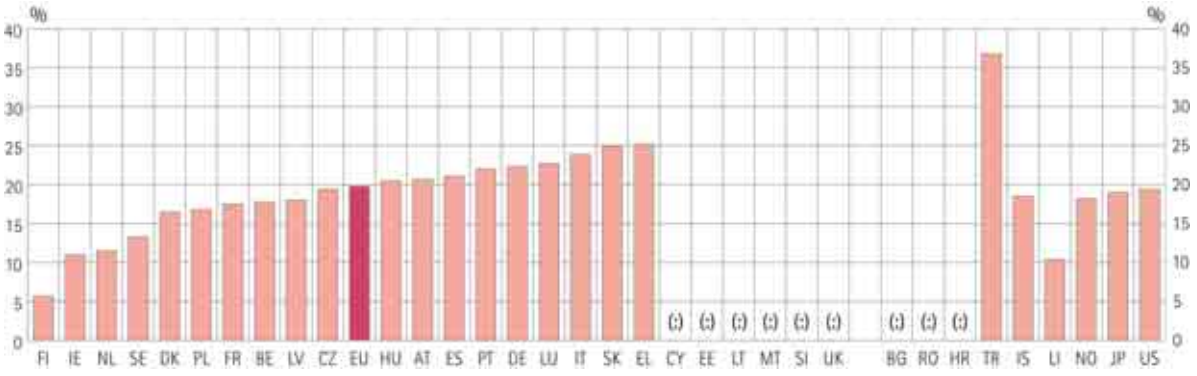
Additional note:

* In 2000, in the 16 EU countries for which comparable date was available both for 2000 and 2003, the percentage of 15 years old in level 1 or below was 19.4. This implies a benchmark of 15.5 (- 20%).

Following the European benchmark adopted by the Council, the proportion of 2000 (19.8%) should decrease by 20%, to reach 15.5% by 2010. In view of the fact that no progress was made between 2000 and 2003, it will be a major challenge for many countries to improve their performance sufficiently by 2010. However, it is expected that some of the reforms which were instigated by the PISA 2000 results will bear fruit in the next survey round in 2006.[116]

In 2003 Finland was the country with the lowest proportion of low achievers in reading literacy, followed by Ireland, the Netherlands and Sweden (Chart 2.2). EU countries with a high share of low achievers (greater than 21%) include Greece, Slovakia, Italy, Luxembourg, Germany, Portugal and Spain.

Chart 2.2: Percentage of pupils with reading literacy proficiency level 1 and lower in the PISA reading literacy scale, 2003



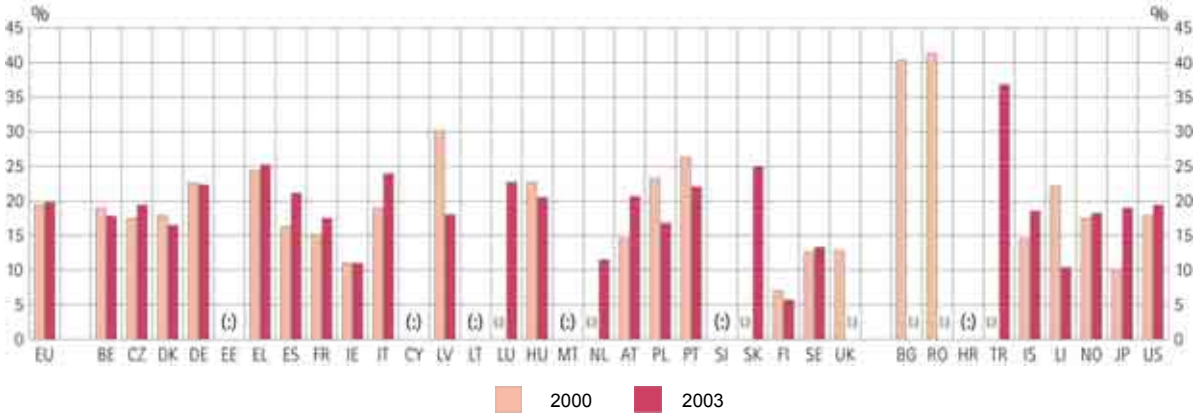
Data source: OECD PISA 2003 database

Additional notes:

EU figure: weighted average based on number of pupils enrolled and data for 16 countries (NL, LU not representative in 2000, UK in 2003, SK not participating in 2000)

[116] The analysis of the 2000 results began at the end of 2001 and there was thus not much time to implement reforms before the new survey round in 2003.

Chart 2.3: Percentage of pupils with reading literacy proficiency level 1 and lower in the PISA reading literacy scale, 2000-2003



	EU		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
2000	19.4		19.0	17.5	17.9	22.6	:	24.4	16.3	15.2	11.0	18.9	:	30.1	:	(35.1)	22.7	:
2003	19.8		17.8	19.4	16.5	22.3	:	25.2	21.1	17.5	11.0	23.9	:	18.0	:	22.7	20.5	:
Breakdown of 2003 results																		
1	12.5		10.0	12.9	11.9	13.0	:	15.0	13.7	11.2	8.3	14.8	:	5.0	:	14.0	14.4	:
<1	7.3		7.8	6.5	4.6	9.3	:	10.2	7.4	6.3	2.7	9.1	:	13.0	:	8.7	6.1	:
Boys	25.6		22.4	23.5	20.5	28.0	:	32.6	27.9	23.5	14.3	31.0	:	25.0	:	28.6	25.6	:
Girls	14.0		12.9	14.9	12.7	16.3		18.5	14.5	12.1	7.7	17.2	:	11.6	:	17.2	14.9	:

	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO	JP	US
2000	(9.5)	14.6	23.2	26.3	:	:	7.0	12.6	12.8	40.3	41.3	:	:	14.5	22.1	17.5	10.1	17.9
2003	11.5	20.7	16.8	22.0	:	24.9	5.7	13.3	:	:	:	:	36.8	18.5	10.4	18.2	19.0	19.4
Breakdown of 2003 results																		
1	9.4	13.4	11.5	14.4	:	16.9	4.6	9.4	:	:	:	:	24.3	12.8	7.9	11.8	11.6	12.9
<1	2.1	7.3	5.3	7.6	:	8.0	1.1	3.9	:	:	:	:	12.5	6.7	2.5	6.4	7.4	6.5
Boys	14.3	28.2	23.4	29.4	:	31.0	9.0	17.7	:	:	:	:	44.1	26.9	12.6	24.8	23.2	24.3
Girls	8.6	13.1	10.2	15.1	:	18.5	2.4	8.7	:	:	:	:	27.8	9.5	8.0	11.3	15.1	14.4

Data source: OECD PISA database

Additional note:
EU figure: weighted average based on number of pupils enrolled and data for 16 countries (NL, LU not representative in 2000, UK in 2003, SK not participating in 2000)

Countries which improved their mean performance significantly include Poland and Latvia. The improvement in Poland is considered to be the result of reforms in the school system implemented in 1999. There was a considerable increase in the numbers of low achievers in Austria, Italy and Spain (results for Luxembourg, where the numbers decreased, and for the Netherlands, where they increased, are not fully comparable between the two surveys). [117]

The USA and Japan have similar levels of low performers to the EU, however, in Japan the proportion has increased significantly compared to 2000.

It is also notable that the proportion of low achievers is much higher for boys than for girls. On an EU level the difference is more than 11 percentage points. Special attention has thus to be given to the poor performance of boys in order to reach the benchmark set by the Council. Girls have, on average, already passed the benchmark level.

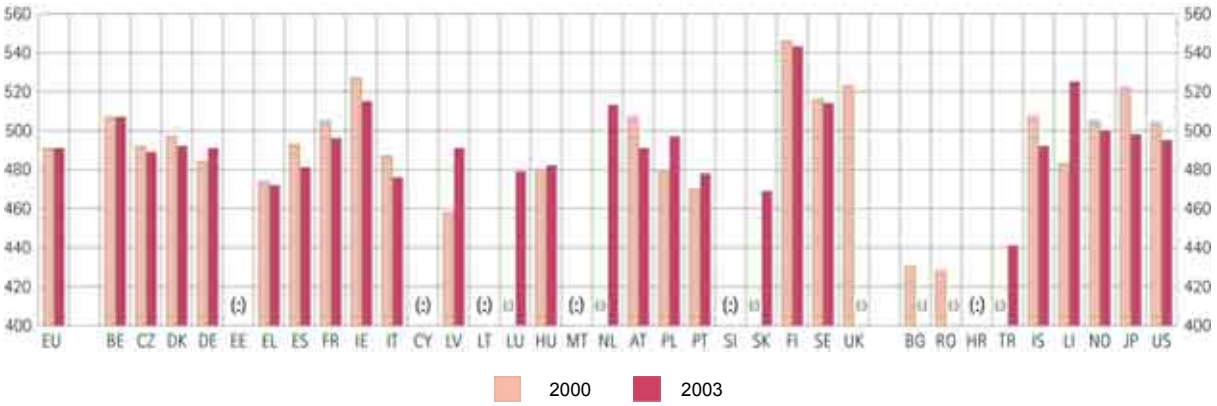
[117] In the Netherlands the response rate was too low in 2000 to ensure comparability; in Luxembourg the reasons for the incomparability of the results lie in the mode of implementation in 2000; in Austria the weighting of vocational schools changed between the two surveys.

2.2.2 Distribution and mean performance of students in reading literacy

According to the results of the PISA 2003 survey, Finland, with a mean score of over 540, is not only the leading country in Europe, but also a world leader (Chart 2.4). Finland also has the smallest performance gap between the best and the least performing pupils (204 points between the 10th and the 90th percentile), followed by Ireland, the Netherlands and Denmark. The gap is relatively wide in Belgium and Germany. However, the case of Finland indicates that it is possible to combine high performance standards with an equitable distribution of learning outcomes.

The USA and Japan have similar levels of mean performance to the EU, however in Japan the proportion has deteriorated significantly since 2000.

Chart 2.4: Mean performance of students, per country, on the PISA reading literacy scale, 2003



	EU		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
2000	491		507	492	497	484	:	474	493	505	527	487	:	458	:	(441)	480	:
2003	491		507	489	492	491	:	472	481	496	515	476	:	491	:	479	482	:
Breakdown of 2003 results by sex																		
Boys	471		489	473	479	471	:	453	461	476	501	455	:	470	:	463	467	:
Girls	511		526	504	505	513	:	490	500	514	530	495	:	509	:	496	498	:

	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO	JP	US
2000	(532)	507	479	470	:	:	546	516	523	430	428	:	:	507	483	505	522	504
2003	513	491	497	478	:	469	543	514	:	:	:	:	441	492	525	500	498	495
Breakdown of 2003 results by sex																		
Boys	503	467	477	459	:	453	521	496	:	:	:	:	426	464	517	475	487	479
Girls	524	514	516	495	:	486	565	533	:	:	:	:	459	522	534	525	509	511

Data source: OECD PISA database

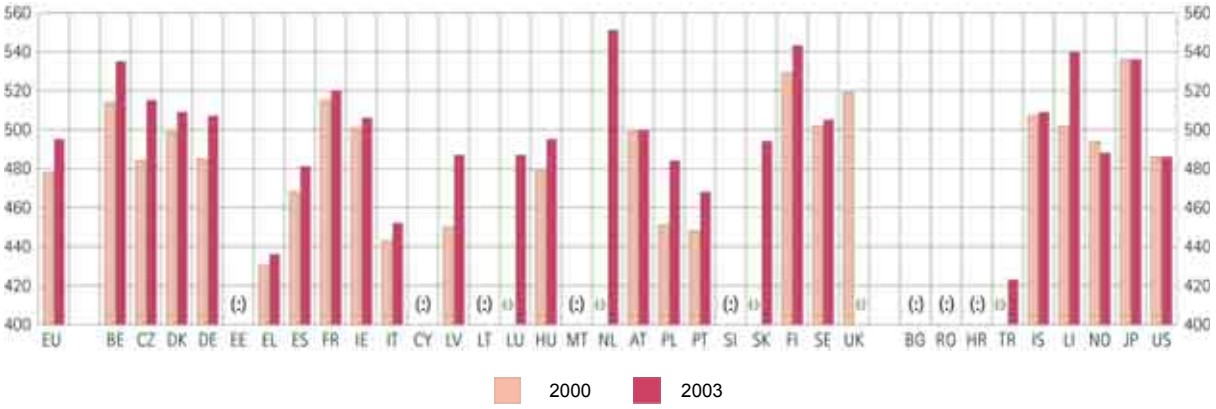
Additional notes:
EU figure: weighted average based on number of pupils enrolled and data for 16 countries (NL, LU not representative in 2000, UK in 2003, SK not participating in 2000); Significance levels: the mean in reading in 2003 is with a confidence level of at least 90% higher in 2003 than in 2000 for the following countries: PL, LV, LI, and lower in: AT,ES,IE, IT, IS, JP. The gender difference is significant in all countries except LI.

2.2.3 Mathematics and scientific literacy proficiency

Mathematics

In mathematics Finland is the best performing EU and OECD country, followed closely by the Netherlands (Chart 2.5). Belgium also performed relatively well (the Flemish Community had even better results than Finland). Outside the EU, Liechtenstein is a strong performer in Europe. Results for Japan are on a similar level as for the leading countries in Europe, while the US is below the EU average. The EU country with the weakest performance in 2003 was Greece.

Chart 2.5: Performance of students, per country, on the PISA mathematical literacy scale



	EU		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
Results for the change and relationships scale (for the space and shape scale see annex)																		
2000	478		514	484	499	485	:	430	468	515	501	443	:	450	:	(424)	479	:
2003	495		535	515	509	507	:	436	481	520	506	452	:	487	:	487	495	:
Results for all 4 mathematics literacy scales, 2003 and by sex																		
2003	495		529	516	514	503	:	445	485	511	503	466	:	483	:	493	490	:
Boys	500		533	524	523	508	:	455	490	515	510	475	:	485	:	502	494	:
Girls	490		525	509	506	499	:	436	481	507	495	457	:	482	:	485	486	:

	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO	JP	US
Results for the change and relationship scale																		
2000	:	499	451	448	:	:	529	502	519	:	:	:	:	507	502	494	536	486
2003	551	500	484	468	:	494	543	505	:	:	:	:	423	509	540	488	536	486
Results for all 4 mathematics literacy scales, 2003 and by sex (for the space and shape scale see annex)																		
2003	538	506	490	466	:	498	544	509	:	:	:	:	423	515	536	495	534	483
Boys	540	509	493	472	:	507	548	512	:	:	:	:	430	508	550	498	539	486
Girls	535	502	487	460	:	489	541	506	:	:	:	:	415	523	521	492	530	480

Data source: OECD PISA database

Additional notes:

EU figure: weighted average based on number of pupils enrolled and data for 16 countries (NL, LU not representative in 2000, UK in 2003, SK not participating in 2000). Significance levels: the mean in mathematics /change and relationships scales in 2003 is with a confidence level of at least 90% higher in 2003 than in 2000 for the following countries: BE, CZ, FI, DE, HU, LV, PL, PT, ES, LI. Gender differences for the 4 scales for 2003 are statistically significant for all countries except: AT, BE, PL, LV, NL, JP

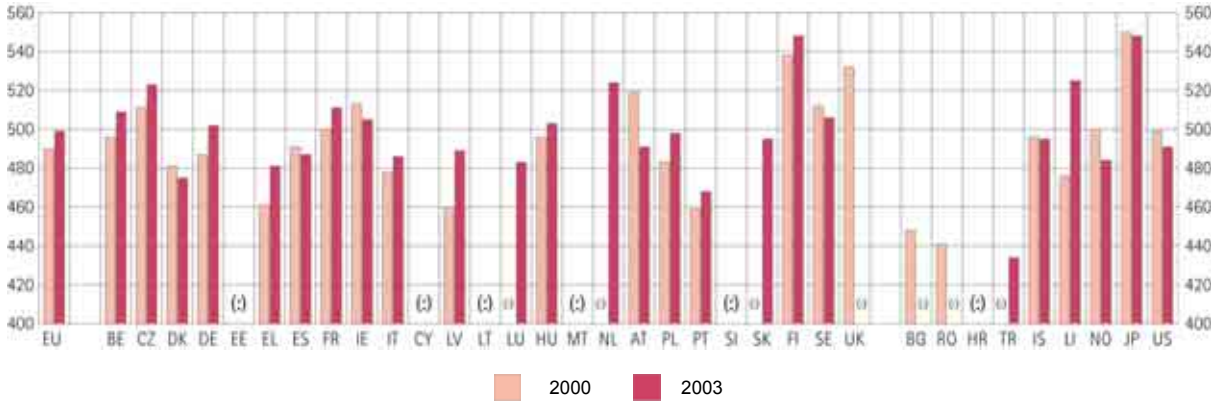
As a result of a change of the scope of the survey, only two of the four mathematics scales are comparable between 2000 and 2003. Chart 2.5 shows the results for the scale change and relationships (for the space and shape scale see annex A7). Based on this scale the Netherlands and Finland show the best results, followed by Belgium. Compared to 2000, the EU results (for this scale) improved considerably, while results for Japan and the USA remained stable. Greatest progress was made in Latvia and Poland, while progress in the Czech Republic, Germany, Belgium, Portugal, Hungary, Finland and Spain was also significant.

While girls in the 16 EU countries for which comparable information is available perform on average 40 points better in reading, boys perform about 10 points better in mathematics. The only country in which girls perform better than boys in mathematics is Iceland.

Science

On the scientific literacy scale Finland once more achieved the best results in 2003 (tied with Japan), followed by the Netherlands and the Czech Republic (Chart 2.6). Portugal recorded the worst average performance of EU countries. The world-wide comparison shows that Japan is performing at the same level as Finland, whereas the US results are below the EU average.

Chart 2.6: Performance of students, per country, on the PISA scientific literacy scale, 2003



	EU		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
2000	490		496	511	481	487	:	461	491	500	513	478	:	460	:	(443)	496	:
2003	499		509	523	475	502	:	481	487	511	505	486	:	489	:	483	503	:
Performance in 2003 by sex																		
Boys	502		509	526	484	506	:	487	489	511	506	490	:	487	:	489	503	:
Girls	497		509	520	467	500	:	475	485	511	504	484	:	491	:	477	504	:

	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO	JP	US
2000	(529)	519	483	459	:	:	538	512	532	448	441	:	:	496	476	500	550	499
2003	524	491	498	468	:	495	548	506	:	:	:	:	434	495	525	484	548	491
Performance in 2003 by sex																		
Boys	527	490	501	471	:	502	545	509	:	:	:	:	434	490	538	485	550	494
Girls	522	492	494	465	:	487	551	504	:	:	:	:	434	500	512	483	546	489

Data source: OECD PISA database

Additional note:
EU figure: weighted average based on number of pupils enrolled and data for 16 countries (NL, LU not representative in 2000, UK in 2003, SK not participating in 2000).

Significance levels: the mean in science performance in 2003 is with a confidence level of at least 90% higher in 2003 than in 2000 for the following countries: BE, CZ, FI, FR, DE, EL, HU, LV, IT, PL, LI, and lower for AT, NO, gender differences are statistically significant (boys better than girls) for DK, LU, EL, PL, PT, SK, LI; girls perform significantly better than boys in: FI and IS.

The EU average performance improved from 2000, with the strongest improvement (15 points and more) made in Latvia, Greece, Poland and Germany, while Belgium, the Czech Republic, Finland and France also improved significantly (10 points and more). The average performance in the US and Japan, however, did not improve. Boys performed on average slightly better than girls in 2003, but the difference is smaller than in mathematics and not in all cases statistically significant (in Finland and Iceland there is a statistically significance performance difference in favour of girls).

2.2.4 Results from TIMSS

For some of the countries not participating in PISA TIMSS 2003 gives an indication of performance levels (the following analysis relates to 8th grade).

As regards the two TIMSS literacy areas mathematics and science Estonia showed relatively high scores in 2003, while Cyprus scored relatively low (see table.. in annex).
Of the countries participating in PISA the Netherlands and Belgium (Flemish Community) scored also relatively high in TIMSS.

2.2.5 Comparison of results for different literacy fields

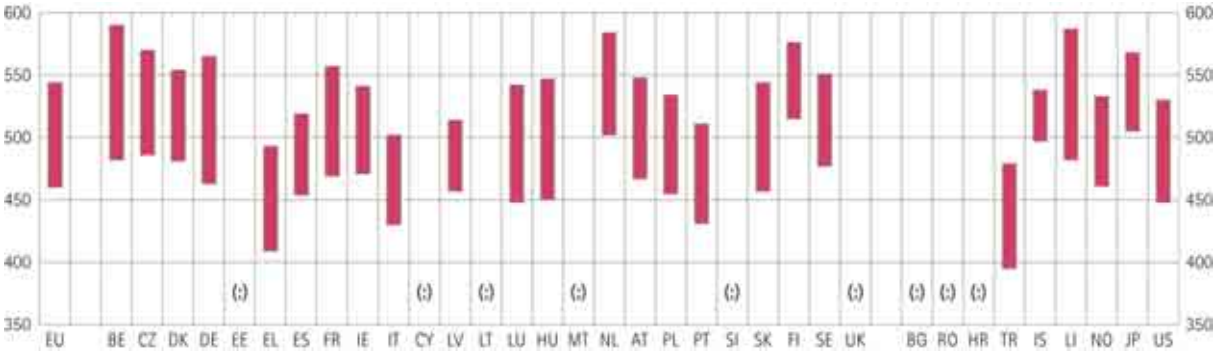
The variation in performance in mathematical, scientific and reading literacy *within countries* makes it possible to determine the countries' relative strengths in the different domains. Many countries achieved similar results in reading, mathematical and scientific literacy. There are, however, some exceptions. Belgium, the Czech Republic, Denmark and Slovakia performed much better in mathematical than in reading literacy. Countries with relative strength in reading rather than in maths include Greece, Italy and Portugal. The Czech Republic, France, Hungary and Slovakia perform considerably better in science than in reading.

The comparison also shows that it seems to be more difficult to improve performance in reading than in maths and sciences. It seems that family background has a greater influence on reading skills than on the other areas, which are more determined by what is actually taught in schools.
In cases where sub-national data are available the data show considerable differences in performance between regions of the same country (for example Belgium, Germany, Italy).

2.2.6 Literacy and socio-economic background

School performance is closely linked to the socio-economic background of young people. In the 19 EU countries for which 2003 data was available (excluding the UK, for which the results were not representative), the average performance gap between the bottom and the top quarter of the socio-economic index amounts to 84 points on the PISA mathematical scale. Belgium has the largest gap (108), followed by Germany and Hungary. Latvia, on the other hand, has the smallest gap (57), while Finland has the next smallest performance gap and at the same time, the best performance of the bottom quarter (515).

Chart 2.7: Performance on the PISA mathematical literacy scale by quarters of socio-economic index of occupational status (HISEI), 2003.
(length of bar shows difference in performance between bottom quarter and top quarter)



	EU		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
Bottom quarter	460		482	486	481	463	:	409	454	469	471	430	:	457	:	448	450	:
Top quarter	544		590	570	554	565	:	493	519	557	541	502	:	514	:	542	547	:
Difference	84		108	84	73	102	:	84	65	88	70	72	:	57	:	94	97	:

	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO	JP	US
Bottom quarter	502	467	455	431	:	457	515	477	:	:	:	:	395	497	482	461	505	448
Top quarter	584	548	534	511	:	544	576	551	:	:	:	:	479	538	587	533	568	530
Difference	82	81	79	80	:	87	61	74	:	:	:	:	84	41	105	72	63	82

Data source: OECD, Pisa (2003), data from the initial report (table 4.2a)
Additional note: EU figure: weighted average based on number of pupils enrolled and data for 19 countries

The data also shows a considerable difference in performance between native students (students born in the country of assessment, with at least one parent born in the same country), first-generation students (born in the country of assessment but whose parents were born in another country) and non-native students (born in another country and whose parents were also born in another country).

Table 2.8: Performance on the PISA reading literacy scale by students' nationality and the nationality of parents, 2003

	EU		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
Native students	:		523	497	497	517	:	477	483	505	516	478	:	492	:	500	482	:
1st generation students	:		439	:	440	420	:	:	:	458	:	:	:	477	:	454	:	:
Non-native students	:		407	:	454	431	:	429	:	426	:	:	:	:	:	431	:	:

	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO	JP	US
Native students	524	501	497	481	:	470	546	522	:	:	:	:	442	494	534	505	499	503
1st generation students	475	428	:	471	:	:	:	502	:	:	:	:	:	:	503	:	:	481
Non-native students	463	425	:	:	:	:	:	433	:	:	:	:	:	:	467	436	:	453

Data source: OECD, Pisa (2003)

Complete data on PISA reading performance by nationality is only available for 8 EU countries. Out of these Belgium showed the biggest gap between native and non-native students (the differences between the language communities in Belgium play a role hereby). Sweden and Germany have also relatively large gaps, while Denmark records relatively small performance gaps between these groups.

2.2.7 Research findings on skills in the knowledge society

In 2005 the Commission launched a study to analyse results from the surveys PISA, TIMSS and PIRLS.[118]

The study showed that differences within countries are more important than differences between countries. Only about one tenth of total variation in student performance lies between countries and can thus be captured through a comparison of country averages while the remaining nine tenths of variation in student performance occurs within countries, that is mainly between schools and between students within schools.

The analysis also showed that a high degree of equality in achievement scores within countries (low variance around the mean) can be achieved without compromising the overall level of achievement. An example for this is the performance of Finland.

Data from PISA furthermore suggests that there is no clear statistical correlation between the degree of institutional differentiation of school systems (use of tracking and streams) and average student performance. There is, though, a clear statistical correlation between the degree of institutional differentiation and variance (performance gaps) in student performance (the stronger the institutional differentiation greater the variance). Institutional differentiation according to the study also means that socio-economic background matters more. The more and earlier students are divided into separate groups according to their academic performance, the more students' socio-economic background matters for their academic performance. Educational systems' ability to provide students from different socio-economic backgrounds with equal opportunities of learning thus diminishes as the use of tracking and institutional differentiation in education systems increases. The study furthermore showed that pre-schooling probably is beneficial for later academic achievement. This is confirmed by evidence both from PISA and PIRLS. Data from TIMSS (2003) confirm this observation. However, currently the socio-economic background of children also has an impact on their ability to take

[118] Haahr et al (2005) *Explaining Student Performance- Evidence from the international PISA, TIMSS and PIRLS surveys*

advantage of pre-schooling. Students from privileged backgrounds thus profit from more pre-schooling and the positive impact of pre-schooling on performance.
The analysis also showed that there is not a strong relation between educational spending per student and PISA achievement scores. This implies that there is considerable scope for the improvement of educational systems within the given framework of resources available.

School autonomy seems positively correlated to student performance. Across schools in the different countries participating in the PISA survey, there is a clear positive correlation between the degree to which schools themselves decide on budget allocations within schools and the average student performance. Schools responsibility for appointing and dismissing teachers and for student disciplinary policies and the courses offered are also positively correlated to student performance. The analysis of PISA 2000 also suggests that external exams may increase the performance of autonomous schools, serving as a tool for school accountability.

As regards student background it seems that socio-economic background matters significantly for students' academic performances, but that the degree to which it matters can be affected by educational policies and by approaches focusing on providing all children, irrespective of background, with high quality education. The degree to which socio-economic background matters thus differs significantly across countries. Education systems can compensate for different socio-economic backgrounds. While in many countries the average performance of students with foreign background is significantly weaker than that of native students, foreign background matters more in some countries than in others (the ethnic and social composition of the foreign population also plays a role). There are significant differences in the average achievement scores of non-native students who attend schools with a high density of non-native students and non-native students who attend schools with a low density of non-native students.

2.3 Performance and progress in the completion of upper-secondary education

A high level of general educational attainment among the working population is a prerequisite for a dynamic and competitive European economy, and is also held to be essential for personal fulfilment. Completion of upper-secondary education was therefore selected by the Ministers for Education for a European Benchmark.

European Benchmark 2010
By 2010, at least 85% of 22-year-olds in the European Union should have completed upper-secondary education.[119]

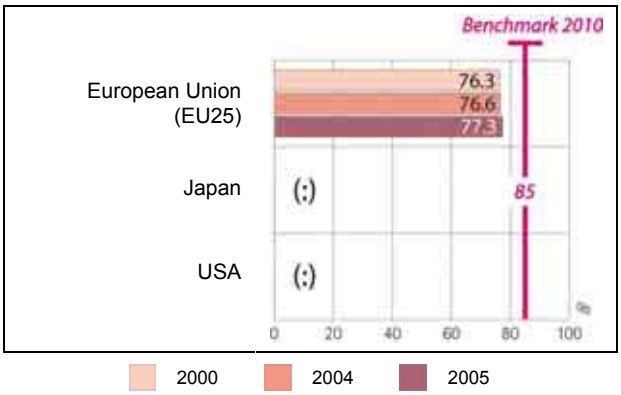
This target poses a significant challenge for the majority of Member countries (Chart 2.10). The present average rate in the Union (for the population 20-24) is 77.3% (2005). The target is also part of the European Employment Strategy since 2003 and several Member States have set national targets.[120] It should be borne in mind that while several countries have improved these figures only slightly in recent years, others have made good progress, including, for example, Portugal and Malta, though from a low starting point.[121]

[119] Indicator: *Percentage of those aged 22 who have successfully completed at least upper-secondary education (ISCED 3).* Due to statistical reasons (the sample size in the Labour Force Survey for a one year cohort is too small to produce reliable results) the following proxy indicator is used in the analysis: *Percentage of those aged 20-24 who have successfully completed at least upper-secondary education (ISCED 3).*

[120] See Joint Employment Report 2005/2006, Annex, table 3, national targets: MT, PT: 65%; ES: 80%; BE, EE, NL: 85%, UK: 90% by 2015; DK 95% by 2015.

[121] Upper secondary attainment includes both degrees that give access to further studies in tertiary education and formal qualifications that can be used only in the labour market. The latter are relatively common in France, Poland, Slovenia and UK.

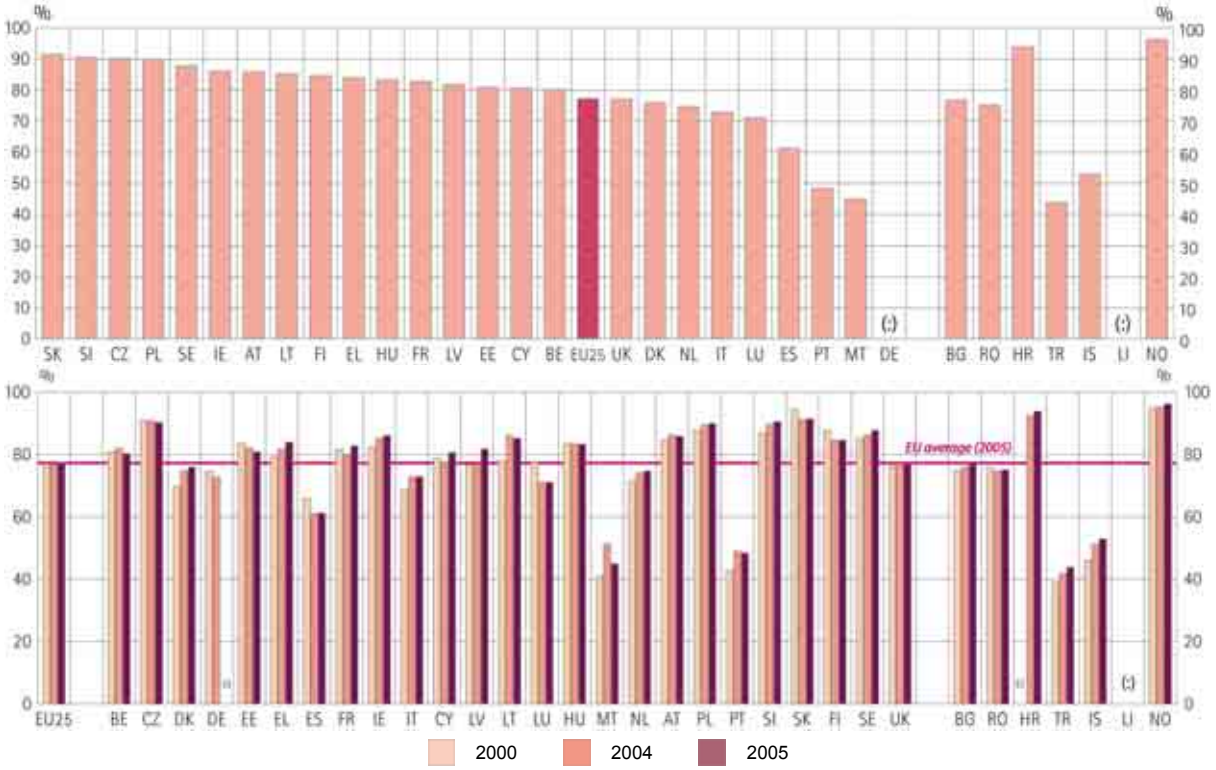
Chart 2.9: Completion of upper secondary education
Indicator: Percentage of those aged 20-24 who have successfully completed at least upper-secondary education (ISCED 3)



Data source: Eurostat (Labour Force Survey).

Between 2000 and 2005, the upper-secondary completion rate in EU25 improved only by about 1 percentage point in total (0.2 percentage points per year, although it would have to improve by one and a half percentage points per year in order to reach 85% by 2010. The benchmark of 85% will be difficult to achieve given the slow progress since 2000.

Chart 2.10: Percentage of the population (20-24) having completed at least upper-secondary education, 2002-05



	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU
2000	76.3		80.9	91.1	69.8	74.7	83.6	79.3	65.9	81.6	82.4	68.8	79.0	76.8	77.9	77.5	83.6
2004	76.6		82.1	90.9	74.8	72.8	82.3	81.9	61.1	79.8	85.3	72.9	77.6	76.9	86.1	71.1	83.4
2005	77.3		80.3	90.3	76.0	:	80.9	84.0	61.3	82.8	86.1	72.9	80.7	81.8	85.2	71.1	83.3

	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO
2000	40.9	71.7	84.7	87.8	42.8	87.0	94.5	87.8	85.2	76.4	74.9	75.8	:	38.9	46.1	:	95.1
2004	51.4	74.2	86.3	89.5	49.0	89.7	91.3	84.6	86.3	76.4	76.0	74.8	92.5	41.8	51.3	:	95.3
2005	45.0	74.7	85.9	90.0	48.4	90.6	91.5	84.6	87.8	77.1	76.8	75.2	93.9	43.9	53.0	:	96.3

Data source: Eurostat (Labour Force Survey).

Additional notes:
Due to changes in the survey characteristics, data lack comparability with former years in SE and BG (from 2001), LV and LT (from 2002), DK and HU (from 2003), AT (quarter 2 from 2003; from 2004 continuous survey – covering all weeks of the reference quarter) and FI (quarter 1 from 2003).
IE, LU, MT, FI,HR, IS (2005), IE, IS (2004): Data is provisional.
CY: Students usually living in the country but studying abroad are not yet covered by the survey.
EU: Aggregate results based on provisional UK data (all GSCE levels excluded until new ISCED 3C definition implemented 2005)
In case of missing country data, the EU aggregates are provided using the closest available year result.
Comparable data not available for US and JP.
From 5 December 2005 release, Eurostat implements a refined definition of the educational attainment level 'upper secondary' in order to increase the comparability of results in the EU. For 1998 data onwards ISCED 3c levels of duration shorter than 2 years do not fall any longer under the level 'upper secondary' but under 'lower secondary'. This change implies revised results in DK (from 2001), ES, CY and IS. However, the definition can not yet be implemented in EL, IE and AT where all ISCED 3c levels are still included.

Sixteen EU countries are at present achieving completion rates beyond 80%, of which four countries (the Czech Republic, Slovakia, Poland and Slovenia) have rates of 90% and over (Chart 2.10). Portugal and Malta have the lowest completion rates in the EU (below 50%), but both have made substantial progress in recent years in improving youth education attainment levels. Most of the other Member States, however, made little progress since 2000.

2.3.1 Upper-secondary completion rate by gender

Women have closed the gender gap in recent years and now record higher participation rates and attainment levels in education than men. Table 2.11 shows that women now have, on average, a 5 percentage point lead in the completion of upper-secondary education among young people aged 20-24 in the EU25. Countries in which women have more than a 10 percentage point lead over men include Estonia, Italy, Spain, Cyprus and Portugal. Countries with a better balance between males and females include the UK, Slovakia, and the Czech Republic. Compared to women, young men are much further away from the 85% benchmark set by the Council. Efforts are being made in several countries to address the issue and improve attainment levels of boys in upper-secondary education.

Table 2.11: Completion of upper-secondary, by gender, 2005, population aged 20-24

	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU
Males	74.6		76.0	90.8	74.5	:	74.9	79.4	54.8	81.2	83.4	67.8	72.0	77.0	80.5	70.4	81.3
Females	80.0		84.6	89.8	77.5	:	87.0	88.7	68.2	84.3	88.8	78.1	88.9	86.6	90.1	71.7	85.4

	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK		BG	RO	HR	TR	IS	NO
Males	41.7	70.6	84.1	88.4	40.4	87.8	90.9	81.2	86.6	77.5		77.3	74.1	93.5	38.0	49.4	95.2
Females	48.4	78.9	87.6	91.7	56.6	93.5	92.1	87.9	89.0	76.7		76.3	76.4	94.4	50.9	56.9	97.3

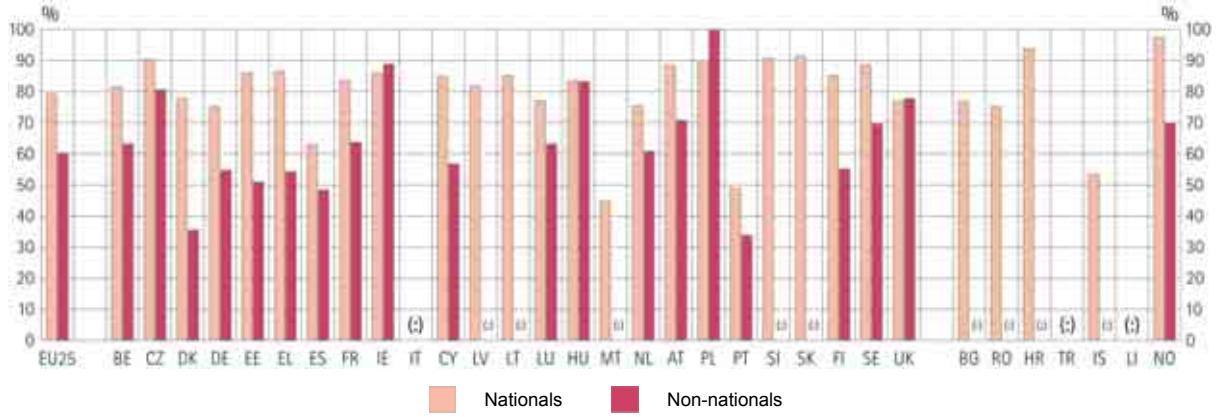
Data source: Eurostat (Labour Force Survey)

Additional notes:
See table 2.10

2.3.2 Completion of upper-secondary by non-nationals

Migrants tend to have lower levels of upper-secondary education and to perform less well in reading literacy, as shown by the OECD PISA study. In 2005 the gap between the attainment levels of nationals and non-nationals in the EU was 19 percentage points (compared to 18 percentage points in 2004), with gaps larger than 20 percentage points in Germany, Greece and Cyprus. In some countries (for example, in Poland), non-nationals seem to achieve higher attainment levels than nationals, but the quality of results in small countries or in countries with a low proportion of non-nationals is affected by small sample size.

Chart 2.12: Completion of upper-secondary education by nationals and non-nationals, age 20-24, 2005.



	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU
Nationals	79.1		81.6	90.4	77.8	75.2	86.0	86.5	62.9	83.6	85.9	:	84.9	81.9	85.1	77.1	83.4
Non-nat.	60.3		63.2	80.6	*35.6*	54.7	*50.9*	54.2	48.4	63.7	88.9	:	56.8	:	:	63.2	*83.2*

	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO
Nationals	44.7	75.4	88.4	90.0	48.9	90.7	91.5	85.1	88.6	77.0	76.8	75.2	93.9	:	53.4	:	97.4
Non-nat.	:	60.8	70.8	*100*	*33.8*	:	:	*55.2*	69.6	77.8	:	:	:	:	:	:	69.9

Data source: Eurostat (Labour Force Survey, spring results, except FI, 1st quarter)

Additional notes:
Data in italics: quality affected by small sample size.
CY: Students usually living in the country but studying abroad are not yet covered by the survey.
EU: Aggregate results based on provisional UK data (all GSCE levels excluded until new ISCED 3C definition implemented 2005)

2.4 Conclusion

"Key competences" are an essential element of Europe's education and training strategy. Nearly 20 % of 15-year-olds are low achievers in reading literacy in the Member States and reaching the benchmark of a 20% decrease in this figure by 2010 will demand major efforts from all parties. All countries will have to draw on each others' experience in different domains to tackle the problem of poor performance in basic skills. Countries like Finland and the best performing Asian countries have valuable expertise to share with others. The case of Finland also shows that it is possible to combine high performance standards with an equitable distribution of learning outcomes among pupils. The examples of countries such as Poland and Latvia implies that as a result of educational reform progress in improving mean scores can be achieved in the medium in several skills areas.

The analysis has also shown that European Union countries face a major challenge in relation to the European benchmark of an upper-secondary attainment level of 85% of 20-24-year-olds. A number of countries are already performing well, especially in the case of new Member States the Czech Republic, Poland, Slovakia and Slovenia which have upper-secondary attainment levels of over 90% (2005). Greater attention will have to be given to the performance of boys, young people with special educational needs and children of foreign origin.

III. INCREASING RECRUITMENT TO SCIENTIFIC AND TECHNICAL STUDIES

Main messages

- The EU is on course to over-achieve the benchmark of an increase of 15% in the number of tertiary graduates in mathematics, science and technology (MST) by 2010 (corresponding to an absolute increase of 100,000 graduates). Average annual growth was over 5% in the period 2000-2003 (over 30 000 graduates per year). If the year 2000 is used as a basis this aspect of the benchmark has already been achieved in 2003.

- However, growth is currently even stronger in the USA and in important new competitor countries like India and China (the number of MST graduates in China in 2003 for the first time surpassed the EU figure). Demographic trends could also spell a much slower growth in the number of MST graduates in Europe in the long term.

- The strong overall growth in the EU also masks considerable differences between Member States and between disciplines: while the number of graduates in computing increased by 54% between 2000 and 2003 the number of graduates in physical science declined in the same period.

- The proportion of students graduating in mathematics, science or technology is higher in the EU (24% in 2003) than in the USA (19%) or Japan (23%), but this share declined slightly since 2000.

- Compared to the US the EU has fewer researchers in the labour market, both in absolute terms and as a proportion of the total labour force (in 2003 EU: 1.18 million or 5.4 per 1000, USA: 1.26 million or 9.0 per 1000).

- There was also some progress in reducing the gender imbalance among MST graduates. The proportion of female students increased from 30% in 2000 to 31% in 2003. It is also notable that gender imbalance is more predominant in "engineering, manufacturing and construction" fields and in computing and less pronounced in "mathematics and statistics", while in "life sciences" women predominate.

3.1 Introduction

Higher education is located at the crossroads of education, research and innovation, and mathematics, science and technology in particular are vital to the knowledge-based and increasingly digital economy. The issue of increasing recruitment to these studies, but particularly to technological fields, has been emphasised on numerous occasions.

The Council underlined the importance of this goal when it adopted a benchmark in this area in May 2003. Furthermore, it underlined that the education of an adequate supply of scientific specialists was all the more important in the light of the Barcelona European Council goal of increasing overall spending on research and development (R&D) to the level of 3% of GDP

by 2010.[122] The European Council has declared that, "special attention must be given to ways and means of encouraging young people, especially women, in scientific and technical studies as well as ensuring the long-term recruitment of qualified teachers in these fields".[123]

Indicators for monitoring Performance and Progress

"Mathematics, science and technology" (MST) comprise the following fields: *life sciences, physical sciences, mathematics and statistics, computing, engineering and engineering trades, manufacturing and processing, architecture and building*.[124]

The following indicators have been selected to monitor progress in the area:

- *Students enrolled in mathematics, science and technology as a proportion of all students in tertiary education (ISCED 5A, 5B and 6).*
- *Total number of tertiary (ISCED 5A, 5B and 6) graduates from mathematics, science and technology fields.*
- *Graduates in mathematics, science and technology (ISCED 5A, 5B and 6) as percentage of all graduates (ISCED 5A, 5B and 6).*
- *Number of tertiary graduates in mathematics, science and technology per 1000 inhabitants aged 20-29, by ISCED levels 5A, 5B and 6.*

The students enrolled and the graduates are also broken down by gender. The selected indicators address mainly the key aspects of motivating more young people to choose studies and careers in the field of MST (in particular research careers and scientific disciplines) and of improving the gender balance.

It should be noted that the total number of graduates as well as the growth rates are overstated in the data because of double-counting of graduates at various degree levels and the impact of the introduction of short study cycles (if only first degree graduates are considered the compound growth rate 2000-2003 would, however, be only 2 percentage points lower). Double counting of graduates is a problem in some countries because of the specific features of the educational system (for instance, in France). Since both first and second degrees (the latter represent about 15% of graduates, with new PhDs representing 5% of graduates) are included, the indicators cover the total number of graduates during the actual year and not the number of first time graduates. The number of people leaving the education system with a MST degree is thus lower.

Data on the number of first-time graduates is collected, but many countries cannot provide the unduplicated count. Data on first-time graduates by field of studies is *not* collected, because it is currently not available from administrative sources, and in the past there has been only limited interest in it. In addition, because of differences in the degree structures there is no full comparability of data between countries.[125]

Existing data in the field of 'Mathematics, science and technology' should allow Member States to identify countries where good policy practices prevail. It is, however, still important to improve the comparability and completeness of data.

[122] European Commission (2003) *Third European Report on Science and Technology indicators*.
[123] Presidency Conclusions European Council, Stockholm, 2001.
[124] ISCED fields of education 42, 44, 46, 48, 52, 54, 58.
[125] Furthermore, data on graduates by field has in the past not been available for Greece (in 2004 there were about 13 000 MST graduates in Greece).

3.2 Performance and progress in the field of increasing recruitment to scientific and technical studies

3.2.1 General student population trends

About 30 million people in the EU (of which 49% female and 51% male) are between 20 and 24 years of age, a typical tertiary student age bracket. The student-age population has declined slightly in the recent past (-0.6% in 2000-2003), with large differences in trends among Member States. Most Member States experienced an increase over this period, but Southern European countries (where birth rates dropped in the 1980s), and some new Member States registered a decrease. Southern European countries and many Member States (the number of births dropped sharply in most of them after 1989) will see a further decline in their student age population in the years up to 2010.

Despite the slight decline in the numbers of young people, the increasing tertiary education participation rate and an increase in the number of students from outside Europe studying in the EU (currently 0.5 million students) led to a growth of 11% in the number of tertiary students in the EU over the period 2000-2003, or on average 3.6% per year. In 2003 the number increased by 3.4%, slightly less than in previous years. Growth in recent years has been particularly strong in the New Member States, where the numbers have expanded by one quarter since 2000. In 2003 there were 3.7 million new entrants to tertiary studies in the EU, compared to 3.5 million in 2000 and compared to a one year cohort in the student age bracket of about 6 million.

Table 3.1: Total number of tertiary students 2000-2003 (in 1000)

	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
2000	15206		356	254	189	2055	54	422	1829	2015	161	1770	10.4	91	122	2.4	307	6.3
2002	16329		367	285	195	2160	61	529	1833	2029	176	1854	13.9	111	149	3.0	354	7.3
2003	16887		375	287	202	2242	64	562	1841	2119	182	1913	18.3	119	168	3.1	391	8.9

	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO	JP	US
2000	488	261	1580	374	84	136	270	347	2024	261	453	:	1015	9.7	0.5	191	3982	13202
2002	517	224	1906	397	99	152	284	383	2241	228	582	:	1678	11.6	:	197	3967	15928
2003	527	230	1983	401	102	158	292	415	2288	231	644	122	1919	13.3	0.4	212	3984	16612

Data source: Eurostat (UOE)

Additional notes: 2000-2003: DE, SI: data exclude ISCED level 6; 2000-2002: RO: Data exclude ISCED 6

3.2.2 Students enrolled in mathematics, science and technology (MST)

The number of tertiary MST students has increased by more than 10% since 2000 (if it is taken into account that Greece is not included in the 2000 figures). Growth has been particularly strong in Poland, Lithuania and Cyprus. However, overall growth slowed down in the EU in 2003[126] and results available from national sources for more recent years for a few larger Member States imply that the rate of change might have decelerated even further since. National data for the UK and France show a slowing down of the growth in new entrants to MST studies in the academic year 2003/04, while data for Germany show a slight decline in new entrants in 2004/05 compared to the year before.
The share of female students has not changed since 2000. There are considerable differences within countries between the share of female MST students and the share of female MST graduates, implying differences in dropout rates between men and women and also between countries.

[126] The slowdown is overstated in the statistics because of a break in time series in the UK

Table 3.2: Number of tertiary MST students 2000-2003 (in 1000)

	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
2000	3187		74.6	74.5	38.3	587.2	11.4	:	525.1	:	45.3	433.2	1.8	15.1	33.4	0.4	65.7	0.7
2002	3692		81.0	83.3	39.1	640.1	12.7	157.2	556.8	:	47.7	441.6	2.3	19.2	38.2	0.5	63.9	0.9
2003	3695		70.7	88.1	39.7	669.7	13.8	:	570.8	:	46.0	459.1	3.0	20.1	42.8	:	81.9	1.1
Of which women (%)																		
2000	29.1		23.4	24.2	30.7	24.6	30.9	:	31.2	:	34.5	33.9	30.5	34.2	33.4	:	21.7	24.9
2003	29.0		24.5	25.3	32.5	26.0	33.1	:	30.9	:	31.7	33.9	27.0	26.3	30.2	:	25.0	30.0

	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO	JP	US
2000	80.8	73.9	284.8	102.2	19.7	38.1	97.9	106.0	477.4	64.5	124.2	:	301.0	1.7	:	29.9	819.4	:
2002	84.4	72.2	365.8	113.8	21.1	42.2	105.7	110.2	592.5	63.1	146.2	:	342.8	2.1	:	35.2	811.7	:
2003	84.7	57.9	397.9	116.2	22.3	42.0	111.5	113.7	484.9	62.6	173.0	29.3	393.6	2.3	0.2	37.6	802.9	:
Of which women (%)																		
2000	16.1	25.1	29.2	33.4	26.2	27.8	24.7	34.6	31.5	41.5	32.8	:	28.2	34.7	:	28.9	12.8	:
2003	16.1	26.7	28.7	33.1	24.7	30.3	25.6	33.9	29.5	37.2	35.1	31.0	25.7	33.9	25.2	29.3	13.8	:

Data source: Eurostat (UOE)

Additional notes
Austria: Break in time series in 2003, before 2003 Austria reported students studying more than one filed in each of the fields there were registered leading to double counting, from 2003 students are attributed to only one field
EU total for 2003 includes Greece (with 2002 data), EU total for 2000 would be about 3330 if Greece was included
2000-2003: DE, SI: data exclude ISCED level 6; 2000-2002: RO: Data exclude ISCED 6

MST students represented about 22% of the total tertiary student population in 2003. However, if only those students are taken into consideration for whom the field of study is known (and not including France, for which no data is available), the share rises to 26%, a similar figure to that in 2000 (Table 3.3). In Finland, Ireland, the Czech Republic and Spain, this proportion was substantially higher (over 30%), whereas in Denmark, Cyprus, Latvia, Luxembourg, Malta, and the Netherlands, the proportion was below 20%.

Table 3.3: Students enrolled in MST as a proportion of all students in tertiary education (%)

	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
2000	26.1		21.0	31.7	20.2	28.6	21.3	:	28.8	:	35.3	24.5	17.7	16.5	27.4	17.4	21.5	11.5
2002	26.1		22.1	31.5	20.0	29.7	20.9	29.7	30.5	:	34.4	23.8	16.5	17.4	25.7	18.0	18.0	12.2
2003	25.9		20.5	30.8	19.7	29.9	21.6	:	31.1	:	30.6	24.0	16.5	16.9	25.5	:	21.0	12.8

	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO	JP	US
2000	16.8	25.6	19.6	27.3	23.5	28.1	36.2	30.6	28.8	24.7	28.6	:	29.6	17.5	:	16.6	23.3	:
2002	16.6	25.5	20.7	28.9	21.3	27.7	37.2	28.8	26.4	27.7	26.0	:	29.7	18.1	:	19.0	21.8	:
2003	16.3	25.3	21.5	29.0	22.0	26.6	38.2	27.5	24.4	24.4	27.7	24.1	31.3	17.2	35.2	18.5	21.6	:

Data source: Eurostat (UOE)

Only students for which the field of studies is known taken into consideration

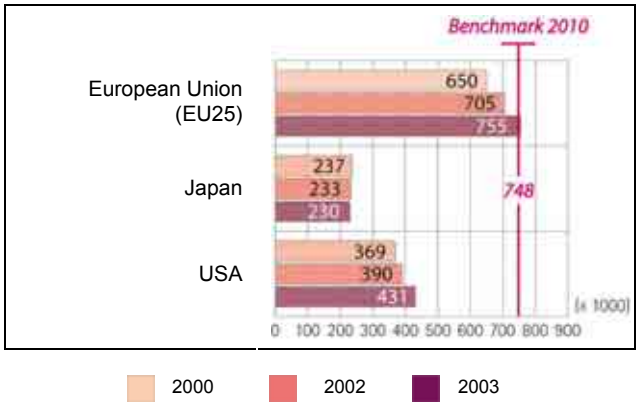
Additional notes:
EU25: FR not included, MST students in EL estimated for 2000, 2003 figure includes estimate for Greece
BE: Data exclude independent private institutions (their number is, however, small)
DE, SI, RO: Data excludes ISCED level 6 LU, CY: Most tertiary students study abroad and are not included

3.2.3 Number of graduates in mathematics, science and technology

European Benchmark 2010[127]
The total number of graduates in mathematics, science and technology in the European Union should increase by at least 15% by 2010 while at the same time the level of sex imbalance should decrease.[128]

As a result of a growth rate of over 5% per year since 2000, the EU has already achieved the benchmark in 2003. There was growth of 7.1% in 2003 alone, bringing the total to about 755,000 graduates. If 2000 (academic year 1999/2000) is used as a base year (with 650,000 graduates), the target growth of 15% implies an absolute increase of some 100,000 graduates by 2010, or of about 11,000 graduates per year. However, in 2003 alone there was a real increase of nearly 50,000 MST graduates. (Even if 2001 was used as a basis (academic year 2000/2001) the benchmark has already been achieved).[129]

Chart 3.1: Total number of tertiary (ISCED 5A, 5B and 6) graduates from mathematics, science and technology fields



Data source: Eurostat (UOE)

Additional note: EU total does not include Greece. EU total 2000 includes national UK data.

The EU is well-positioned in comparison with other developed regions, producing nearly one fifth of the about 4 million MST graduates worldwide every year.[130] In 2003 the 755,000 MST graduates in the EU compared to 431,000 graduates in the USA, 230,000 in Japan and 225,000 in Russia. However, the number of MST graduates is rising quickly in countries like China, where it more than doubled since 2000 to reach 810,000 in 2003 (three quarters in engineering) and India (294,000 engineering graduates in 2003).[131] The availability of a large pool of MST graduates in these low wage countries has a growing impact on high technology

[127] Council Conclusions of 5/6 May 2003 on Reference Levels of European Average Performance in Education and Training (Benchmarks)

[128] Indicator: "*Total number of tertiary (ISCED 5A, 5B and 6) graduates from mathematics, science and technology fields*".

[129] In Eurostat statistics what is shown as 2000 refers to the academic year 1999/2000, 2001 refers to 2000/2001. Therefore one could relate the benchmark either to the Eurostat figure for 2000 or 2001.

[130] World figure represents Commission estimate based on UNESCO statistics and national data.

[131] Source for China: Statistical Yearbook of China 2004, Source for engineering graduates in India: Nasscom. There are no official data on science graduates in India, the Economic Times of India quoted in August 2005 a number of 600 000 science graduates in India in 2004, other sources, however, quote lower figures

industries worldwide and increasingly affects the comparative advantage (relative abundance of high skilled workers) of developed countries.

Whereas current trends in the overall number of MST graduates appear encouraging, there is a decline or, at best, a comparatively slow growth in certain fields such as the physical sciences, mathematics and statistics[132]. This coupled with unfavourable demographic trends highlights that action is needed to encourage young people to take up studies in these fields. Moreover, the number of full-time equivalent researchers per one thousand labour force in Europe is still too low (for 2003 these were 5.4 in the EU, versus 9.0 in the US and 10.1 in Japan)[133] – which seems to reveal the need for further efforts in fully using the potential created through the existing MST graduates.

Table 3.4: Total number of tertiary graduates from MST fields, 2000-2003 (x1000)

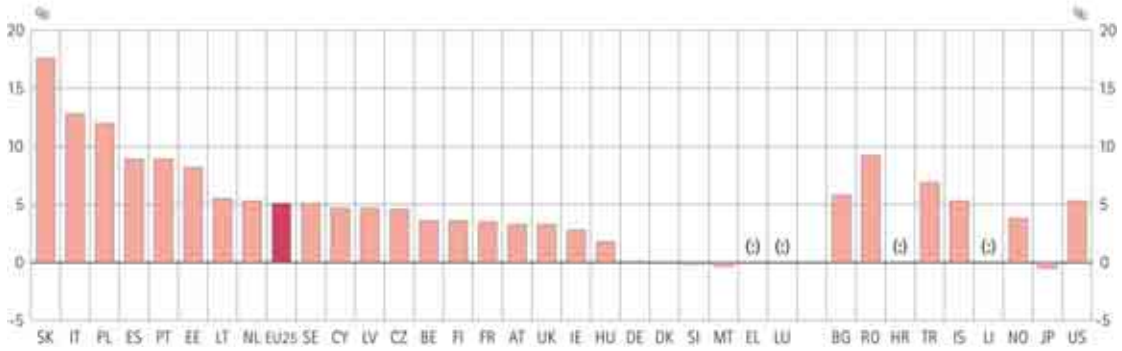
	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
2000	650.2		12.9	9.4	8.5	80.0	1.3	:	65.1	154.8	14.5	46.6	0.34	2.4	6.6	0.10	7.2	0.19
2001	680.7		13.2	9.6	8.7	76.6	1.4	:	74.3	158.6	14.0	48.4	0.37	2.5	7.0	:	5.8	0.16
2002	704.8		13.7	10.1	8.1	76.7	1.3	:	79.3	:	13.0	56.6	0.40	2.6	6.9	:	7.8	0.18
2003	754.9		14.4	10.7	8.4	80.3	1.7	:	84.1	171.4	15.7	66.8	0.39	2.8	7.7	:	7.6	0.18
Of which ISCED 6 (PhD)																		
2003	37.0		0.7	0.8	0.5	8.3	0.05	:	2.7	4.8	0.4	3.1	0.00	0.02	0.08	0	0.2	0

	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO	JP	US
2000	12.5	7.5	39.2	10.1	2.6	4.7	10.1	13.0	140.6	8.1	17.1	:	57.1	0.35	:	4.8	236.7	369.4
2001	12.7	7.4	44.8	10.4	2.4	6.7	10.9	13.7	150.9	9.1	18.4	:	61.5	0.39	:	5.2	233.4	379.7
2002	13.6	8.0	49.8	11.7	2.8	7.1	11.1	14.5	150.9	13.5	20.4	:	65.9	0.40	:	4.6	232.9	389.6
2003	14.6	8.3	55.2	13.0	2.6	7.7	11.2	15.1	155.2	9.6	32.5	3.4	69.6	0.41	0.03	5.4	229.7	430.7
Of which ISCED 6 (PhD)																		
2003	1.0	0.8	1.8	1.2	0.2	0.5	0.7	1.8	7.5	0.1	3.5	0.1	0.8	0.00	0	0.3	5.5	16.2

Data source: Eurostat (UOE)

Additional notes:
BE: Data for the Flemish Community exclude second qualifications in non-university tertiary education, data exclude independent private institutions (their number is, however, small)
LU: Luxembourg does not have a complete university system, most students study abroad.
EE: Data exclude Master degrees (ISCED 5A)
EL: no data available for 2000-2003, 2004: 13 100 graduates
CY: Data exclude tertiary students graduating abroad. The number of students studying abroad accounts for over half of the total number of Cypriot tertiary students. The fields of study in Cyprus are limited
PL: Data for 2000 exclude advanced research programmes (ISCED level 6)
RO: from 2000-2002 data exclude second qualifications and advanced research programmes (ISCED level 6), thus break in series in 2003
UK: National data used for 2000

Chart 3.2: Growth of tertiary graduates from mathematics, science and technology fields in %, Average annual growth rate 2000-2003



[132] "Europe needs more scientists", report by the High Level Group on Increasing Human Resources for Science and Technology in Europe. European Commission, 2004

[133] European Commission, Directorate General Research, "Key Figures 2005" p.48

EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
5.1		3.6	4.6	-0.1	0.1	8.2	:	8.9	3.5	2.8	12.8	4.7	4.7	5.5	:	1.8	-0.7

NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO	JP	US
5.3	3.3	12.0	8.9	-0.3	17.6	3.6	5.1	3.3	5.8	9.2	:	6.9	5.3	:	3.8	-1.0	5.3

Source: DG EAC, Calculations based on Eurostat data

Additional notes:
Average based on 2001 growth rate when 2002 data were not available (USA, DK, JP), PL: growth based on 2001-2003

Countries with strong growth (> 10% per year) in the period 2000-2003 include Italy, Poland and Slovakia. The strong growth in these countries reflect a catching up process.

Table 3.5: Growth in the number of MST graduates in 2003 (in %)

	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
2003	7.1		4.4	5.8	4.4	4.7	34.3	:	6.1	:	20.7	18.2	-3.0	6.3	11.6	:	-2.2	0.0

	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	HR	RO	TR	IS	LI	NO	JP	US
2003	7.3	3.6	10.7	11.2	-8.8	8.1	1.3	3.7	2.8	-29.0	:	:	5.7	2.8	:	18.3	-1.4	10.6

Source: DG EAC calculations based on Eurostat data; Additional notes: See Table 3.4

In 2003 Estonia, Ireland, Italy, Lithuania, Poland and Portugal showed the strongest growth in the numbers of MST graduates. Despite the general positive trend, Cyprus, Hungary and Slovenia showed a decrease in numbers in 2003. However, in these countries results fluctuated widely between years and the decrease in 2003 was not part of a long-term trend. Since the number of MST students has increased up to 2003 (and data available for Germany, France and the UK for 2004 seem to confirm the trend), the number of graduates will probably continue to increase in the coming years. However, long term demographic trends, especially the strong decline in birth rates in the new Member States after 1989, might also bring the risk of a stagnation or decline in the number of MST students and graduates after 2010, despite the increase in higher education participation rates.

Table 3.6: Growth in the number of graduates by field (EU-25)

ISCED fields	Graduates (in 1000)		Growth (in %)
	2000	2003	2000-2003
Life sciences (42)	85.6	94.3	10.2
Physical science (44)	81.0	78.8	-2.7
Mathematics and statistics (46)	33.8	36.0	6.7
Computing (48)	79.3	121.9	53.9
Engineering and engineering trades (52)	244.3	289.7	18.5
Manufacturing and processing (54)	26.3	32.5	23.9
Architecture and building (58)	84.8	98.6	16.2

Data source: Eurostat

The strong overall growth also masks strong differences between the fields. While the number of graduates increased in the period 2000-2003 by over 50% in computing and by over 18% in engineering, manufacturing and construction, it grew by only by 6.7 % in mathematics and statistics and even declined (-2.7%) in physical sciences.

Table 3.7: Growth in the number of MST graduates by programme types

ISCED fields	Graduates (in 1000)		Growth (in %)
	2000	2003	2000-2003
Tertiary programmes with academic orientation all first degrees (5A)	425.6	485.2	14.0
- of which programmes with academic orientation first degree 3 to 5 years	173.2	208.9	20.6
- of which programmes with academic orientation first degree 5 years and more	167.1	175.1	4.8
Tertiary programmes with academic orientation second degree (5A)	50.5	77.7	53.8
Tertiary programmes with occupation orientation, First qualification (5B)	124.0	152.8	23.2
Tertiary programmes with occupation orientation, Second qualification (5B)	2.1	2.1	0.0
Second stage of tertiary education leading to an advanced research qualification (PhD) (6)	32.9	37.0	12.4

Data source: Eurostat

Additional notes: No breakdown of first degree by duration of programme available for Portugal and UK, the sum of the two subsequent rows thus don't add up to the first row. For the UK the table is based on Eurostat data for 2000 (while table 3.4 is for the UK based on national data).

A breakdown of the graduates by programme types shows the impact of a general move to a BA/MA/PhD structure. Especially short first degree cycles (corresponding to bachelor) and second degree programmes (corresponding to master) show strong growth, while the number of graduates from 'old' long first degree programmes increased in the period 2000-2003 only slowly. Occupation oriented programmes showed in this period a slightly faster growth than academic programmes.

In 2003 37 000 or 4.9 % of MST graduates were ISCED level 6 (PhD) graduates, compared to 16 200 in the US (3.8% of MST graduates) and only 5 500 in Japan (2.4% of graduates). This represented an increase of over 12% compared to 2000. Germany produced the largest number of new PhD graduates (8300, and thus more than Japan) followed by the UK (7500) and France (4800). In the Acceding countries Romania is an important producer of PhD level graduates.
Despite the high number of new MST Doctorate holders (PhDs) the EU produces, it has fewer researchers in the labour market than the US, both in absolute terms and as a proportion of the total labour force (1.18 million researchers in the EU25 in 2003 or 5.4 per 1000 labour force, compared to 1.26 million in the USA, or 9.0 per 1000 labour force).[134] This is partly a result of the comparatively high amount of financing available for research activities and higher education in the US compared to the EU, as well as less attractive career prospects[135] (in 1999, about 116 thousand EU-born S&E employees worked in the US, out of a total 3.5 Million S&E employees).[136]

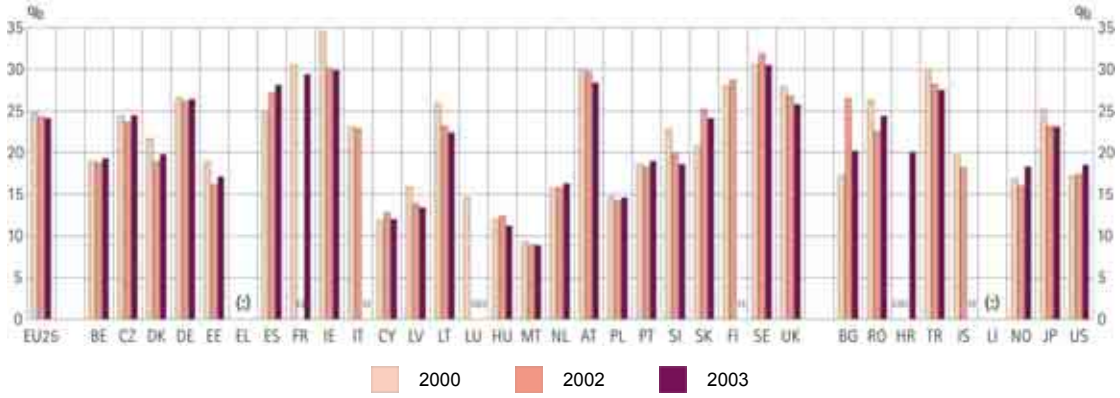
In 2003, about 24% of all graduates in tertiary education in the EU graduated in MST, compared to 19% in the USA and 23% in Japan (Chart 3.4). Especially France, Ireland and Sweden have high levels of graduates in MST, compared to the total number of graduates.

[134] European Commission Directorate General Research, "Key Figures 2005", p.50; Both concepts are measuring in full time equivalents

[135] European Commission staff working document Implementation Report 2004 on "A Mobility Strategy for the European Research Area" and "Researchers in the ERA: one profession, multiple careers" SEC(2005) 474

[136] European Commission Directorate General Research, "Key Figures 2003-2004" , p.46

Chart 3.3: Graduates in MST as a percentage of all graduates in tertiary education



	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
All tertiary graduates (1000)																		
2003	3236		74.4	47.2	42.6	304.8	9.9	:	299.4	584.8	53.8	248.7	3.2	20.8	34.5	0.7	67.6	2.0
MST graduates as a % of all graduates																		
2000	24.8		18.9	24.4	21.7	26.6	18.9	:	25.0	30.5	34.5	23.1	11.9	15.9	26.0	14.6	12.0	9.3
2002	24.3		18.8	23.7	18.9	26.2	16.2	:	27.2	:	30.2	22.9	12.8	13.9	23.2	:	12.4	8.9
2003	24.1		19.3	24.5	19.8	26.4	17.1	:	28.1	29.4	29.9	23.2	12.0	13.4	22.4	:	11.2	8.9

	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO	JP	US
All tertiary graduates (1000)																		
2003	89.3	29.2	477.8	68.5	13.9	31.9	38.6	49.3	601.7	47.3	136.6	16.9	253.1	2.5	0.1	30.1	1040	2352
MST graduates as a % of all graduates																		
2000	15.7	30.1	14.7	18.6	22.8	20.8	28.0	30.6	27.9	17.3	26.3	:	30.0	19.7	:	16.8	25.2	17.2
2002	15.8	29.7	14.2	18.3	19.9	25.2	28.7	31.9	26.8	26.5	22.6	:	28.2	18.2	:	16.0	23.2	17.4
2003	16.3	28.4	14.6	19.0	18.6	24.1	29.1	30.5	25.8	20.2	24.4	20.1	27.5	16.3	:	18.3	23.1	18.5

Data source: Eurostat (UOE)

Additional notes: See Table 3.4

From 2000 to 2003 the EU average share of graduates in MST fell slightly (–0.7 percentage points), despite an increase in the number of MST students. This is a result of an even stronger increase in the number of graduates in other disciplines and a decrease in the number of students for which the field is unknown. (The increase in the number of MST graduates in 2003 was 7.1%, the same as for all graduates, however, the growth rate for all graduates was 7.6%, if only the graduates for whom the field is known are considered).[137] Among EU countries, the decrease was greater than two percentage points in Ireland, Latvia, Lithuania, Slovenia and the UK. Of the Acceding and Candidate Countries, only Romania experienced a significant decrease.

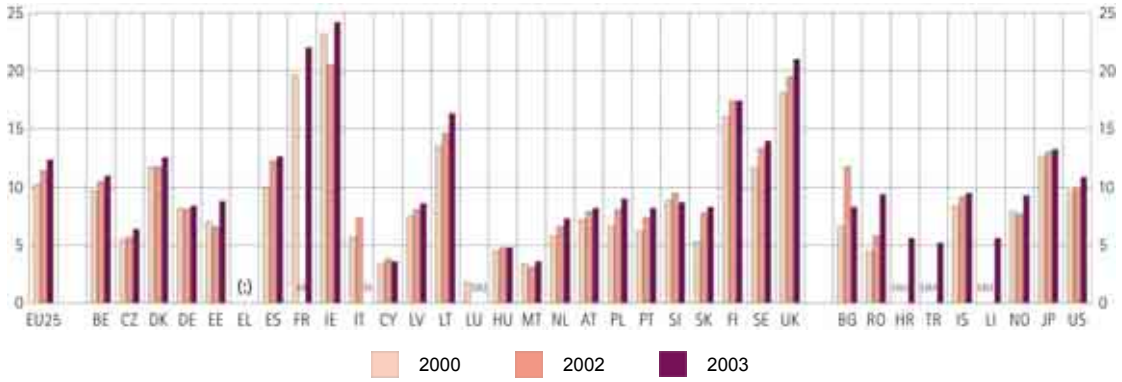
The average number of tertiary graduates in mathematics, science and technology per 1000 inhabitants aged 20-29 (ISCED levels 5A, 5B and 6) in the EU was 10.2 in 2000 and 12.2 in 2003. Related to a one year age cohort this implies that about 12% of young people take a tertiary degree in MST (the real figure is about 15% lower because of double counting of graduates at various levels). Relative growth was slightly stronger than growth in the number of graduates, because the size of the population aged 20-29 declined slightly (-1.2%) in this period. France, Ireland, Lithuania, Finland and the UK showed a relatively high proportion at over 15 per 1000, whereas the Czech Republic, Hungary and Malta recorded relatively low proportions of less than 7 per 1000 (Cyprus and Luxembourg have a limited university system only).

[137] Greece is not included in the 2003 figure for increase in total graduates, as data is missing. In 2003 for about 110 000 graduates the field of study is unknown (a decline compared to the years before).

In 2003, the proportion of young people graduating in MST (chart 3.4) increased in all EU countries, except in Slovenia and Cyprus, where it declined, and in Hungary where it stagnated.

Compared to 2000 the proportion increased in all countries except Slovenia.

Chart 3.4: Number of tertiary graduates in MST per 1000 inhabitants aged 20-29



	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
2000	10.2		9.7	5.5	11.7	8.2	7.0	:	9.9	19.6	23.2	5.7	3.4	7.5	13.5	1.8	4.5	3.4
2002	11.4		10.5	5.7	11.7	8.1	6.6	:	12.2	:	20.5	7.4	3.8	8.1	14.6	:	4.8	3.1
2003	12.3		11.0	6.4	12.5	8.4	8.8	:	12.6	22.0	24.2	:	3.6	8.6	16.3	:	4.8	3.6

	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO	JP	US
2000	5.8	7.2	6.6	6.2	8.9	5.3	16.0	11.6	18.1	6.6	4.5	:	:	8.4	:	7.9	12.6	9.7
2002	6.6	7.9	8.1	7.4	9.5	7.8	17.4	13.3	19.5	11.7	5.8	:	:	9.2	:	7.7	13.0	10.0
2003	7.3	8.2	9.0	8.2	8.7	8.3	17.4	13.9	21.0	8.3	9.4	5.6	5.2	9.5	5.6	9.3	13.2	10.9

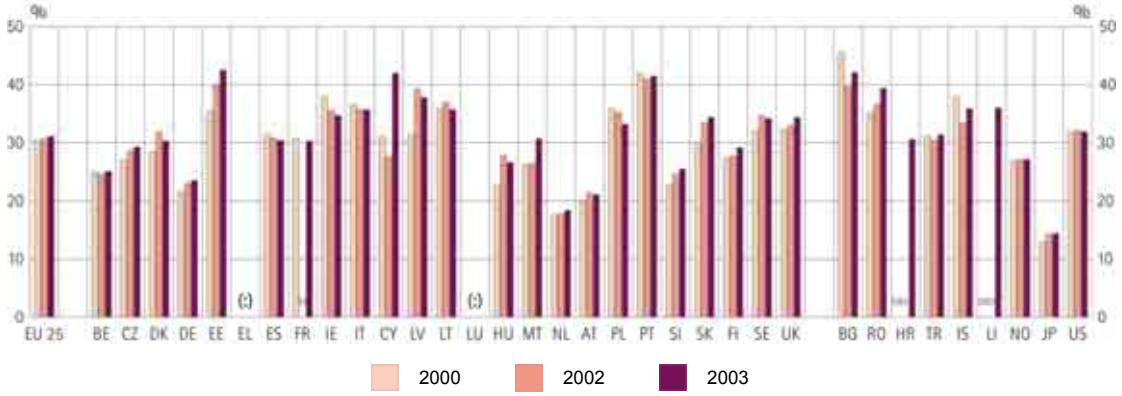
Data source: Eurostat (UOE)

Additional notes: see table 3.4
RO: 2003 data includes ISCED 6 and 2nd degrees, which are missing in previous years. UK: National data.

3.2.4 Gender imbalance among tertiary graduates in MST

To measure the gender imbalance among tertiary MST graduates the share of female MST graduates as a proportion of all MST graduates was calculated (Chart 3.6). Estonia, Cyprus and Portugal, have the highest share of female graduates (> 40%) while the increase since 2000 was greatest in Latvia, Estonia and Cyprus. 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.

Chart 3.5: Gender imbalance among MST graduates: female graduates as a proportion of all MST graduates



	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
2000	30.4		25.0	27.0	28.5	21.6	35.4	:	31.5	30.8	37.9	36.6	31.0	31.4	35.9	:	22.6	26.3
2002	30.7		24.6	28.6	31.8	23.0	39.9	:	30.8	:	35.5	35.7	27.6	39.2	36.9	:	27.8	26.4
2003	31.1		25.1	29.3	30.3	23.5	42.5	:	30.4	30.3	34.7	35.7	42.0	37.8	35.7	:	26.6	30.7

	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO	JP	US
2000	17.6	19.9	35.9	41.9	22.8	30.1	27.3	32.1	32.3	45.6	35.1	:	31.1	37.9	:	26.8	12.9	31.8
2002	17.8	21.4	35.2	41.0	24.6	33.5	27.7	34.6	33.0	39.7	36.6	:	30.4	33.3	:	27.1	14.2	32.1
2003	18.4	21.1	33.2	41.5	25.5	34.4	29.2	34.2	34.4	42.1	39.4	30.6	31.4	35.9	36.0	27.1	14.4	31.9

Data source: Eurostat (UOE), Additional notes: See table 3.4

It is also notable that gender imbalance is especially predominant in engineering (17% female graduates) and computing (24%), to a lesser extent in architecture and building (33%), while in mathematics and statistics gender balance has almost been achieved (49%). In the field of life sciences women on the other hand clearly predominate (63%).

Table 3.8: % female Graduates by field (EU-25)

ISCED fields	% female graduates		Countries with the highest shares of female graduates (2003)
	2000	2003	
Life sciences (42)	60.7	62.7	Poland 81.6, Lithuania 77.8, Latvia 76.5,
Physical science (44)	38.6	41.6	Cyprus 66.7, Latvia 62.1, Malta 62.0
Mathematics and statistics (46)	49.1	48.7	Latvia 73.6, Poland 72.5, Estonia 70.1
Computing (48)	23.4	23.5	Finland 41.9, Sweden 40.2, Cyprus 38.5
Engineering and engineering trades (52)	14.9	16.7	Slovakia 26.0, Finland 26.0, Portugal 25.0,
Manufacturing and processing (54)	43.1	45.9	Estonia 86.8, Denmark 81.7, Czech Rep. 66.6
Architecture and building (58)	32.1	32.9	Italy 48.5, Cyprus 46.3, Slovenia 43.2

Data source: Eurostat

While males predominate in MST fields, it should be noted that there is an imbalance in favour of women in the student population as a whole (in 2003 women represented 54% of tertiary students in the EU – they thus outnumbered men by 1.3 million). This imbalance is even more pronounced among graduates – 55% of graduates in 2000 in the EU25 were female, and 58% in 2003.[138] The high share of women in other fields shows that there is a clear potential of increasing the female share also in MST.

[138] Data for Greece and Poland missing in 2000

3.3 Conclusion

The trends over the period 2000-03 show that the EU is on track to achieving the benchmark set by the Council for 2010 of increasing the number of graduates in mathematics, science and technology by 15%. The available data show that the EU had already achieved the 15% increase (or, in absolute terms about 100,000 graduates) in 2003.

However, this sustained increase in MST graduates has not been reflected in enough employment of researchers in many Member States, as a non-negligible part opts for a non-science and engineering career or for jobs in other countries[139]. Furthermore, demographic developments could signify much slower growth in the number of graduates in the long term. For this reason, among others, it is also important to create conditions conducive to a thriving research environment in Europe and to avoid a loss of European MST graduates to other economic sectors and world regions.

Another challenge lies in redressing the gender imbalance among graduates in these fields. Several countries show a serious disparity between the numbers of female and male graduates. The data shows, however, that the gender balance is actually improving on an EU level, but only slowly, and not all countries are making progress. In these cases it will be necessary to identify innovative methods to motivate women to pursue studies in mathematics, science and technology. Attracting more women to this field will also contribute to the objective of increasing the overall number of graduates in these fields.

[139] European Commission Directorate General Research, "Key Figures 2005", p.12

IV INVESTMENT IN EDUCATION AND TRAINING

Main messages

- Total public expenditure on education as a percentage of GDP increased in 2002 in the majority of Member States. On an EU level it increased from 5.10% of GDP in 2001 to 5.22% in 2002. However, growth in education spending seems to have slowed down after 2002.
- In particular the new Member States made efforts to increase total public expenditure on education and training in 2002, with the Czech Republic, Cyprus, Hungary and Slovakia showing an increase of more than 0.25 percentage points of GDP. Of the old Member States, Germany, Sweden and the UK recorded the largest increase in spending.
- Expenditure on private tertiary institutions (including both education and research) as a % of GDP is seven times higher in the USA than in the EU, and three times higher in Japan. Total expenditure per tertiary student is more than twice as high in the US as in the EU.

4.1 Introduction

Investment in human capital through the medium of education and training is the key to strengthening Europe's position in the knowledge economy and to increasing social cohesion in the 21st century. The European Council of March 2000 in Lisbon acknowledged this by calling for "a substantial annual increase in per capita investment in human resources."[140]

In March 2003 (Brussels), the European Council asserted that, "investing in human capital is a prerequisite for the promotion of European competitiveness, for achieving high rates in growth and employment and moving to a knowledge-based economy." The Council also approved of the use of "benchmarks to identify best practice and to ensure efficient and effective investment in human resources."[141] The Joint Interim Report (January 2004) identified the concentration of reforms and investment in certain key areas as one of the three levers for success.[142] More and better investment in human capital is also a key priority in the Employment Guidelines 2005-2008.[143]

Research points to a very positive relationship between investment in education and actual economic growth.[144] However, such investment is a long-term venture with returns which are difficult to calculate. In most countries, such long-term "general interest" investment is largely the responsibility of the public sector. Since public budgets are tight and private returns are high in certain areas of education, there is now increasing emphasis in political discourse on the pressing need for increased private investment in education, both from the individual and from enterprise.

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[140] Presidency Conclusions European Council, Lisbon, 2000, paragraph 26.

[141] Presidency Conclusions European Council, Brussels, 2003, paragraph 40.

[142] Joint Interim Report of the Council and the Commission (2004) "*Education and Training 2010,"* p.22. The reports of the Commission Working Groups on Education and Training 2010 provided input for this report. See "Making Best use of resources," Working Group Progress Report, Nov 2003.

[143] See also Integrated Guidelines for Jobs and Growth (2005-2008) COM 2005 141 final of 12.4. 2005

[144] See for instance: *The EU Economic Review* 2003, pp. 159-176 and De la Fuenta and Ciccone (2002) *Human Capital in a global and knowledge-based economy*.

4.2 Indicators for monitoring performance and progress

The five indicators on public and private expenditure used in this chapter cover what the Lisbon Presidency Conclusions explicitly mentioned, namely "levels of investment in human resources". However, indicators to cover the aspect of *efficiency* of investment are still under development (for example, costs per graduate) and will be included in future updates of this report.[145] Investment efficiency is also mentioned in the Council Conclusions of 24 May 2005 as one of the areas for the development of new indicators.

Quality and availability of data and indicators
When analysing and comparing data for different countries, a number of factors which affect comparability have to be taken into consideration. These include demographics (the proportion of young people differs between countries), differences in teacher salaries compared to GDP per capita (around 70% of total education expenditure is made up of salaries), incomplete coverage of private investment and the difference between Gross Domestic Product (all income before adjustment for net factor income flows in and out of a country) and Gross National Product (all income after adjustment for net factor income flows), especially in smaller open economies. Furthermore it should be noted that expenditure reported for the tertiary education level are for all activities performed, including both education and research.

Improving the collection and quality of data on private expenditure on education and training is a priority in the follow-up of the Lisbon process and the Commission Communication on "Investing efficiently in education and training". It is important to note that educational spending is usually treated as "current expenditure" in financial statistics on national accounts.[146] Since education and training yield returns in the future, spending in this sector could be considered a form of investment, with the corollary that people and their skills are a form of human capital and an asset. In the following analysis, all spending on education and training, from public or private sources, is thus considered investment in human capital.

4.3 Performance and progress on best use of resources

4.3.1 Public expenditure on education and training

Investment in education and training can benefit society in terms of lower unemployment rates, higher labour force participation rates (thus allowing for savings in social welfare expenditure, which currently represents about 40% of total public expenditure in EU25)[147] and higher productivity. Investment in education is thus also a major spending item in public budgets. In 2002, 11.0% of public budgets in the EU were devoted to education, compared to 10.8% in 2000.[148]

There were considerable variations between countries in their levels of total *public expenditure on education and training as a percentage of GDP* in 2002 (Chart 4.1, the data do not include spending on non-formal education). Denmark has the highest relative spending at more than 8% of GDP, followed by Sweden at over 7%. While most countries fall within the

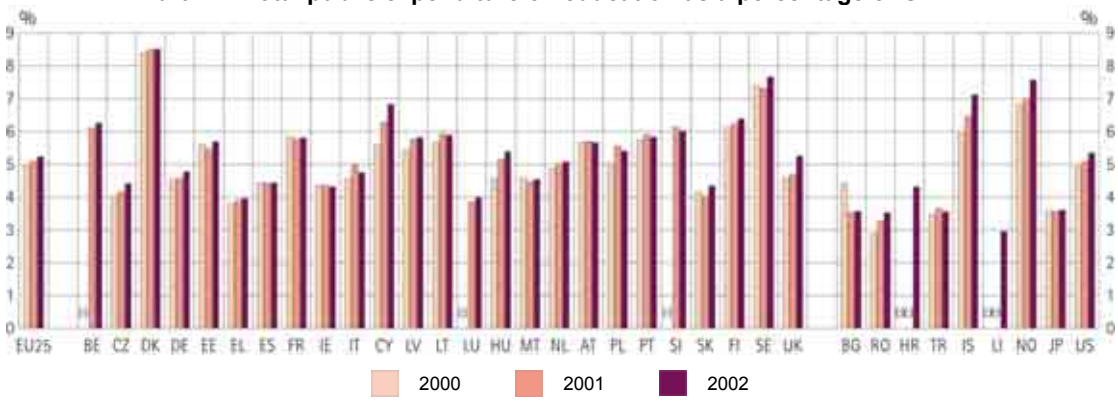
[145] European Commission Staff Working Paper, "New Indicators on Education and Training," 2004.
[146] Goods and services that have a lifetime of less than one year are statistically normally considered as current expenditure, and those with a lifetime of more than one year as investment. Using this definition over 90% of education spending can be classified as current expenditure and less than 10% capital expenditure.
[147] European Commission, "Public Finances in the EMU," 2004, p. 173.
[148] In 2001 total public expenditure in the EU25 amounted to 48.1% of GDP. Generally, the public sector finances the education system, either directly, by bearing the current and capital costs of educational institutions (direct expenditure for educational institutions), or through financial support for students and their families with scholarships and public loans as well as by transferring public subsidies for educational activities to private firms or non-profit organisations (transfers to private households and firms). Both types of transaction combined are recorded under total public expenditure on education.

4-6% bracket, in Greece public spending on education amounts to slightly less than 4% of GDP.[149] Adequate spending levels are especially important for low income countries, since investment in human resources is a key prerequisite for economic growth and there is a danger of a vicious circle of low investment in human capital and low economic growth.

In 2002 total public expenditure on education as a percentage of GDP increased in 19 EU countries over 2001, while decreasing in only six. In particular the new Member States made an effort to increase public spending on education and training, with the Czech Republic, Cyprus, Hungary and Slovakia showing an increase in this expenditure of more than 0.25% percentage points of GDP. Of the old Member States the UK showed the strongest increase in spending. A large part of the growth in spending on an EU level in 2002 is in fact due to the strong growth in the UK.

Spending in the EU25 increased from 5.10% of GDP in 2001 to 5.22% in 2002. It thus amounted to about 500 billion Euro in 2002, a real increase of about 8% compared to 2000 (if based on constant 1995 prices). Spending in the Acceding Countries, at less than 4% of GDP in 2002, was below the EU average, but it increased both in Bulgaria and Romania.

Chart 4.1: Total public expenditure on education as a percentage of GDP



	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
2000	4.94		:	4.04	8.39	4.53	5.59	3.79	4.42	5.83	4.36	4.57	5.60	5.43	5.67	:	4.54	4.55
2001	5.10		6.11	4.16	8.50	4.57	5.48	3.90	4.41	5.76	4.35	4.98	6.28	5.70	5.92	3.84	5.15	4.47
2002	5.22		6.26	4.41	8.51	4.78	5.69	3.96	4.44	5.81	4.32	4.75	6.83	5.82	5.89	3.99	5.51	4.54

	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO	JP	US
2000	4.87	5.66	5.01	5.74	:	4.15	6.12	7.39	4.58	4.41	2.89	:	3.49	6.00	:	6.82	3.59	4.93
2001	4.99	5.70	5.56	5.91	6.13	4.03	6.24	7.31	4.69	3.53	3.28	:	3.65	6.47	:	7.00	3.57	5.08
2002	5.08	5.67	5.60	5.83	6.02	4.35	6.39	7.66	5.25	3.57	3.53	4.32	3.56	7.12	2.95	7.63	3.60	5.35

Data source : Eurostat (UOE data collection)

Additional notes
The data do not include spending on non-formal education and adult education
DK: Expenditure at post secondary non-tertiary levels of education is not available
EL, LU, PT: Imputed retirement expenditure is not available
CY: Including financial aids to students studying abroad
PL, SK, NO Including child care expenditure at pre-primary level of education
FR: Without French Overseas Departments. HR: Expenditure on educational institutions from public sources
LU: expenditure at tertiary level of education not included.
PT: expenditure at local level of government not included.
UK, JP, US: adjustment of GDP to the financial year, which differs from the calendar year.
TR, IS: expenditure at pre-primary level not included, TR: expenditure at regional and local levels of government not included.
US: Expenditure on educational institutions from public sources

In the light of the trend of an overall increase in spending of 0.28 percentage points of GDP in the EU since 2000, corresponding to a real growth of about 8% in total public expenditure

[149] The data for Luxembourg relate only to primary and secondary education. For the two levels combined spending in Luxembourg as a % of GDP is above the EU average. As a result of a high per capita GDP, spending per pupil is furthermore relatively high in Luxembourg.

on education, it may be concluded that in 2002 the EU made progress towards the Lisbon objective of ensuring "a substantial annual increase in per capita investment in human resources." In the recent past, however, the US made an even greater effort to increase spending (amongst others a result of the 'No Child Left Behind' act of 2001), while spending stagnated at the same time in Japan.

Table 4.1: Public expenditure on education as a percentage of GDP by education level (2002)

ISCED	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
0, na	0.52		0.72	0.55	0.95	0.50	0.44	0.19	0.44	0.72	0.07	0.41	0.36	0.67	0.79	:	0.93	0.31
1	1.18		1.40	0.71	1.92	0.68	1.59	1.09	1.15	1.17	1.40	1.23	1.87	1.09	1.02	2.12	0.98	1.14
2-4	2.40		2.79	2.28	2.92	2.42	2.54	1.39	1.84	2.89	1.65	2.24	3.16	3.17	2.67	1.87	2.34	2.17
5-6	1.14		1.36	0.88	2.72	1.18	1.12	1.28	1.01	1.03	1.19	0.88	1.44	0.89	1.41	:	1.26	0.94
Of which direct public expenditure on ISCED 5-6 (tertiary level, for all activities incl. both education and research)																		
5-6	0.95		1.16	0.82	1.87	0.98	0.92	1.21	0.93	0.94	1.05	0.74	0.68	0.72	1.25	:	0.97	0.70

	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO	JP	US
0, na	0.37	0.63	0.45	0.56	0.60	0.56	0.34	0.52	0.45	0.63	0.80	0.51	:	0.30	1.12	1.06	0.35	0.38
1	1.44	1.12	1.89	1.81	2.62	0.60	1.38	2.15	1.24	0.72	1.27	2.11	1.62	2.77	0.69	1.94	1.28	1.82
2-4	2.00	2.63	2.18	2.46	1.48	2.31	2.59	2.83	2.48	1.68	0.76	1.02	0.73	2.72	0.79	2.53	1.43	1.97
5-6	1.28	1.28	1.09	1.00	1.33	0.88	2.08	2.17	1.08	0.54	0.70	0.68	1.20	1.32	0.35	2.10	0.54	1.40
Of which direct public expenditure on ISCED 5-6 (tertiary level, for all activities incl. both education and research)																		
5-6	0.99	1.02	1.05	0.93	0.99	0.72	1.69	1.53	0.79	0.48	0.64	0.68	1.05	1.04	0.20	1.41	0.45	1.17

Data source: Eurostat (UOE data collection), Spending on the tertiary level includes R&D spending at universities

Additional notes: see Chart 4.1, Additional notes: ISCED 0, na = pre-primary education and not allocated by level
ISCED 1: primary education, ISCED 2-4 Secondary and post-secondary non-tertiary education, ISCED 5-6: tertiary education, ISCED 0: pre-primary education. Direct public expenditure does not include transfers to private entities. If public and private spending is added up, it is preferable to use direct public expenditure (instead of total expenditure) to avoid double counting. Data for Poland are grouped ISCED 1-2 and ISCED 3-4.

Table 4.1 shows public expenditure by education level. Nearly half of public spending on education goes to secondary education. Spending on primary education is more affected by demographic factors than spending on the other levels, since the participation rate is nearly 100%. Countries with a relatively high birth rate thus tend to spend relatively high proportions on primary education. However, time lags have to be considered. If the number of births changes, the student age group cohort size changes only some years later (the higher the level, the later) and the education system furthermore reacts typically with additional time lags to changing cohort size, since infrastructure and staff size cannot be adapted quickly.

Compared to compulsory education spending on tertiary education is more strongly affected by participation rates. In Denmark, Sweden and Finland public spending on tertiary education reaches more than 2% of GDP, about twice the EU average level. Spending on tertiary education is below 1% in the Czech Republic, Italy, Latvia, Malta and Slovakia (and probably also in Luxembourg). Japan is one of the OECD countries with the lowest public spending on tertiary education while public spending in the US is slightly above EU average.

4.3.2 Private expenditure on education and training

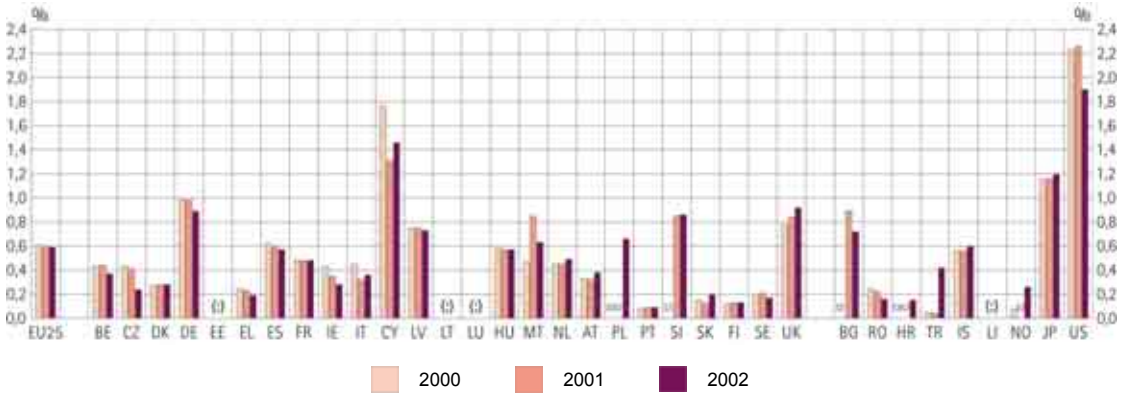
According to data from Eurostat (UOE data collection) private expenditure on educational institutions, as a percentage of GDP (Chart 4.2), remained stable at about 0.6% in 2002 (this percentage corresponds to nearly 60 billion Euro at current prices). This proportion of GDP compares unfavourably with the corresponding figures of about 1.2% in Japan and 1.9% in the US. While the GDP share of private spending for pre-primary, primary and secondary educational institutions is broadly similar in the US and the EU, private spending on tertiary educational institutions in the US, as a percentage of GDP, is seven times the European level.

In order to match the level of total spending on tertiary education (for all activities, including both education and research) of the US (public and private) Europe would have to invest an additional 140 billion Euro per year, or about 9 000 Euro per tertiary student each year.

In Japan private spending on compulsory education is slightly higher than in Europe, but private spending on tertiary education (including both education and research) is nearly three times the EU level.[150] Only in Cyprus did private spending on educational institutions amount to more than 1% of GDP. In the new Member States the figure was on average similar to that of the old EU15.

It must be taken into consideration that private investment is likely to be underestimated in many countries because of incomplete reporting of data. Not all countries can provide data on private schools, private household expenditure on educational materials and services, enterprise expenditure on initial training of the dual-system type, etc.
Another source for data on private spending (though not always comparable with the data shown in Chart 4.2) are household budget surveys. Data from the Eurostat harmonised Household Budget Survey for 1999 confirm the high private education spending level in Cyprus (nearly 1000 Euro PPS per household, corresponding to about 2% of GDP), but the data show also a high spending level for Greece (over 500 Euro per household, corresponding to about 1.5% of GDP).

Chart 4.2: Expenditure on educational institutions from private sources in % of GDP



	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
2000	0.61		0.43	0.43	0.27	0.99	:	0.25	0.62	0.48	0.43	0.45	1.77	0.75	:	:	0.59	0.47
2001	0.59		0.44	0.41	0.28	0.98	:	0.23	0.59	0.48	0.35	0.32	1.31	0.75	:	:	0.57	0.85
2002	0.59		0.37	0.24	0.28	0.89	:	0.19	0.57	0.48	0.28	0.36	1.46	0.73	:	:	0.57	0.63
Of which private spending on tertiary education institutions (for all activities incl. both education and research)																		
2002	0.20		0.19	0.12	0.04	0.09	0.00	0.01	0.29	0.16	0.17	0.20	0.95	0.57	0.00	0.00	0.26	0.05

	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO	JP	US
2000	0.45	0.33	:	0.08	:	0.15	0.12	0.20	0.78	:	0.25	:	0.05	0.56	:	0.08	1.16	2.23
2001	0.45	0.32	:	0.09	0.85	0.12	0.13	0.21	0.84	0.89	0.22	:	0.04	0.56	:	:	1.16	2.26
2002	0.49	0.38	0.66	0.09	0.86	0.20	0.13	0.17	0.92	0.72	0.16	0.15	0.42	0.6	:	0.26	1.20	1.90
Of which private spending on tertiary education institutions (for all activities incl. both education and research)																		
2002	0.28	0.09	0.46	0.09	0.30	0.13	0.07	0.17	0.31	0.58	0.00	0.15	0.12	0.05	0.00	0.05	0.64	1.42

Data source: Eurostat (UOE data collection); Spending on tertiary institutions includes R&D spending at universities

Additional notes
DK, EL, LU, LV, MT, PL, PT, SK, IS, NO, BG, RO, TR: Payments from other private entities (firms, non-profit organisations etc.) are not available. For PT in addition payments from households not available
FR: Without French Overseas Departments. LU: Expenditure at tertiary level of education is not available.
UK JP, US: Adjustment of GDP to financial year which differs from calendar year
IS, TR: Expenditure at pre-primary level not available.

[150] OECD, *Education at a Glance 2004*, p. 229.

The question of private investment in education and training is politically sensitive. Private investment can help increase the availability of resources and by changing the incentive and reward structure (for example by reducing overlong duration of studies or increasing learner motivation) can contribute to efficiency of spending. The high private returns on non-compulsory education could also justify private contributions, even from the perspective of social equity. Nevertheless, it is uncertain how much can be demanded of the individual in terms of a private financial contribution to education without creating a disincentive to attainment or compromising general social principles like equal access and equity.

4.3.3 Enterprise expenditure on continuing vocational training

An analysis of *enterprise expenditure on continuing vocational training (as a percentage of labour costs)*[151] shows great variations between countries (see table 1 in annex). In 1999, in the UK, Denmark, the Netherlands and Sweden, industry devoted nearly 3% of labour costs to continuing vocational training (CVT). In Greece, Lithuania and Poland, conversely, spending amounted to less than 1%. In the Acceding countries, spending was clearly below EU average.[152] The data suggest some correlation between the general level of economic productivity (measured in GDP per capita) and spending on CVT. In the EU25, average enterprise expenditure on continuing vocational training amounted in 1999 to about 2.3 % of labour costs (this represents slightly more than 1% of GDP or about 100 billion Euro), with small enterprises (10-19 employees) spending on average a lower proportion of labour costs than large enterprises (more than 250 employees) (1.5% and 2.5 % respectively).

New data will become available only after 2006, when CVTS3, the third wave of the European Continuing Vocational Training Survey, will have been carried out.

4.3.4 Expenditure on educational institutions per pupil/student

The indicator *annual expenditure on public and private educational institutions per pupil/student in EUR PPS* attempts to address the European Council's call for a substantial annual increase in per capita investment in human resources (Chart 4.3).

Total expenditure per student at primary, secondary and tertiary level measures how much all levels of government, firms, non-profit organisations and private households spend on education in public and private institutions. It includes expenditure for personnel and other current and capital expenditure and covers expenditure for educational core services, ancillary services (e.g. meals, dormitories, sports etc) and R&D activities. It is expressed here in purchasing power standards (PPS) in order to filter out differences in price levels between countries. A euro-based PPS unit buys the same amount of goods and services in each country.

In general, expenditure increases with the education level. This has to do with *i.a.* pupil-teacher ratios, differences in salaries of teaching staff between education levels, the cost of equipment and spending on research on the tertiary level. In 2002, in the EU25, an average of 4,200 EUR PPS was spent per primary-level, and 5,600 per secondary-level pupil, while at the tertiary-level average spending per student in the EU was over 7,900 EUR PPS.[153] Countries with a relatively large disparity in spending between primary and tertiary level include Ireland, Netherlands, Sweden, Germany, the Czech Republic and Slovakia.

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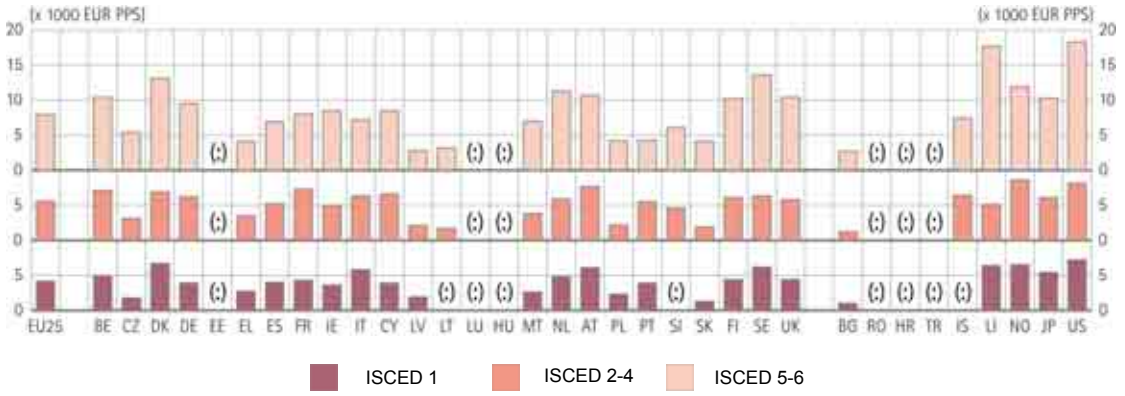
[151] Total expenditure on CVT courses is the sum of direct costs, staff time costs and the balance of contributions to national or regional training funds and receipts from national or other funding arrangements.

[152] See also Chapter IV: Making learning more attractive, in which the number of course hours per 1000 working hours is analysed.

[153] EUR PPS= Euro in Purchasing Power Standards (to take into account differences in price levels between countries)

Chart 4.3: Total expenditure on public and private educational institutions per pupil/student in EUR PPS, by level of education, 2002



	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
	4.17		4.9	1.8	6.7	3.9	:	2.7	4.0	4.3	3.6	5.8	3.9	1.9	:	:	:	2.6
	5.61		7.1	3.1	6.9	6.2	:	3.5	5.2	7.3	5.0	6.3	6.6	2.1	1.7	:	:	3.8
	7.95		10.4	5.4	13.1	9.5	:	4.1	6.9	8.0	8.5	7.2	8.5	2.8	3.2	:	:	7.0

	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO	JP	US
	4.8	6.1	2.3	3.9	:	1.3	4.4	6.2	4.4	1.0	:	:	:	:	6.4	6.5	5.4	7.2
	5.9	7.7	2.2	5.5	4.6	1.9	6.1	6.3	5.8	1.2	:	:	:	6.4	5.1	8.6	6.1	8.1
	11.3	10.7	4.2	4.3	6.1	4.1	10.2	13.6	10.4	2.7	:	:	:	7.4	17.7	11.9	10.3	18.3

Data source: Eurostat (UOE data collection); Spending on the tertiary sector includes R&D spending at universities

Additional notes
DK, IT: Expenditure at post secondary non-tertiary level of education is not available.
FR: Without French Oversea Departments. EL, PT: Imputed retirement expenditure is not available.
EL: Expenditure at pre-primary level of education is reported under primary level of education
LT, SI, IS: Public expenditure in public & private educational institutions, expenditure on primary level is reported under secondary level
LU: Expenditure at pre-primary level of education is included under primary level. Expenditure at tertiary level not available.
MT, LI: Full-time equivalent enrolment is estimated by assuming that it corresponds to full-time enrolment and half of the part-time enrolment. PT: Expenditure at local level of government, payments from households to government dependent, independent private institutions and payments from other private entities is not available, Full-time equivalent enrolment is estimated by assuming that it corresponds to full-time enrolment and half of the part-time enrolment, except for ISCED 5-6. Enrolment at pre-primary level of education is not available.
UK: Adjustment of expenditure using the GDP-deflator (2001/2000) to adjust the financial year,(1 April to 31 March) to calendar year.
IS: Expenditure at pre-primary level not available. Expenditure at post secondary non-tertiary level partly included under tertiary level.
LI: Without expenditure of private institutions at primary and secondary levels of education
NO: Expenditure of lower secondary level of education is included under expenditure at primary level of education
US: Adjustment of educational expenditure of financial year (July 2001-June 2002) to calendar year
JP, US: Expenditure at post secondary non-tertiary level of education is included under tertiary level of education.

Spending per tertiary student in Japan is slightly higher than in the EU; however, in the USA spending per tertiary student is at over 18,000 EUR PPS more than twice the EU level. The high level of funding per student of tertiary education institutions in the USA is one of the reasons US institutions perform so well in international university ranking lists. Seven EU countries (Belgium, Denmark, the Netherlands, Austria, Finland, Sweden and the UK) are spending more than 10,000 EUR PPS per student at tertiary level. Among the new Member States, only Cyprus, Malta and Slovenia spent more than 6,000 EUR PPS per student in 2002, while Lithuania and Latvia had the lowest spending of the current EU Member States at only around 3,000 EUR PPS per year.

4.3.5 Expenditure per pupil/student compared to GDP per capita

While the use of purchasing power standards filters out differences in price levels between countries, it does not take into account different levels of GDP per capita. Thus, relating expenditure per pupil/student to GDP per capita shows more clearly the real effort countries are making in providing resources for the education sector.

In terms of primary education, Denmark, Italy and Sweden show the highest spending levels, amounting to 25% or more of GDP per capita in 2002 (Table 4.2). Cyprus and Portugal stand out at secondary level, with expenditure on education of 30% or more of GDP per capita. While relative spending levels for secondary education are similar in the US and Japan, the differences between primary and secondary level are smaller in these countries. Total expenditure per tertiary student exceeded 50% of GDP per capita in Denmark and Sweden. In the USA it reached 58% of GDP per capita and was thus more than 20% percentage points higher than in Europe.

Table 4.2: Total expenditure on public and private educational institutions per pupil/student compared to GDP per capita, by level of education, 2002

	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
ISCED 1	19.3		19.8	12.5	25.7	17.1	:	16.4	19.9	17.4	12.5	25.2	22.0	23.1	:	:	:	16.6
ISCED 2-4	26.2		28.9	21.4	26.6	27.0	:	21.1	26.0	29.2	17.2	27.4	37.2	25.3	18.5	:	:	24.4
ISCED 5-6	37.1		42.0	37.6	50.5	41.4	:	24.9	34.7	32	29.4	31.4	48.0	33.9	35.0	:	:	45.1

	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO	JP	US
ISCED 1	18.6	23.4	24.0	24.3	:	11.7	18.7	25.5	18.1	16.4	:	:	:	:	10.5	20.6	22.9	22.6
ISCED 2-4	22.8	29.7	22.7	34.2	28.8	17.4	26.2	26.2	23.9	19.1	:	:	:	25.6	8.4	27.4	26.1	25.6
ISCED 5-6	43.9	41.4	43.4	26.7	38.2	37.7	43.2	56.1	42.7	44.9	:	:	:	29.3	29.2	37.7	43.9	57.8

Data source: Eurostat (UOE data collection); Spending on the tertiary institutions includes R&D spending at universities

Additional notes
DK, IT: Expenditure at post secondary non-tertiary level of education is not available.
FR: Without French Oversea Departments. EL, PT: Imputed retirement expenditure is not available.
EL: Expenditure at pre-primary level of education is reported under primary level of education
LT, SI, IS: Public expenditure in public & private educational institutions, expenditure on primary level is reported under secondary level
LU: Expenditure at pre-primary level of education is included under primary level. Expenditure at tertiary level not available.
MT, LI: Full-time equivalent enrolment is estimated by assuming that it corresponds to full-time enrolment and half of the part-time enrolment.
PT: Expenditure at local level of government, payments from households to government dependent, independent private institutions and payments from other private entities is not available, Full-time equivalent enrolment is estimated by assuming that it corresponds to full-time enrolment and half of the part-time enrolment, except for ISCED 5-6. Enrolment at pre-primary level of education is not available.UK: Adjustment of expenditure using GDP-deflator (2001/2000) to adjust financial year (1 April to 31 March) to calendar year.
IS: Expenditure at pre-primary level not available. Expenditure at post secondary non-tertiary level partly included under tertiary.
NO: Expenditure at lower-secondary level included under expenditure at primary level of education.

In 2002 there was a slight increase in relative spending per pupil compared to 2001, mainly at primary level. This is probably related to the decline in the number of pupils in primary education by half a million between 2001 and 2002 (the EU25 counted 28.5 million primary pupils in 2001 and 28.0 million in 2002). In the same period, the number of pupils in secondary education increased by 1.2 million and the number of tertiary students by 0.56 million – one of the reasons why spending per student at these levels (secondary and tertiary) of education declined slightly.

4.4 Conclusion

After a decline in the late 1990s, total public expenditure on education as a percentage of GDP has, in overall terms, recovered since 2000. In combination with a decline in the number of primary pupils, this has led to an improvement in investment per pupil in primary education. However, there has been less progress in investment per pupil or student at secondary and tertiary level (for all activities, including both education and research), since the numbers of students at these levels has been growing.

As regards private investment, levels of spending on education in almost all Member States are modest compared to the best performing countries in the world. According to available data private spending as a % of GDP has furthermore not increased in recent years. Therefore, there seems to be still room to encourage more private spending as a way of mobilising additional resources and support their efficient use.

The data presented above nevertheless suggests that in the period 2000-2002 in the light of a real increase of 8% of public spending on education (and a population growth of less than 1%) the EU made some progress towards a substantial annual increase in per capita (of the total population) investment in human resources.

V ENSURING ACCESS TO ICT FOR EVERYONE

Main messages

- Despite considerable progress since 2000, in 2003 there were are still countries within the EU with a high number of pupils to each computer.
- In most EU countries, more than 70% of the available school computers were connected to the Internet in 2003.
- As a result of growing ICT penetration in households pupils increasingly have access to computers and the Internet at home. Mobile phone penetration and usage among secondary pupils is furthermore widespread.
- While there is in general a positive correlation between the access to computers at school and performance in mathematics, the performance in mathematics and reading peaks at a certain level of ICT usage.

5.1 Introduction

The precept of the Lisbon European Council[154] that every citizen should be equipped with the skills needed to live and work in the new information society was based on the recognition that the socio-economic potential of information technologies is directly related to their accessibility. In later European Councils, (i.e. Stockholm[155], Barcelona[156] and Brussels[157]) this message was reiterated, with particular stress on the contribution of Information and Communication Technology (ICT) skills to labour-market employability. The educational use of ICT accordingly features prominently in the Commission's e-learning strategy, as set out in its e-learning action plan,[158] and in the eLearning Programme,[159] one of whose four action lines is fostering digital literacy.

Underlining the importance of ICT in education, the report on the "Concrete future objectives of education and training systems" stated that, "the developing use of ICT within society has meant a revolution in the way schools, training institutions and other learning centres could work, as indeed it has changed the way in which very many people in Europe work. According to Eurostat data in 2005 about half of the EU labour force is using a computer at work (see table 2 in annex). ICT is also of increasing importance in the open virtual

[154] Presidency Conclusions, Lisbon, 2000, paragraph 9.
[155] Presidency Conclusions, Stockholm, 2001, paragraph 10: "Improving basic skills, particularly IT and digital skills, is a top priority to make the Union the most competitive and dynamic knowledge-based economy in the world."
[156] Presidency Conclusions, Barcelona, 2002, paragraph 33: "Ensuring that all citizens, and in particular groups such as unemployed women, are well equipped with basic qualifications, especially those linked with ICTs".
[157] Presidency Conclusions, Brussels, 2003, paragraph 40, in which the European Council calls for the development of digital literacy and lifelong learning.
[158] European Commission: *The e-Learning Action Plan: designing tomorrow's education*, 2001.
[159] eLearning Programme, Decision No 2318/2003/EC of the European Parliament and of the Council

teaching."[160] And as a result, the "Detailed Work Programme on the follow-up of the objectives of education and training systems in Europe,"[161] adopted by the Council and the Commission, included "Ensuring Access to ICT for Everyone" as a specific objective under the broader strategic objective of improving the quality and effectiveness of education and training systems in the EU.

The Commission set up a Working Group on ICT to define the key issues in the area of ICT in education and training, to identify and exchange innovative teaching and learning practices and to make policy recommendations. In its 2003 progress report[162] the Working Group on ICT made a number of recommendations to Member States in this area, namely to embed ICT policies and strategies into long-term educational objectives, to ensure new support services for education, to empower and support educational actors in the process of change, and, finally, to develop research, establish new indicators and provide access to results.

However, the first issue of the Commission Staff Working Paper "Progress towards the common objectives in education and training: indicators and benchmarks" did not include any indicators to measure progress against the objectives for ICT outlined in the Detailed Work Programme. As a consequence, the Joint Interim Report[163] invited the Standing Group on Indicators and Benchmarks and all working groups to propose, by the end of 2004, a limited a limited list of new indicators and their modalities of development in certain fields, including ICT.

Indicators for monitoring performance and progress
Available international data is mainly limited to the input-based indicators mentioned below:

- *Ratio of computers to pupils*
- *Average percentage of computers in schools connected to the internet*

These indicators give an indication of how well developed the ICT infrastructure is within the school system. Theses data and most of the other indicators of this chapter come from the OECD PISA survey (especially the OECD report released in January 2006 'Are students Ready for a Technology-Rich World?'), which allows to relate ICT access and usage to student performance. There are furthermore data from the Eurostat ICT household survey (the ICT survey however, doesn't provide data on younger pupils and for the rest of the student population it has only data for the aggregated group 16-24 years old).

The existing data gives a relatively good picture of the state of the ICT infrastructure in EU countries. However, in addition to the infrastructure, good strategies for ICT implementation are necessary in order to achieve successful learning. Results from PISA 2003 also give an indication on the relation between the frequency of computer and Internet use and performance in mathematics and reading.

ICT is a rapidly-changing field, and so the existing data, collected in 2000 and 2003, may partially already be out-of-date. Many countries have made significant investments in ICT since then.

The Commission is currently devising a strategy to address some of these data gaps. In the medium term, the Commission will ensure that surveys which are currently being developed will provide better information on areas that are not covered today by existing data, such as

[160] Education Council report to the European Council on the "Concrete future objectives of education and training systems," 2001.
[161] European Commission: Detailed Work Programme, 2002.
[162] Working Group Progress Report, "ICT in Education and Training," November 2003.
[163] Joint Interim Report of the Council and the Commission, "Education and training 2010," 2004.

learning outcomes from ICT and the integration of ICT in teaching and learning programmes. In the long term, the Commission will consider the development of indicators to identify the impact of ICT in education and training in terms of the integration of ICT in teaching and learning programmes and the learning outcomes of ICT usage.[164]

5.2 Performance and progress in ensuring access to ICT for everyone

5.2.1 ICT access in general

Information and Communication technologies are increasingly penetrating households and enterprises, hence the growing importance of ICT skills. Since the mid nineties internet and mobile phone use has grown dramatically in the EU, while there was also a steady growth in the number of PCs used. According to the Eurostat ICT household survey in 2005 58% of households in the EU had, via one of its members, access to a PC, while 49% of households had access to the Internet at home. The Eurostat ICT enterprise survey showed that at the same time 49% of employees in the EU were using a computer.
According to the ITU there were 411 million mobile phone subscribers in the EU in 2004 (89 subscribers per 100 inhabitants), while the Eurostat ICT household survey showed that in 2005 83% of EU households had a mobile phone.

Mobile phones are especially widespread among young people. A survey in Germany[165] showed that in 2005 6% of children aged 6-9 and 48% of those 10-13 had a mobile phone. 19% of those aged 6-9 and having a mobile phone and 46% of those aged 10-13 in 2005 sent more than 10 SMS per week. A similar survey carried out by the same organisation in 2003 showed that 66% of German youth aged 13-15 and 89% of those aged 16-19 had a mobile phone. According to the survey on the use of the Internet by children "Trends in Internet-browsing among students" (13 October 2005), conducted by the NSO in Malta, 66% of children aged 7-16 years in Malta have a mobile phone. The ratio varies from 41.7% of 7 to 11 year olds, 72.9% of 10 to 13 year olds, to 90.7% of 12 to 16 year old students.

The high mobile phone penetration of young people has growing implications for school level education and some schools now also use SMS to interact with pupils.

Table 5.1: Pupils (15 years old) access and use of computers at home, 2003

	EU		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
Access	85		94	82	97	96	:	67	:	:	87	87	:	55	:	:	75	:
For school work	74		87	77	93	91	:	53	79	79	80	78	:	44	:	90	68	:
Educational software	41		52	53	34	53	:	16	41	44	48	30	:	29	:	47	28	:
Frequent use	72		84	70	84	82	:	57	:	:	61	76	:	49	:	:	67	:

	NL	AT	PL	PT	SI	SK	FI	SE	UK	IS	LI	NO	BG	RO	HR	TR	JP	US
Access	:	97	64	84	:	:	91	98	:	98	98	:	:	:	:	37	79	90
For school work	96	93	60	75	:	57	88	95	:	97	94	94	:	:	:	23	46	87
Educational software	63	42	48	37	:	25	37	51	:	57	45	58	:	:	:	13	11	60
Frequent use	:	81	59	78	:	65	78	89	:	89	89	:	:	:	:	48	37	83

Data source: OECD (PISA), Table 2.2a and 3.1 of 'Are Students Ready for a Technology-Rich World?'

Additional notes:
For schoolwork: percentage of students having access to a computer at home that they can use for schoolwork
Educational software: percentage of students having educational software at home. "Frequent use"= almost every day or a few times per week.
The EU figure represents the weighted average of EU countries for which data is available.

[164] European Commission Staff Working Paper, "New Indicators on Education and Training," 2004.
[165] Egmont Ehapa Verlag: Kids Verbraucheranalyse 2005.

Data from the OECD PISA survey show that in 2003 in the 14 EU countries for which data was available 85% (ranging from 55% in Latvia to 98% in Sweden) of pupils had access to a computer at home, while around 74% could use it for schoolwork (44% in Latvia, 96% in the Netherlands) and also nearly 72% of those having access to a computer used it frequently. Around 40% of 15-year old pupils had educational software at home. Access and use in the EU countries, for which data is available is thus higher than in Japan but on a slightly lower level compared to the US.

5.2.2 ICT access in education

Table 5.2: Percentage of pupils having access at school and frequent use in 2003

	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
At school	92		91	95	100	93	:	93	:	:	89	86	:	90	:	:	98	:
Frequent use	40		27	41	68	23	:	45	:	:	24	51	:	35	:	:	80	:

	NL	AT	PL	PT	SI	SK	FI	SE	UK	IS	LI	NO	BG	RO	HR	TR	JP	US
At school	:	97	91	98	:	:	97	97	:	98	100	:	:	:	:	54	89	97
Frequent use	:	53	44	34	:	:	36	48	:	41	56	:	:	:	:	46	26	43

Data source: OECD (PISA), Table 2.2a of 'Are Students Ready for a Technology-Rich World?'

Additional notes: The EU figure represents the weighted average of EU countries for which data is available.

The OECD PISA survey shows that in the EU countries for which data is available over 90% of 15-year old students have access to a computer at school, however less than half of them use a computer at school frequently. The level of access ranged from 86% in Italy to 100% in Denmark, frequent use from 23% in Germany to 80% in Hungary.

As regards the students older than 15 data from the Eurostat ICT household survey show that in 2005 in EU 25 70% of students (16 years and older) used a computer at the place of education, while over 60% used the Internet at the place of education (see table A15 in annex, the data unfortunately do not allow a breakdown between secondary and tertiary education). Finland showed the highest share of students using computers at the place of education, followed by Lithuania. As regards the use of Internet at the place of education the UK showed the highest percentage. 7% of students used computers only at the place of education, while 10% used the Internet only at the place of education.

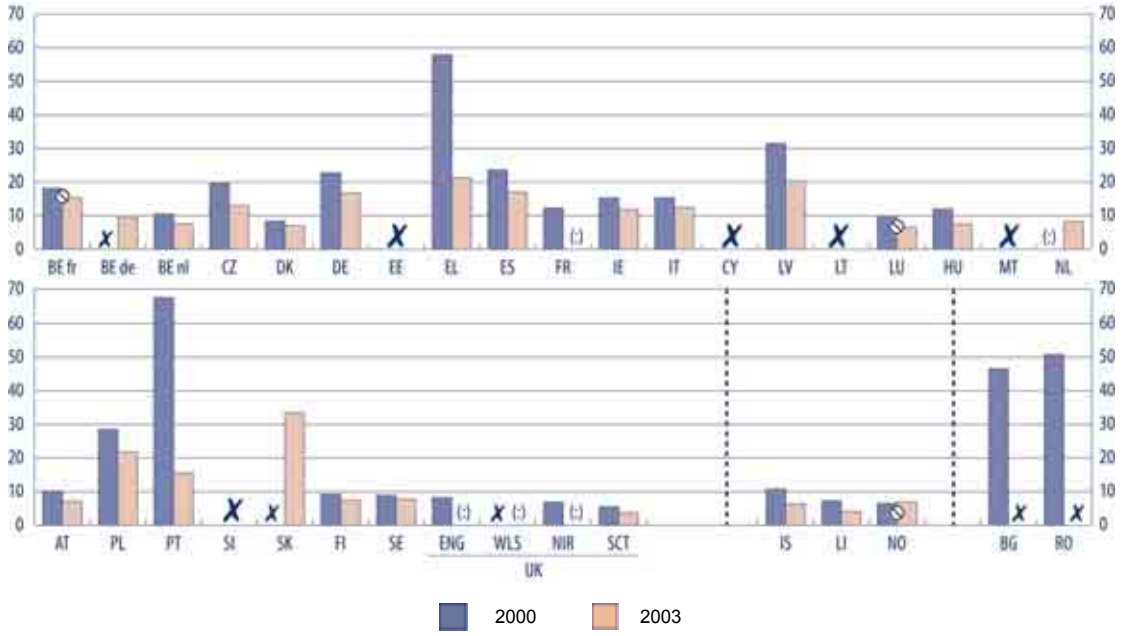
Data from PISA 2003[166] show that very few students (15-year olds) have never used a computer. In the majority of EU countries for which data was available the share was below 1% ranging from 0% in Finland to 3.8% in Slovakia.

5.2.3 The ICT infrastructure in schools

This indicator shows the penetration of ICT resources within schools. In 2003, despite noticeable progress in a number of countries and the fact that all schools had computers, there were still many countries within the EU that had a high number of pupils to each computer (Chart 5.1).

[166] OECD (2006) '*Are Students Ready for a Technology-Rich World ?, What PISA Studies Tell us.'*

Chart 5.1: Ratio of pupils to computers in schools attended by pupils aged 15, 2000 and 2003



	BE fr	BE de	BE nl	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
2000	18.2	:	10.9	19.6	8.4	22.8	:	57.9	23.7	12.3	15.3	15.3	:	31.5	:	9.6	12.0	:
2003	15.4	9.5	7.3	13.0	7.0	16.7	:	21.2	17.0	(:)	11.8	12.5	:	20.4	:	6.6	7.5	(9.7)

	NL	AT	PL	PT	SI	SK	FI	SE	UK					IS	LI	NO	BG	RO
									ENG	WLS	NIR	SCT						
2000	(:)	10.1	28.5	67.4	:	:	9.3	8.9	8.2	:	6.9	5.5		10.7	7.2	6.5	46.6	50.8
2003	8.3	7.1	21.8	15.5	:	33.5	7.4	7.7	(:)	(:)	(:)	3.7		6.3	4.1	7.0	:	:

Source: Eurydice. *Data source:* OECD, PISA 2000 and 2003. Malta: Maltese Department of Technology in Education

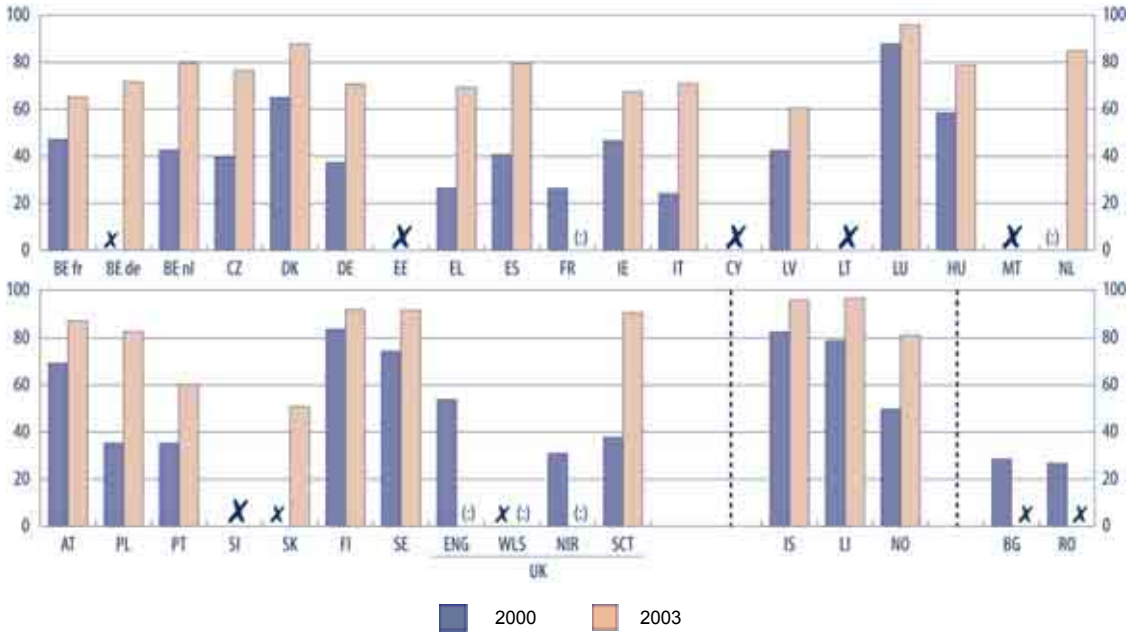
The four countries with more than twenty pupils to a computer are Greece, Poland, Latvia and Slovakia (Chart 5.1). However, spectacular progress in this area has been made in Portugal, Greece, Latvia and Poland (data on Slovakia is not available for 2000). In 2003 Denmark, Luxembourg and Scotland had seven or fewer pupils to a computer.

Countries with a higher pupil to computer ratio also exhibit a much greater variation in this ratio between schools than those countries with a lower ratio. It seems that in the worst-equipped countries, (Slovakia, Poland and Latvia), there are some schools with an extremely high number of pupils for every computer. This means it is likely that many pupils in these countries have no access to a computer, neither in the classroom nor outside. On average in the OECD countries participating in the PISA survey 33% of students attended schools whose principals reported that instruction was to some extent hindered by a shortage of computers for instruction, while 11% reported that instruction was hindered a lot for the same reason. In the EU countries the latter share varied from 4% in Hungary, 5 % in Finland to 27% in Greece. [167]

[167] OECD (2006) 'Are Students Ready for a Technology-Rich World ?, Table 2.5

Chart 5.2: Percentage of school computers connected to the Internet

Average percentage of computers connected to the Internet in schools attended by pupils aged 15 (2003)



	BE fr	BE de	BE nl	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
2000	47.2	✗	43.2	39.8	65	37.3	✗	26.4	40.7	26.3	46.6	24.1	✗	42.4	✗	87.8	58.5	✗
2003	65.2	71.6	79.3	76.5	87.8	70.7	✗	69.2	79.3	(:)	67.4	70.8	✗	60.5	✗	95.9	78.8	(100)

	NL	AT	PL	PT	SI	SK	FI	SE	UK					IS	LI	NO	BG	RO
									ENG	WLS	NIR	SCT						
2000	(:)	69.3	35.3	35.3	✗	✗	83.7	74.3	53.8	✗	30.9	37.8		82.6	78.9	49.8	28.5	26.7
2003	84.8	87.3	82.7	60.4	✗	50.8	92.1	91.9	(:)	(:)	(:)	90.8		95.7	96.6	81.2	✗	✗

Source: Eurydice. *Data source:* OECD, PISA 2000 and 2003. Malta: Maltese Department of Technology in Education

This indicator (Figure 5.2) gives an idea of the level of Internet penetration within the existing ICT infrastructure in schools. It can be seen that in Denmark, Luxembourg, the Netherlands, Austria, Poland, Finland, Sweden and Scotland, more than 80% of school computers are connected to the internet. In Belgium (Fr), Greece, Ireland, Italy, Latvia, Portugal and Slovakia this is the case for less than 70% of computers. The countries with the three highest ratios of Internet-connected school computers also have some of the lowest pupil-computer ratios.

5.2.4 The use of ICT and learning outcomes

While the use of ICT has a positive impact on the increasingly important ICT skills, the impact on other skills is less straightforward.

The PISA survey 2003 shows that students with access to a computer at school perform on average better than students without access to a computer at school. The weighted average performance difference for the 14 EU countries for which data is available is 14 points on the mathematics scale. However, if accounting for socio-economic background (SES) the difference diminishes to 10 points. In some countries there is no significant difference after accounting for SES. In Greece students with no access to computers perform even better than students with access to a computer at school.

Table 5.3 Differences in mathematics performance associated with students' access to a computer, 2003,

Students with access to a computer at school versus students without access to a computer at school

	EU		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
Observed difference	14		**50**	62	**:**	**8**	:	-19	:	:	0	1	:	11	:	:	37	:
Accounting for SES	10		36	42	:	-4	:	-17	:	:	1	8	:	10	:	:	30	:

	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO	JP	US
Observed difference	:	34	17	17	:	**46**	**26**	**21**	:	:	:	:	0	**9**	:	:	**-7**	98
Accounting for SES	:	21	17	12	:	26	25	17	:	:	:	:	-7	6	:	:	-4	72

Source: OECD (PISA) Publication 'Are Students Ready', Table 4.2

Additional notes: EU weighted average based on 14 EU countries for which data is available. Accounting for SES: performance difference after accounting for differences in socio-economic background (ESCS). Statistically significant differences are marked in bold

When it comes to the frequency of use computers at school and student performance on the mathematics scale average performance peaks at medium levels of computer use and is lower if computers are used at school rarely or if they are used more frequently. In some countries like Denmark, Greece, Portugal and Japan frequency of computer use at school seems even to be negatively related to performance in mathematics while in the Czech Republic, according to PISA data, performance increases with frequency of computer use.

Table 5.4: Frequency of computer use at school and student performance on the PISA mathematics scale, 2003

	EU		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
Low	498		544	495	529	508	:	471	:	:	503	479	:	489	:	:	503	:
Medium	513		559	527	520	528	:	458	:	:	513	494	:	496	:	:	506	:
High	492		519	542	490	515	:	431	:	:	506	458	:	481	:	:	491	:

	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO	JP	US
Low	:	504	488	482	:	494	542	522	525	:	:	:	466	515	533	:	553	482
Medium	:	512	510	480	:	529	551	524	534	:	:	:	466	524	555	:	544	502
High	:	513	483	454	:	525	542	500	525	:	:	:	420	511	531	:	512	487

Source: OECD (PISA) Publication 'Are Students Ready', Table 4.4

Additional notes: EU weighted average based on 14 EU countries for which data is available (without UK). The response rate in the UK is too low to ensure comparability. Frequency of use: low: never or less than once a month, medium: between once a week and once a month, high: almost every day or few times each week.

As regards reading average students performance as in mathematics peaks at medium levels (second quarter) of ICT usage for Internet and entertainment and also for medium levels of ICT usage for programs and software.

Table 5.5: Students use of ICT for Internet and entertainment and performance on the PISA reading scale, 2003

	EU		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
Bottom quarter	495		**497**	493	**505**	**504**	:	478	:	:	511	475	:	491	:	:	474	:
Second quarter	509		527	508	502	518	:	476	:	:	527	498	:	506	:	:	497	:
Third quarter	500		526	505	492	505	:	474	:	:	524	483	:	493	:	:	489	:
Top quarter	489		**517**	494	**481**	**492**	:	469	:	:	508	467	:	481	:	:	481	:

	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO	JP	US
Bottom quarter	:	491	497	475	:	**463**	**549**	**529**	528	:	:	:	448	**504**	524	:	**477**	497
Second quarter	:	507	505	486	:	490	550	525	532	:	:	:	456	510	529	:	504	507
Third quarter	:	496	504	476	:	495	545	517	520	:	:	:	449	491	535	:	516	497
Top quarter	:	484	502	482	:	**476**	**535**	**498**	487	:	:	:	439	**471**	513	:	**52**0	498

Source: OECD (PISA) Publication 'Are Students Ready', Table 4.7

Additional notes: The response rate in the UK is too low to ensure comparability. EU weighted average based on EU countries for which data is available (without UK). Statistically significant differences are marked in bold

The data on the relation between the intensity of ICT usage and mathematics and reading skills implies that there is an optimum level of ICT usage as regards these skills and that beyond this optimum more does not automatically mean better. The OECD report on ICT usage hence concludes that 'it is the quality of ICT usage, rather than necessarily the quantity, that will determine the contribution that these technologies make to student outcomes.[168]

5.3 Conclusion

ICT penetration in households, enterprises has increased dramatically in Europe in the last decade. Most students now have access of ICT at home, especially in the form of PCs and mobile phones. As regards schools, however, in 2003 there were still countries in the EU in which the quality of the ICT infrastructure in schools was relatively low, despite the considerable progress made since 2000. It can also be seen that those countries which have low pupil-computer ratios tend also to have a higher rate of Internet connection.

When it comes to the frequency of ICT usage and learning outcomes in areas like reading and mathematics beyond a certain level of usage more does not mean better. More micro-studies are probably needed to explore the impact on ICT usage on learning outcomes in more detail and shed more light on the optimal use of ICT in education.

[168] OECD (2006) 'Are Students Ready for a Technology-Rich World ?', page 69

STRATEGIC OBJECTIVE 2

FACILITATING ACCESS OF ALL TO EDUCATION AND TRAINING SYSTEMS

Main messages

Participation of young people in education

- 86.3% of all 4-year-olds were enrolled in pre-primary or primary educational programmes within the EU25 in 2003. The participation rate has increased slightly (by 0.9 percentage points) from 2000 to 2003. The rate is higher than in the USA but lower than in Japan. There are only four countries in which about one half or less of the 4-year-olds participated in education in 2003.
- More than 20% of 18-year-old Europeans still do not participate in education and training but the participation rate increased by 3 percentage points from 2000 to 2003.
- Slightly more than half of students enrolled in upper secondary programmes were enrolled in a vocational stream in 2003. There are significant differences between the countries reaching from participation rate less than 15% (Cyprus and Ireland) to 79.3% (Czech Republic).
- Participation in education after the end of compulsory education (15-24-year-olds) increased by 2.7 percentage points from 2000 to 2003. Since upper secondary participation rates did not change much, this increase is caused primarily by a substantial increase in tertiary participation rates.

Participation of adults in education

- In 2005, about one in ten adults (10.8%) aged 25-64 in the EU25 participated in education and training activities (in a period of 4 weeks prior to the LFS survey). On average women participated more than men.
- Only one of thirty adults (aged 25-64) with less than upper-secondary education participated in education and training in 2005. Adults with a high educational attainment level are more than six times as likely to participate in lifelong learning.
- There is also a decrease in participation as age increases. Participation in non-formal education during the previous 12 months decreased slightly in 2003 between 25-34 and 35-44-year-olds, a little more for 45-54-year-olds and considerably for 55-64 year olds. The same pattern was noticed in most countries and in both sexes .
- Thus, the general increase in participation of adults in lifelong learning as set up by the benchmark without taking into account the inequalities based on the level of initial education and age may lead to their further deepening .
- 4.5% of the population aged 25-64 participated according ad hoc module of LFS 2003 in formal education during the previous 12 months. Participation in non-formal education was more than three times higher (16.5%). 17.5% of all participants followed a course in computer science, and 7.2% attended language courses.

Early school leavers

- Every sixth young person aged 18 to 24 still leaves school in the EU25 with no more than lower secondary education and does not participate in any kind of education or training.
- There has been continuous progress in recent years in reducing the number of early school leavers, but progress must be faster to reach the EU benchmark of 10% in 2010.
- The Czech Republic, Denmark, Lithuania, Austria, Poland, Slovakia, Finland and Sweden, and Norway, all have rates of early school leaving well below the European reference level of 10%.
- In the majority of countries, there are more male than female early school leavers.
- The average age of young people when they leave school ranges from 14.5 (Greece) to19.6 years (Denmark).
- School leavers avail of opportunities to obtain upper secondary education mainly up to the age of 30; after this age it is rather unusual.
- The extension of compulsory schooling might have positive impact on reducing early school leaving, but other factors may even more influence the rate of early school leaving.

Introduction

Strategic Objective 2 of the "Education and Training 2010" programme, "Facilitating the access of all to education and training systems," contains three objectives focused on open learning environment, making learning more attractive and supporting active citizenship, equal opportunities and social cohesion. It puts the issue of the equity of the education and training systems at the forefront.

According to this objective, all citizens should have equal access to education and training. [169] The needs of vulnerable groups, particularly people with disabilities and people with learning difficulties, as well as those living in rural/remote areas or having problems in reconciling their work and family commitments should especially be addressed.

Questions of citizenship, equal opportunities and social cohesion are essential dimensions of education and training. Learning democratic values, and democratic participation by all school partners, should be promoted to prepare people for active citizenship[170]. However, the absence of internationally comparable data on active citizenship (as indeed, a standard definition of what active citizenship means or includes) hinders analysis in this area.

Participation in education and training throughout life has become a necessity for the individual living in a knowledge society. The foundations for the participation in

[169] In this report 'access' is understood as a right to participate ('participation'). Participation means that an individual has a real opportunity to experience an education or training. It is different from another, more 'formal' definition of access, which stresses the importance of having the *right* to participate in education and training, without being concerned with whether this right can actually be exercised in practice.

[170] The focus on increasing social cohesion was affirmed especially by the Presidency Conclusions European Council, Laeken, in December 2001 which was the basis for the definition of a list of social inclusion indicators (the "Laeken indicators").

education and training, and therefore for successful personal development and professional life, are already set in early childhood. Access to and participation in pre-primary education is crucial for those children who are at risk of being excluded, due to various factors (for example low economic and educational status of their parents, special needs).

However, current demographic trends imply that Europe will need to rely not only on well-educated younger generations but also on older workers – it is imperative to increase the labour-market participation of older people, women, migrants and minority and raise overall employment levels [171]. The integration (or re-integration) of these groups into the labour force will entail providing them with the skills and competencies they need to participate in a fast-paced knowledge-based economy. Moreover, all citizens will need to up-date their skills and qualifications throughout life for continuing personal and professional development.

Young people who leave education without recognised qualifications are at a disadvantage in the labour market. Their personal and social development is curtailed and they are at increased risk of poverty and social exclusion. Moreover, certain groups of early school leavers are likely to experience greater disadvantage than others, in particular those who leave the system before completion of primary education.

The necessity of increasing particularly the participation of adults in lifelong learning and of reducing the number of young Europeans who leave the school with no more than lower secondary education has led the Council to establish benchmarks in these two areas towards the strategic objective of facilitating the access of all to education and training.

[171] *Presidency conclusions*, European Council, Barcelona, 2002, Part III, Contributions to the deliberations, p.48.

VI PARTICIPATION IN EDUCATION AND TRAINING

Access to education and training is closely related to participation in lifelong learning. It encompasses learning for personal, civic and social purposes as well as for employment-related purposes and it can take place in a variety of environments in and outside the formal education and training systems. Even partial participation in education (without successful completion of the whole programme) provides individuals with knowledge and skills, opens up for the economic and social returns associated with them.[172]

The main goal of this part of the report is first of all to present progress of the EU in two main areas: 'participation of adults in lifelong learning' and 'early school leavers' for which specific European benchmarks have been approved by the Council in a broader context of a lifelong learning of individuals in various stages of their life, including the participation of younger groups in education and training not covered by EU reference level (benchmark) on participation of adults in lifelong learning. Such more detailed and in-depth analysis will help us better understand the context of the European benchmarks and the conditions for fulfilling the objectives set up in these fields for 2010.

6.1 Participation of young people in education and training

These indicators were selected as context indicators, focusing on participation of young people in education and training and supplementing the indicator on participation of adults in lifelong learning (EU benchmark):

- *Participation rates of 4-year-olds in education*
- *Participation rates of students aged 15-24 years in education (ISCED 1-6)*
- *Participation rates of 18-year-olds in education*
- *Proportion of students in upper secondary education enrolled in vocational streams (ISCED3)*
- *Participation in tertiary education (ISCED 5 and 6)*
- *Participation in tertiary education by age groups (ISCED 5 and 6).*

6.1.1 Participation in pre-primary education

The target to increase participation in pre-primary education to 90% of all children aged from 3 years to the beginning of compulsory schooling was set by the Barcelona Council of 2002 in order to increase employment of young women.[173]

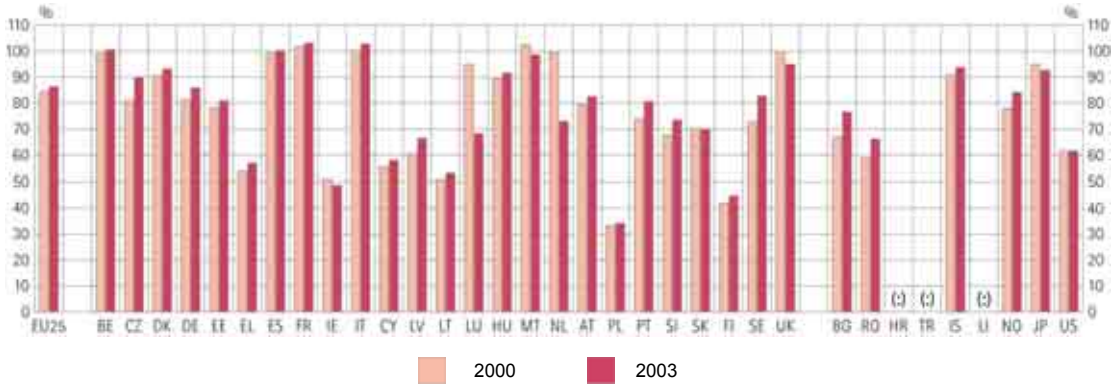
However, this target is policy relevant also from the aspect of the educational and social dimension of children concerned, because the participation in pre-primary education has a strong influence on educational achievement during compulsory schooling, including on early school leaving, and further participation in lifelong learning, both targets covered by European reference levels (benchmarks) for 2010. This target is particularly important for reducing imbalances caused by the lower socio-economic status of families, and factors such as the educational attainment of parents, the difference between the languages spoken at home and language of instruction in school, and many other negative factors which influence the further personal development and professional career of individuals. For example, the PISA

[172] R Layard & G. Psacharopoulos (1974. *The screening hypothesis and the returns to education*.
[173] *Presidency conclusions*, European Council, Barcelona, 2002.

survey has shown that students at the age of 15, who have attended pre-school for at least one year have an average 8-score-point advantage in mathematics performance, when the other socio-economic background factors are equal.[174]

The indicator used in this area presents the percentage of 4-year-olds who are enrolled in pre-primary institutions or primary education. [175] They can either be schools or non-school settings, which sometimes come under authorities or ministries other than those responsible for education.

Chart 6.1: Participation rates of 4-year-olds in education, 2000-2003



	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
2000	85.4		99.2	81.0	90.6	81.4	78.2	53.9	99.3	100.0	51.1	100.0	55.7	60.6	51.0	94.9	89.5	1000
2003	86.3		100.0	89.8	93.2	85.9	80.9	57.0	100.0	100.0	48.7	100.0	58.1	66.5	53.1	68.3	91.6	98.7

	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO	JP	US
2000	99.5	79.5	33.3	72.3	67.7	70.3	41.9	72.8	100.0	67.0	59.0	:	:	90.9	:	78.1	94.9	61.7
2003	73.0	82.5	34.1	81.9	73.5	70.0	44.7	82.7	94.9	76.6	66.2	:	:	93.7	:	84.2	92.7	61.6

Data source: Eurostat (UOE data collection)

Additional notes:
Data include both, participation in pre-primary and primary education.
BE: data exclude independent private institutions, but these institutions are attended only by a very limited number of children.
IE: There is no official provision of ISCED level 0 education. Many children attend some form of ISCED 0 education but data are for the most part missing.
NL: reference data of collecting these data was changed in 2002 from 31 December to 1 October.

As shown in Chart 6.1, from 2000 to 2003 the increasing trend which started in a majority of countries after the 1960s continued: the participation of four-year-olds in education again increased slightly from 85.4% to 86.3%.[176] The average rate is higher than in the USA but lower than in Japan. On the other hand, access levels still vary widely across Europe. In France, Belgium, Italy, the UK and Spain, the participation of four-year-olds is almost universal, whereas in four countries – Greece, Lithuania, Poland and Finland – only about one half or less of the 4- year-olds participates in education. However, in Greece pre-primary

[174] OECD (2004). *Learning for Tomorrow's World First results from PISA 2003.* p.257.

[175] According to the ISCED definition pre-primary education covers "programmes at level 0, defined as the initial stage of organised instruction designed primarily to introduce very young children to a school-type environment, i.e. to provide a bridge between the home and a school-based atmosphere". That means day care without educational element is excluded.

[176] The population data and the education data come from different surveys not carried out at the same dates of the year. Population data are in several countries based on a census carried out several years before. This can result in deviations even if both types of surveys are reliable. For some countries there is also an inflow of pupils/students from other countries, who are not included in the population statistics. These aspects explain the situation in the countries in which the participation rates are indicated as 100%.

education is only available from the age of 4 and onwards, in Ireland, the Netherlands and the UK, four- year- olds are already enrolled in primary education and in Finland the majority of 4-year old children attend day care centres with highly qualified staff which also fulfil certain educational role.[177]

Research suggests[178] that these key factors may correlate with participation in pre-primary education:

1) Government regulations with respect to:
   - the statutory age at which children start the compulsory phase of education;
   - whether access to pre-primary education is a statutory right;
   - parental leave, which particularly affects children aged under four years.
2) Cultural norms regarding the age at which children should be placed in care outside the home.
3) The incidence of single parent (especially lone-mother) households. In order for lone parents to re-enter or remain in the labour market there is a need for greater access to affordable pre-primary education or day care even for very young children.
4) The incidence of dual-earner households. Higher female participation in employment increases both fertility rates (since the costs of children can be more easily afforded by households) and demand for pre-primary education or day care.
5) Labour market conditions (e.g. in times of recession women are more likely to opt out of the labour market, so employment growth or decrease is relevant) and labour market flexibility (including the availability of part-time jobs.)
6) The availability and affordability of pre-primary education. Practice varies widely across Europe in the structure and the extent to which it is state-supported or private. On average OECD countries pay around 75% of the costs of pre-primary education through public funds, with parents paying the remaining 25%, but there is variation between individual countries.[179]

The participation rates could be higher because the demand is there, for example, in countries which have waiting lists (Austria, England, Germany, Iceland, Lithuania, the Netherlands, Norway, Portugal, Romania and Switzerland). Differences in participation rates in pre-primary education may be caused also partly due to different policy choices regarding the distribution of financial resources across education levels. For instance, in pre-primary education those countries where the enrolment rates are higher spend more than 0.5% of GDP on financing this education level (Denmark and Hungary 0.8% each, France 0.7%).

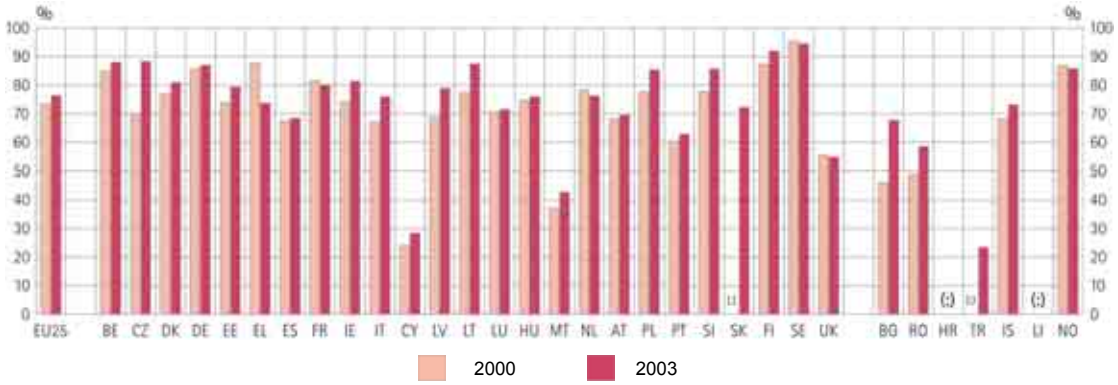
As a result of the shortage of public institutions, private supply is prevailing in the USA and expanding in many EU countries.

6.1.2 Participation of 18-year-olds in education

This indicator presents the percentage of all 18-year-olds who are still in any kind of education (all ISCED levels)[180]. It gives an indication of the number of young people who have not abandoned their efforts to improve their skills through initial education and it includes both those who had a regular education career without any delays and those who had to repeat some steps in the past.

[177] Eurydice (2005). *Key Data on Education in Europe 2005*.
[178] M.S. Otero & A. Mc Coshan (2005). *Study on Access to Education and Training*.
[179] OECD (2001). *Starting Strong: Early Childhood Education and Care*.
[180] Refers to the beginning of the school year. In fact, about half of these 18-year-old students have reached the age of 19 by the time they end the reference school year (in a majority of the countries in June).

Chart 6.2: Participation rates of 18-year-old in education, 2000-2003



	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU
2000	73.3		84.9	70.1	76.8	85.8	73.8	87.8	67.3	81.5	74.1	67.1	24.1	68.9	77.4	70.5	74.6
2003	76.4		88.0	88.3	80.9	86.9	79.3	73.6	68.4	80.1	81.3	75.9	28.4	78.9	87.4	71.4	75.9

	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO
2000	37.1	78.4	68.1	77.5	59.9	77.7	:	87.3	95.5	55.5	46.2	48.6	:	:	68.2	:	86.8
2003	42.8	76.2	69.4	85.4	62.7	85.7	72.2	91.9	94.5	53.8	67.7	58.5	:	23.4	73.1	:	85.8

Data source: Eurostat (UOE data collection)

Additional notes:
BE: data exclude independent private institutions, but these institutions are attended only by a very limited number of students.
DE 2003: data include for the first time data on ISCED 3C (ca 17 000 students).
ES: Population data have been revised 2003LU;
CY: All boys aged 18-24 are in compulsory military service. The participation rates are thus underestimated.
NL: reference date of collecting these data was changed in 2002 from 31 December to 1 October.
LU: Many students study abroad and are not included in enrolment but in population data, therefore participation rates by age are underestimated

Data show that the participation rate of 18-year-olds in education increased by 3 percentage points in the EU25 from 2000 to 2003. Two countries – Finland and Sweden – have already reached a participation rate of over 90%. Participation increased in all Member States, except for Greece, France, the Netherlands, Sweden and the UK. The highest increase was achieved in the Czech Republic (an increase of 18.2 percentage points), Latvia and Lithuania (10 percentage points), followed by Italy (8.6 percentage points).

6.1.3 Participation in vocational education and training

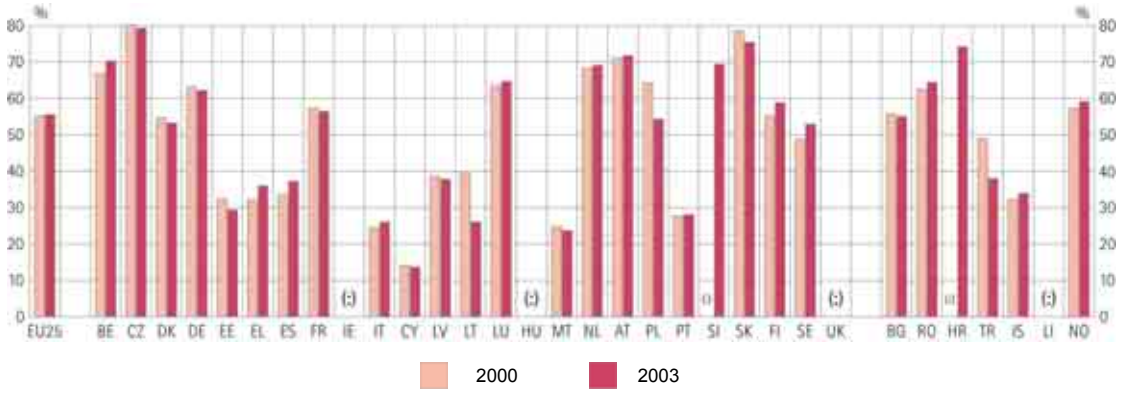
Recent comparative research suggests that the education and training systems which allow young people to participate relatively early in vocational education, mostly at the level of upper secondary education (ISCED 3), better meet the educational needs of some pupils at risk, and therefore positively influence the phenomenon of early school leaving. [181] On the

[181] For example, P. de Broucker (2005) in "*Without a Paddle*" analyses this phenomenon in relation to share of drop-outs in the 0ECD countries. According to him, there are three groups of countries: countries with a mainly workplace-based apprenticeship system (as in Austria, Germany), countries with a mainly school-based vocational system (as in the Czech Republic, Finland, Hungary, Poland, the Slovak Republic and Sweden), and countries with a mix of these two approaches (as in Denmark and Norway). In all such countries where large numbers of young people move through the end of upper secondary school and eventually through an additional few years of post-secondary non-tertiary education, large proportions of 20-to-24-year-olds who are no longer in education hold a credential that offers opportunities in skilled occupations in the labour market. Most often impact is that lower numbers of young people are leaving the education system without any upper secondary diploma. Among this large group of countries, a cluster analysis helps distinguishing three groups: (1) countries (essentially the Scandinavian countries) where the tertiary education

other hand, high participation rates in vocational streams in combination with education and training systems which are less flexible and limit access to tertiary education or do not encourage young people leaving this type of education for further studies may represent a barrier for reaching higher average levels of educational attainment among the entire population in these countries.

Chart 6.3: Participation in vocational stream of upper secondary education

(Percentage of pupils in upper secondary education enrolled in vocational stream, 2000, 2003)



	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU
2000	55.2		66.8	80.2	54.7	63.2	32.5	32.1	33.5	57.4	0	24.6	14.2	38.6	39.6	63.5	:
2003	55.6		70.2	79.3	53.3	62.2	29.3	36.0	37.2	56.4	0	26.0	13.7	37.8	26.1	64.7	:

	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO
2000	24.8	68.3	71.1	64.3	27.8	72.3.	78.6	55.3	48.8	:	55.7	62.5	:	49.0	32.3	:	57.3
2003	24.0	69.1	71.8	54.3	28.1	69.4	75.4	58.8	52.9	:	55.0	64.4	74.2	38.0	34.0	:	59.2

Data source: Eurostat (UOE data collection)

Additional notes:
Pre-vocational education is included in general education.
BE: data exclude independent private institutions, but these institutions are attended only by a very limited number of students. Data include social advancement secondary education.
DE 2003: data include for the first time data on ISCED 3C (ca 17 000 students)

As shown in the Chart 6.3, the distribution of the total number of students enrolled in vocational streams both giving and not giving access to higher education did not change significantly in the EU in the past years. As many as 55.6% of all students enrolled in upper secondary in 2003 with significant differences in individual countries reaching nearly 80 % in the Czech Republic and less than 15 % in Cyprus and Ireland. The values close to the EU average figures about 50% are observed in all Nordic countries as well as in France and Poland.

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system is open and offers a variety of institutional options (university and non-university), with few access restrictions and often low or no tuition fees and where a relatively large proportion of 20-to-24- year-olds is still enrolled in education; (2) other countries (typically Austria, Germany and Switzerland), where access to universities is more selective and the non-university tertiary sector is relatively less developed, and in which, as a result, fewer young adults pursue education at the tertiary level; (3) third group consisting of the Czech Republic and the Slovak Republic, where the tertiary sector is relatively limited and very large proportions (two-thirds) of 20-to-24-year-olds graduate from upper secondary schools or short-duration, non-tertiary vocational schools; (4) group of countries such as Canada, Australia, Belgium, France, Ireland, the UK and the United States providing significant short-program options in tertiary education, to the extent that one in seven 20-to-24-year-olds not in education holds a tertiary diploma. This is substantially higher than in other countries where no more than one in 20 young adults in the same age group have obtained a tertiary education diploma.

However, in countries with low levels of participation (Cyprus, Italy, Malta and Portugal), the scope of participation in vocational stream in upper secondary education has to be seen in the context of the whole system of vocational education and training within the country, mainly as concerns how strongly developed the sector of pre-vocational education and training and post-secondary vocational education (not tertiary) are in the country.

From 2000 to 2003 participation in vocational stream of upper secondary education decreased in nearly all new Member States; of these countries, Poland experienced the highest decrease - the participation of students in vocational streams decreased in this country by 10% in 3 years and reached the level slightly below EU average in 2003. Simultaneously, the share of those upper secondary graduates (ISCED 3) with qualifications giving access to higher education within this group increased. The decrease of participation rates in these countries highly correlates with substantial change of the economies as a consequence of the decline of traditional industries such as textiles or heavy engineering as well as with change of structure of professions.[182]

In 2003, the highest proportion of students enrolled in vocational stream of upper secondary education was observed in the Czech Republic and Slovakia (79.3% and 75.4% respectively). These two countries are characterized by low ratios of early school leavers, but also by relatively low participation in higher education. This might indicate that the systems of vocational education and training in these countries are strong, highly developed and are meeting the educational needs of a high proportion of young people, including of young people at risk in a sufficient manner. The attractiveness of VET remains however a challenge for many countries. This is a crucial objective to support access to lifelong learning.

On the other hand, the education and training systems with a very strong vocational stream in upper secondary education simultaneously may not adequately stimulate for participation in further studies because the aim of vocational education and training (VET) is according to the definition developed by European Training Foundation (ETF) 'to equip people with skills and competences that can be used in the labour market.[183] Even in the case when the students leave the education and training with qualifications allowing direct access to higher education only a low proportion of them continues in further tertiary studies.[184]

It has also to be stated that the vocational streams of upper secondary education in some countries produce a significantly higher proportion of early school leavers of the total number of enrolled students in this stream than general upper secondary education.[185] Despite lack of data, many countries are faced with a growing student preference for general education. In comparison with general secondary education, VET is less attractive first of all for academically oriented young people in many countries. Attempts to raise the image of VET, also by increasing access to higher education, have been made in all Member States.[186]

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[182] European Commission, Directorate General Education and Culture (2005). *The Achieving of Lisbon goals. The contribution of VET.*

[183] Ibid, p.8.

[184] For example, in Slovakia nearly 100 % of all graduates from general upper secondary education as opposed to only about 50 % equally qualified graduates of vocational stream of upper secondary education continued in tertiary education in 2004. (Source: *Statisticka rocenka skolstva* (2005).UIPS, Bratislava).

[185] For example in Norway, in the 1999 cohort, 84 per cent of the pupils in general studies completed their education within five years. The corresponding figure for pupils and apprentices in vocational studies was 55 per cent. To drop out from upper secondary education in Norway means that the pupil or apprentice is no longer registered in upper secondary education. The reason could be that they have started another education, travelled abroad or become employed, among others. See http://www.ssb.no/english/subjects/04/02/30/vgogjen_en/

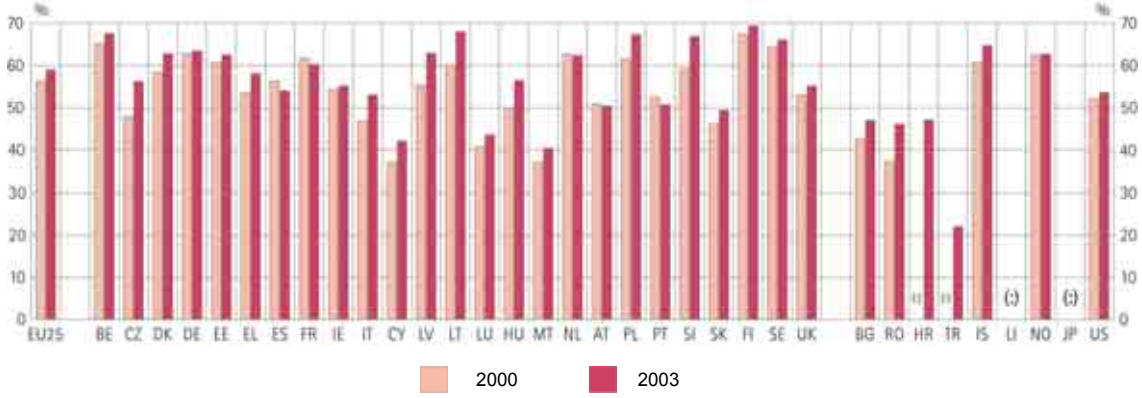
[186] European Commission, Directorate General Education and Culture (2005). *The Achieving of Lisbon goals. The contribution of VET.* pp. 72-73.

As regards the gender dimension, slightly fewer females (53.8 %) than males (57.4%) were enrolled in vocational stream in upper secondary education within EU in 2003.

6.1.4 Participation in post-compulsory education

The knowledge-based economy requires an increase in the participation of young people in education and training beyond the age of compulsory schooling (16-18 and beyond). The indicator used in this area for monitoring progress shows that a substantial and increasing proportion of 15-24 year-olds participate in education after 2000.

Chart 6.4: Participation in post-compulsory education
(All enrollments on ISCED 1-6 (students aged 15-24 years), 2000/2003)



	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
2000	56.3		65.3	47.9	58.4	62.8	60.7	53.6	56.3	61.8	54.3	46.9	37.0	55.4	60.1	40.8	50.1	37.1
2003	59.0		67.6	56.2	62.8	63.5	62.5	58.1	54.0	60.3	55.2	53.0	42.1	62.9	68.0	43.6	56.5	40.4

	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO	JP	US
2000	62.7	50.9	61.6	51.&	59.3	46.0	67.5	64.5	53.0	42.5	37.3	:	:	60.8	:	62.5	:	52.1
2003	62.4	50.4	67.3	51.4	66.9	49.4	69.4	66.1	54.7	47.0	46.1	47.1	22.1	64.8	:	62.7	:	53.6

Data source: Eurostat, (UOE data collection)

Additional notes:
BE: Data excludes independent private institutions, but these institutions are attended only by a very limited number of students.
ES: Population data have been revised in 2003 which led to a break in time series
CY: Most students in tertiary education study abroad and are not included in the enrolment data, but they are included in the corresponding population data. In addition, all boys aged 18-24 are in compulsory military service. The participation rates are thus underestimated.
DE, RO, SI: Data excludes ISCED level 6, except for RO for 2003
LU: Most tertiary students study abroad and are not included. Also many pupils at ISCED levels 1, 2 and 3 study abroad and are not included in enrolment but in population data, therefore all participation rates by age are underestimated. In ISCED 5, data by age is missing.
SK: Data refers to 2001 and 2003

Participation rates in post compulsory education (15-24 year olds) is steadily increasing in the EU (increase by 2.7 percentage points from 2000 to 2003). Since upper secondary participation rates did not change much, this increase is caused primarily by a substantial increase in tertiary participation rates.

More than 65 % of 15-24 year-olds participated in education and training in 2003 in Finland, Lithuania, Belgium, Poland, Slovenia and Sweden. The highest increase (more than 7 percentage points) between 2000 and 2003 was recorded in Lithuania, Slovenia and Latvia. A slight decrease in participation rates between 2000 and 2003 (less than 2 percentage points) was observed in four countries (France, the Netherlands and Austria).

When we look at the gender perspective of participation in post-compulsory education, in the majority of countries women participate more in post-compulsory education than men.

6.1.5 Participation in tertiary education

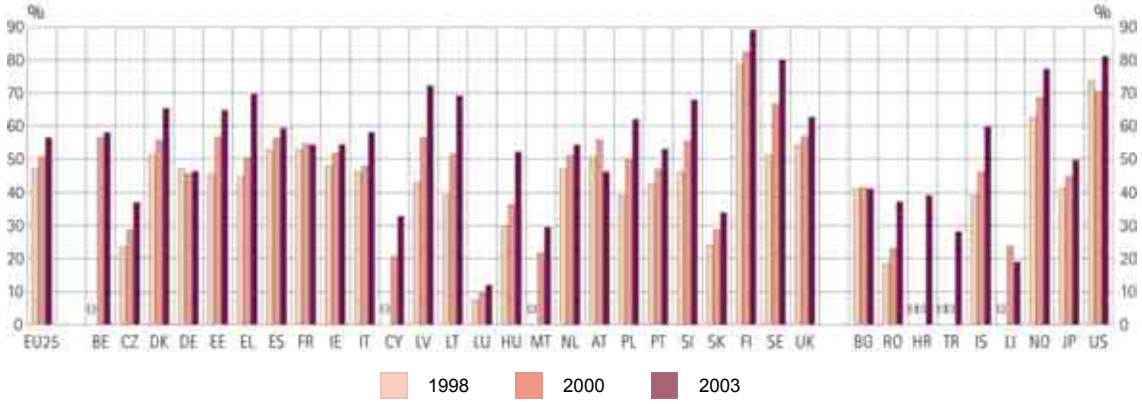
Participation in tertiary education has been increasing since many years in the EU. In 2003, European students enrolled in tertiary education represented already about half of the European population aged 20-24 years.[187]

As shown in Chart 6.5, enrolments in tertiary education varied widely between countries representing values between about 30% and almost 90% as a proportion of the 20-24 year age group[188] . However, it has to be stated that the position of individual countries could be different if another age group of population would be selected taking into account the fact that in some countries a relatively high proportion of students are belonging to the age group over 24 years (for example in Sweden, the UK, Denmark, Spain, Latvia, Austria and Germany) or if a concept of net enrolment ratio would be applied (see also Chart 6.6).

Participation in tertiary education is expanding not only in some countries which showed low participation rates in the mid-1990s, such as Greece, but also in countries that already had high participation rates, like the Nordic countries. Only two Member States (Austria and Germany) have experienced a slight decrease of enrolments in tertiary education as a proportion of the age group 20 to 24 year olds between 2000 and 2003 that, as it can be seen from the chart below, in both cases represent a further fall compared to 1998.

Chart 6.5: Participation in tertiary education (1998, 2000 and 2003) (%)

(All enrolments in ISCED 5-6, independent of age, as a percentage of 20-24 year olds in population)



	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
1998	47.1		:	23.6	51.2	47.0	45.5	44.7	52.7	52.8	47.8	46.1	:	43.1	39.3	7.4	29.9	:
2000	50.7		56.6	28.5	55.7	45.4	56.7	50.3	56.3	54.5	51.8	47.8	20.8	56.5	51.5	9.6	36.4	21.7
2003	56.4		58.0	37.1	65.4	46.3	64.8	69.7	59.3	54.3	54.4	58.1	32.9	72.2	69.2	12.0	52.2	29.8

	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO	JP	US
1998	46.8	50.6	39.1	42.8	45.9	24.2	78.6	51.1	54.3	41.2	18.5	:	:	39.2	:	62.5	41.4	73.8
2000	51.0	55.7	49.9	46.8	55.4	28.6	82.4	66.7	58.1 6.8	41.6	23.1	:	:	46.1	23.8	68.5	44.8	70.6
2003	54.2	46.1	62.0	53.0	68.0	34.0	89.1	80.2	62.2	41.2	37.3	39.2	28.2	59.8	19.0	77.3	49.7	81.2

Data source: Eurostat, UOE data collection

[187] The concept of gross enrolment rate is used. The gross enrolment rate is the total number of students enrolled in tertiary education divided by the number of people in an appropriate age range for tertiary education, that means, all enrolments in ISCED 5-6, independent of age, as a percentage of 20-24 year olds in population.

[188] Luxembourg presents even lower figures at around 10%, but this is because the majority of students studies abroad. Also the low values for Malta and Cyprus are influenced by this fact.

Additional notes:
BE: Data exclude independent private institutions, but these institutions are attended only by a very limited number of students.
DE, SI: Data exclude ISCED level 6
LU: Most national tertiary students study abroad and are not included
CY: Most students in tertiary education study abroad and are not included in the enrolment data, but they are included in the corresponding population data. In addition, all boys aged 18-24 are in compulsory military service. The participation rates are thus underestimated.

In general, participation rates in tertiary education in new Member States and candidate countries were in 1998 lower than those of EU15 countries but the trend towards increased participation is in the majority of them strong. Whereas in 1998 their participation rates in tertiary education ranged from 20% to about 45%, in 2003 they reached the values between 30% and 70%. Furthermore growth in these countries is not related to their initial position in the first year of reference, since countries that were already performing at higher levels in 1998 – such as Poland, Baltic countries and Slovenia – are amongst those who have experienced a higher absolute increase in participation in the period up to 2003.

Participation in tertiary education does not seem to relate either to whether the access to tertiary education is open (such as in Germany, France, Italy or the Netherlands), whether a special entrance examination needs to be passed (such as in Greece, Spain and a majority of new the Member States) or whether places are available (as in the UK or Sweden).

In most EU countries, participation rates have increased substantially since 2000, when the Lisbon strategy was approved, than in the period before 2000. However, also the participation trends in tertiary education in EEA countries, Japan and the USA experienced a strong increase after 2000. This may suggest that also structural reasons and other factors may be responsible for this increase.[189] Indeed, for example the USA witnessed a decrease in participation rates during the period 1995-2000, but a pronounced increase after 2000 though still below European countries such as Finland and Sweden.

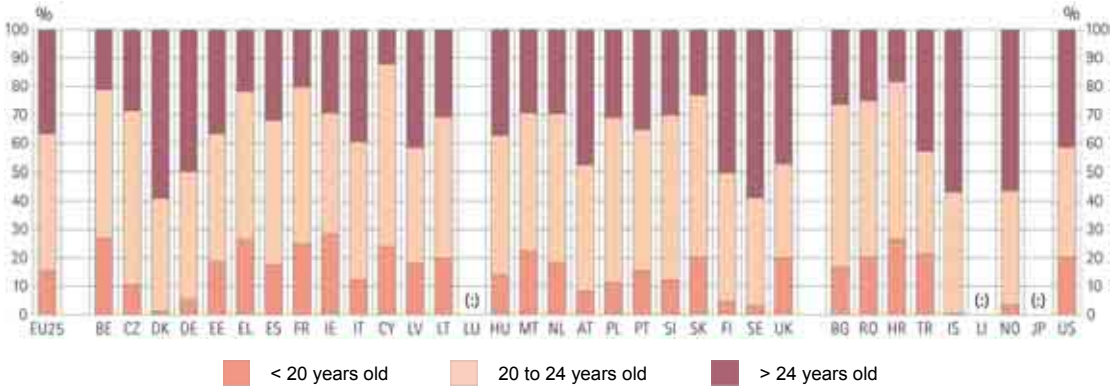
As concerns the participation of older students outside typical student age (over 24 years) in tertiary education, this group represented 36.7% of all students enrolled in tertiary education in the EU in comparison to the slightly higher proportion 41.4% in the USA in 2003.

Also here, the situation in individual European countries varies widely. Very high proportions of older students (more than 50 %), much higher than the EU and the USA percentages, are observed in Sweden, Denmark, Finland and Germany, but also in Iceland and Norway. On the contrary, older students are underrepresented in tertiary student population in Cyprus (12.2%), but also in Belgium, France, Greece and Slovakia with proportions at about 20%.

[189] The Bologna process could influence participation in higher education in the future. The two-cycle courses make first degrees shorter in some European countries, thereby lowering costs and making them more attractive to students and reducing drop-outs. Some countries which had a structure closer to that to be generalised through the Bologna process, such as the UK, Denmark and some new Member States, have exhibited higher levels of participation tertiary education than countries in which long degrees were general, such as Spain, Italy or Germany.

Chart 6.6: Age distribution of tertiary students

(Tertiary students (ISCED 5-6) in the age groups below 20 years, 20-24 years and above 24 years as a percentage of tertiary students, 2003)



	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
Total *	56.5		58.0	37.1	65.4	46.3	64.8	69.7	59.3	54.3	54.3	58.1	32.9	72.2	69.2	12.0	52.2	29.6
Percentage of students :																		
< 20 y.o.	15.3		26.8	10.4	1.2	5.2	18.6	26.4	17.5	24.7	28.3	12.2	23.9	17.9	19.7	:	13.9	22.3
= 20/24 y.o.	48.1		52.1	61.0	39.7	44.7	44.5	51.8	50.5	54.9	42.2	48.1	63.9	40.6	49.5		48.8	48.3
> 24 y.o	36.7		21.2	28.6	59.1	50.1	36.8	21.8	32.0	20.3	29.4	39.6	12.2	41.4	30.8		37.4	29.5

	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO	JP	US
Total *	54.1	46.1	62.0	53.0	68.0	34.0	89.1	80.2	62.7	41.2	37.3	39.2	28.2	59.8	:	77.3	49.7	81.2
Percentage of students :																		
< 20 y.o.	18.2	8.2	11.1	15.4	12.1	20.2	4.4	3.1	19.9	16.6	20.2	26.5	21.4	0.4	:	3.5	:	20.3
= 20/24 y.o.	52.2	44.1	57.9	49.3	57.7	56.7	45.0	38.0	32.7	56.9	54.7	55.1	35.8	42.7	:	40.0	:	38.2
> 24 y.o	29.6	47.7	31.0	35.3	30.2	23.1	50.6	58.9	47.3	26.5	25.1	18.4	42.8	56.9	:	56.5	:	41.4

Data source: Eurostat (UOE Data collection)

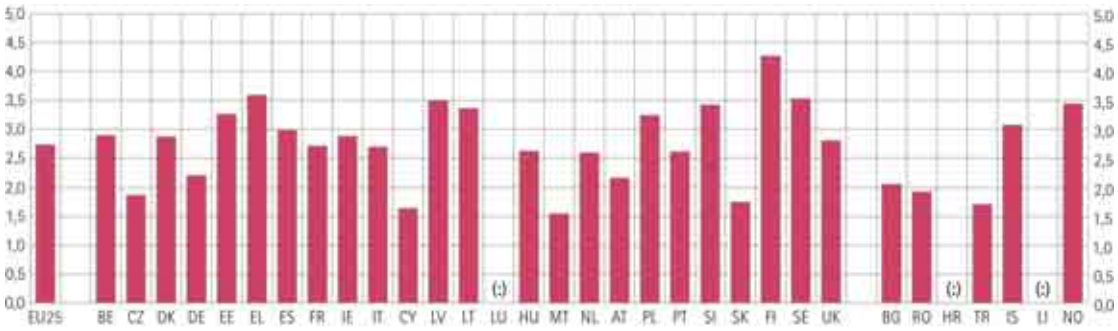
Additional notes:

* Total number of students independent of age, as percentage of 20-24 years old
BE: Data exclude independent private institutions, but these institutions are attended only by a very limited number of students.
DE, SI: Data exclude ISCED level 6
LU: Most tertiary students study abroad and are not included
CY: Most students in tertiary education study abroad and are not included in the enrolment data, but they are included in the corresponding population data. The participation rates are thus underestimated.
LU, JP: Data by age not available
IT, PL: Data by age in ISCED 6 not available, all ISCED 6 included in age above 24 years

A young person in the EU**,** below 17 years of age, can expect to receive on average 2.73 years of tertiary education (ISCED 5-6) through his or her life-time if the participation in tertiary education continues as in the academic year 2002/03.[190] The expected number of years varies between the highest number in Finland (4,27 years), more than 3 years in Estonia, Greece, Latvia, Lithuania, Poland and Sweden as well as in Island and Norway and the lowest number of years, below 2 years, in the Czech Republic, Malta and Slovakia.

[190] The indicator is calculated by adding the net enrolment percentages for each single year of age and age band. The net enrolment rates are calculated by dividing the number of students of a particular age or age group (in ISCED 5A, 5B and 6) by the number of persons in the population in the same age or age group. For students whose age is 'unknown' the net enrolment rate has been estimated by dividing these students by the population aged 20-64 years and multiplying by 45 (years). The calculation is based on head-counts, that is part-time and full-time studies are counted the same. Reference date for population data is 1st of January 2003.

Chart 6.7: Expected years of received tertiary education (ISCED 5 and 6), 2002/2003



EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU
2.73		2.89	1.87	2.87	2.21	3.26	3.59	2.98	2.71	2.88	2.69	1.64	3.50	3.36	:	2.62

MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO
1.55	2.59	2.17	3.24	2.61	3.42	1.75	4.27	3.53	2.80	2.06	1.93	:	1.71	3.07	:	3.44

Data source: Eurostat (UOE Data collection)

Additional notes:

* Total number of students independent of age, as percentage of 20-24 years old
BE: Data exclude independent private institutions, but these institutions are attended only by a very limited number of students.
DE, SI: Data exclude ISCED level 6
LU: Most tertiary students study abroad and are not included
CY: Most students in tertiary education study abroad and are not included in the enrolment data, but they are included in the corresponding population data. The participation rates are thus underestimated.
LU, JP: Data by age not available
IT, PL: Data by age in ISCED 6 not available, all ISCED 6 included in age above 24 years

Many internal and external factors have impact on participation in tertiary education.[191]

First of all, access to tertiary education depends on the demand for it. Some individuals understand the investment in their tertiary education as investment in the future. Educational investment is worthwhile for them in relation to economic and social returns with which it is connected. Individuals demand education and training as long as it produces a return to their investment in time and money.

There is also still a relatively strong link between class of origin and class of destination. Different social classes attach different values to education and training. Access to higher education therefore depends to an important extent on the education and occupational status of the parents and, more generally, at macro-level, on the degree of income socio-economic inequalities in a given country. Various social, financial and geographical barriers were identified as regards access of disadvantaged to tertiary education in individual countries. [192]

The government investment and regulations play important role in shaping access to tertiary education. The state is a large provider of higher education and it defines conditions for access, including number of admitted students, mainly by financing higher education. The state can also adopt strategies in relation to financial support to students with disadvantaged background.

[191] Mainly findings from Otero, M.S. and A. Mc Coshan (2005). *Study on Access to Education and Training.*

[192] See for example A. Forsyth & A. Furlong (2005). *Socioeconomic disadvantage and access to higher education.*

The impact of tuition fees at the level of access to tertiary education in Europe is limited, as shown in some studies.[193] Even where tuition fees have been introduced, they covered only a small proportion of the funding needs of higher education. There are other and more complex social issues that influence a decision to attend university; tuition fees are just one of them. For example, students from lower socio-economic backgrounds tend to choose shorter, cheaper, less prestigious and less risky educational opportunities. However, this is more about equity than about access.

Another factor which might correlate with participation in tertiary education is a strongly developed system of vocational education and training which in some cases can substitute the role which in other countries is fulfilled by the sector of tertiary/higher education.

Other factors likely to have an impact on access to tertiary education:

- Number of students leaving secondary education with qualification giving access to higher education;
- The nature of education and training system, in particular whether the country has strong system of vocational education and training that can function as an alternative to higher education or not;
- Demographic trends, in particular of people aged under 25.

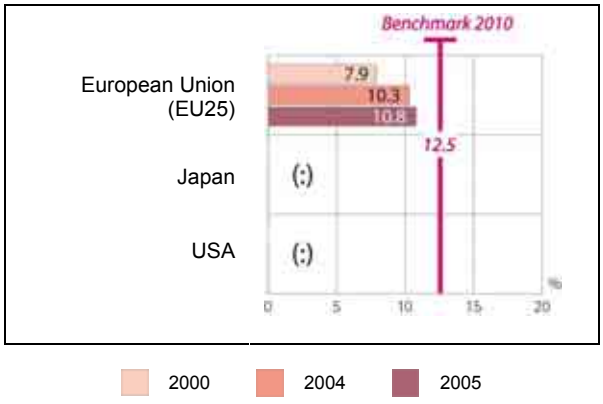
6.2 Participation of adults in lifelong learning

The European knowledge based economy needs a highly-trained and flexible labour force, updating its knowledge and skills when necessary. However, the participation of adults in lifelong learning still remains an area where much more effort of various stakeholders is needed.

6.2.1 Participation of adults in lifelong learning –EU benchmark

Because of the crucial importance to achieve the Lisbon goals, the area of lifelong learning was approved by (education) Council in 2003 as an area where the progress in the European Union should be monitored against the European reference level (benchmark). Moreover, the same target to increase the participation of adults aged 25-64 in lifelong learning to 12.5 % of this age group in 2010 builds also a part of the European Employment Strategy since 2003.

Chart 6.8: Lifelong learning – benchmark for 2010
(Percentage of population aged 25-64 participating in education and training in the four weeks prior to the survey, 2000, 2004 and 2005)



Source: DG Education and Culture. *Data source:* Eurostat (Labour Force Survey)

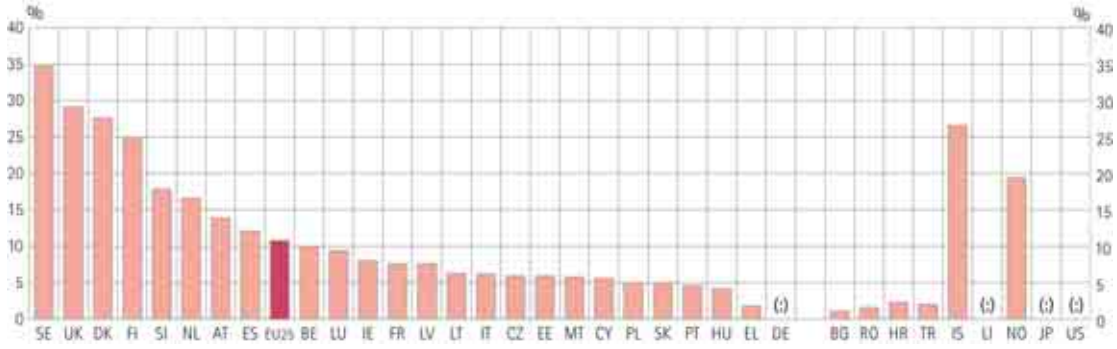
[193] F. H. Kaiser, J. Vossensteyn & J. Koelman (2001) *Public funding of higher education. A comparative study of funding mechanisms in ten countries.*

In 2005, an average of 10.8% of adult Europeans aged 25-64 participated in education and training activities over a period of four weeks in 2005 (Chart 6.8).

The four best performing countries were Sweden, Denmark, Finland and the UK, followed closely by Slovenia, the best performing new Member State, and the Netherlands and Austria. All remaining EU countries are still below the average performance level of 12.5%. Italy, Greece, Malta, Portugal, Slovakia and Hungary had participation rates at or below 5%. Among the candidate countries, participation rates in Bulgaria and Romania were at the extremely low level of less than 2%. In most countries women participated more in training and education than men.

Chart 6.9: Participation of adults in lifelong learning

(Percentage of population aged 25-64 participating in education and training in four weeks prior to the survey, 2005)



	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
2005	10.8		10	5.9	27.6	:	5.9	1.8	12.1	7.6	8.0	6.2	5.6	7.6	6.3	9.4	4.2	5.8

	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO	JP	US
2005	16.6	13.9	5.0	4.6	17.8	5.0	24.8	34.7	29.1	1.1	1.6	2.3	2.0	26.6	:	19.4	:	:

Data source: Eurostat Labour Force Survey – Spring results 2005

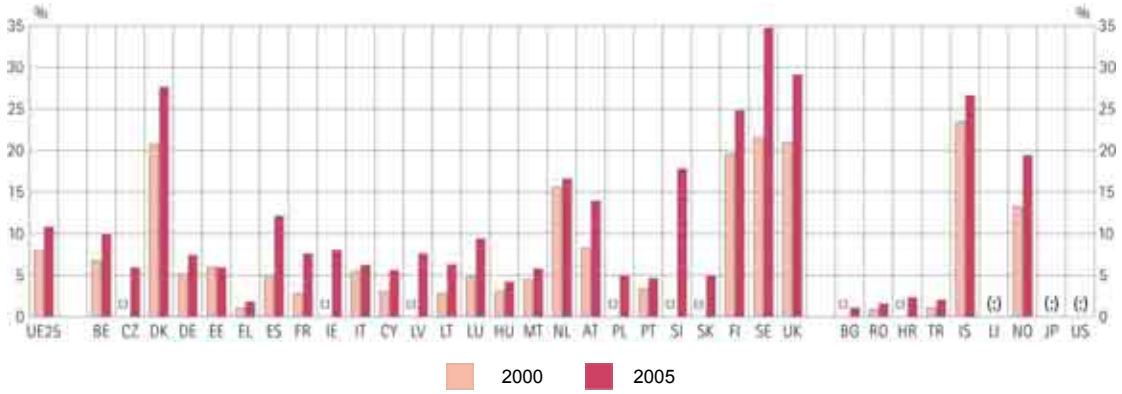
Additional notes:
- Due to implementation of harmonised concepts and definitions in the survey, breaks in time series: CZ, DK, EL, FR, IE, CY, LU, HU, AT, SI, SK, FI, SE, IS, NO (2003) , BE, LT, MT, PI, PT, RO (2004) and ES(2005).
- DE : data for 2004
- LU, MT and the UK (2005): provisional data.

When examining progress since 2000 concerning participation of adults in lifelong learning it must be considered that there were breaks in time series in many EU countries, especially between 2002 and 2003, but also in 2004 and 2005 which generally resulted in higher figures than in the years before (notably in France, Sweden and Spain).[194]

[194] Breaks in time series resulted from the changed definitions and modes of implementation of survey instruments.

Chart 6.10: Participation of adults in lifelong learning

(Percentage of population aged 25-64 participating in education and training in four weeks prior to the survey, 2000 and 2005)



	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
2000	7.9		6.8	:	20.8	5.2	6.0	1.1	5.0	2.8	:	5.5	3.1	:	2.8	4.8	3.1	4.5
Females	8.4		6.0	:	23.8	4.8	7.6	1.1	5.4	3.1	:	5.4	3.2	:	3.6	3.9	3.4	3.5
Males	7.4		7.6	:	17.9	5.6	4.1	1.1	4.5	2.6	:	5.5	3.1	:	1.9	5.7	2.7	5.6
2005	10.8		10.0	5.9	27.6	7.4	5.9	1.8	12.1	7.6	8.0	6.2	5.6	7.6	6.3	9.4	4.2	5.8
Females	11.7		9.7	6.4	31.0	7.0	7.5	1.7	13.1	7.9	9.4	6.6	6.1	10.0	7.6	9.5	4.8	4.8
Males	10.0		10.3	5.5	24.2	7.8	4.2	1.9	11.2	7.4	6.6	5.7	5.1	4.9	4.9	9.3	3.5	6.7

	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO	JP	US
2000	15.6	8.3	:	3.4	:	:	19.6	21.6	21.0	:	0.9:	:	1.1	23.5	:	13.3	:	:
Females	14.7	7.4	:	3.5	:	:	21.6	24.1	24.4	:	0.8	:	1.3	26.7	:	13.8	:	:
Males	16.4	9.2	:	3.3	:	:	17.7	19.2	17.7	:	1.0	:	0.8	20.4	:	12.8	:	:
2005	16.6	13.9	5.0	4.6	17.8	5.0	24.8	34.7	29.1	1.1	1.6	2.3	2	26.6	:	19.4	:	:
Females	16.7	14.6	5.6	4.7	19.6	5.2	28.6	39.7	33.9	1.1	1.7	2.3	2.6	29.7	:	21.0	:	:
Males	16.6	13.2	4.3	4.5	16.0	4.7	21.1	29.9	24.2	1.1	1.5	2.3	1.4	23.5	:	17.8	:	:

Data source: Eurostat (Labour Force Survey)

Additional notes:
Due to the implementation of harmonised concepts and definitions in the survey, information on education and training lack comparability with former years:

- from 2003 in CZ, DK, EL, IE, CY, HU, NL, AT, SI, FI, SE, NO, from 2004 in BE, LT, IT, IS, MT, PL, PT, UK and RO, and from 2005 in ES due to wider coverage of taught activities
- 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 characteristics, data lack comparability with former years in 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 (quarter 1 from 2003), AT (quarter 2 from 2003; from 2004 continuous survey – covering all weeks of the reference quarter).
The EU aggregates are provided from 1999, using the closest available year result in case of missing country data.

Mainly because of the above mentioned changes it can be expected that the EU reference level (benchmark) on participation of adults in lifelong learning will be reached in 2010. On the other hand, there are still countries where more progress should be achieved, and areas where further improvement must have priority, for example in order to reduce inequities.

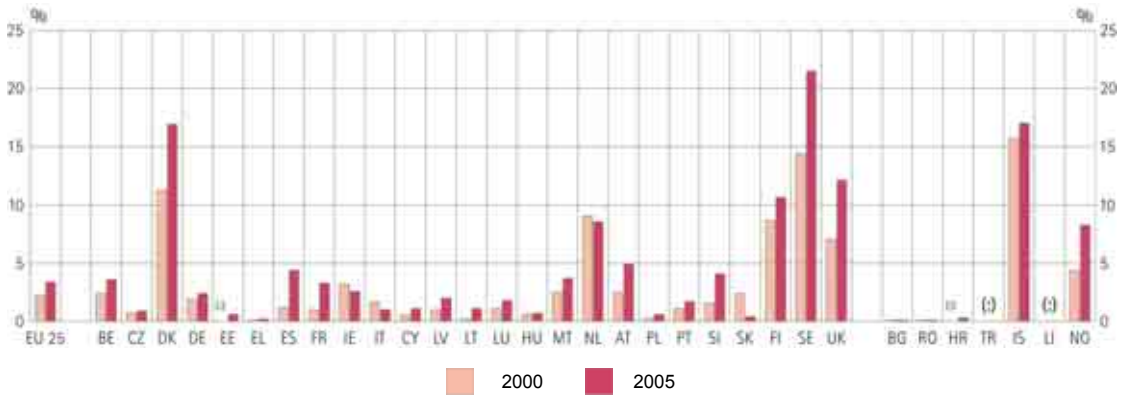
To achieve higher progress, eight Member States (Belgium, Estonia, Finland, Latvia, Malta, the Netherlands, Portugal and Spain) have set quantified national targets on participation in lifelong learning in their Lisbon National Reform Programmes 2005.

Participation of adults with low educational attainment in lifelong learning

Participation in education and training tends to be proportional to the level of prior education (Chart 6.11). In 2005 only 3.4 % 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 corresponds to less than one third of the average figure over all levels of education, and less than one seventh of the figure for those with high educational attainment. Typically, people with higher education levels are more easily reached by, and more receptive to, measures to encourage participation in education and training. The fact that many initiatives do not reach people with a low initial level of education is a key challenge for policy-makers.

Chart 6.11: Participation of adults with less than upper secondary education in lifelong learning

(Percentage of population aged 25-64 with less than upper-secondary education (ISCED 0-2) participating in education and training in the four weeks prior to the survey, 2000 and 2005)



	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU
2000	2.3		2.4	0.7	11.3	1.9	:	0.1	1.2	1.0	3.2	1.7	0.5	1.0	0.2	1.1	0.6
2005	3.4		3.6	0.9	16.9	2.4	0.0	0.2	4.4	3.3	2.6	1.0	1.1	0.0	0.0	1.8	0.7

	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO
2000	2.5	9.1	2.5	0.3	1.1	1.6	2.4	8.7	14.4	7.1	0.1	0.1	:	:	15.7	:	4.4
2005	3.7	8.6	4.9	0.6	1.7	4.1	0.0	10.7	21.5	12.1	0.0	0.0	0.0	:	17.0	:	8.3

Data source: Eurostat (Labour Force Survey)

Additional notes:
Due to the implementation of harmonised concepts and definitions in the survey, information on education and training lack comparability with former years:
- from 2003 in CZ, DK, EL, IE, CY, HU, NL, AT, SI, FI, SE, NO, from 2004 in BE, LT, IT, IS, MT, PL, PT, UK and RO, and from 2005 in ES due to wider coverage of taught activities
- 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 characteristics, data lack comparability with former years in 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 (quarter 1 from 2003), AT (quarter 2 from 2003; from 2004 continuous survey – covering all weeks of the reference quarter).
The EU aggregates are provided from 1999, using the closest available year result in case of missing country data.

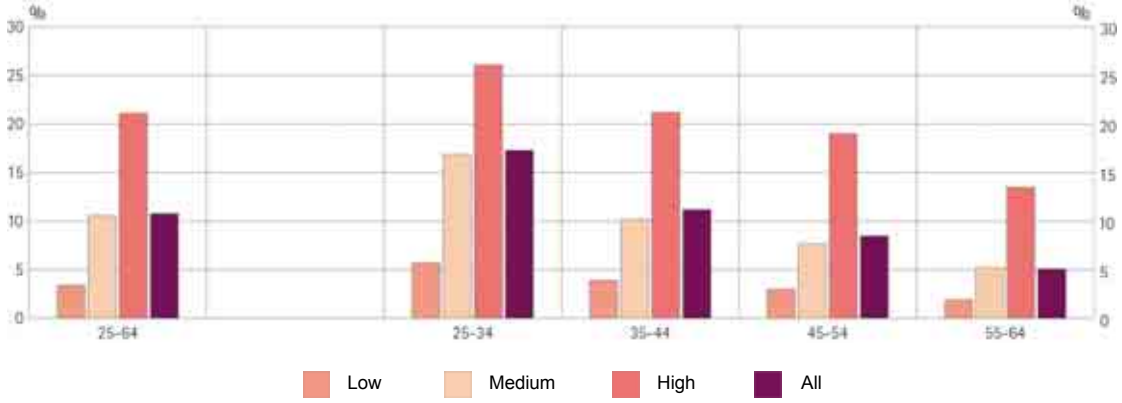
Countries with a high general participation rate in lifelong learning (Denmark, Sweden, Finland and the UK as well as Island) also register relatively high participation rates of people with low educational attainment. Results for these countries range from 10.7 % in Finland to 21.5 % in Sweden in 2005. Of the remaining countries, only the Netherlands, Austria and Spain as well as Norway exceed a participation rate of 4% in 2005.

Countries with a high general participation rate in lifelong learning have relatively small participation gaps between those with high and those with low prior educational attainment levels, while countries with low overall participation rates have wider gaps. Denmark and Sweden show the highest participation rate among people with a low education level and at the same time the smallest relative gap between the educational attainment levels.

Participation of older population in lifelong learning

As shown in the Chart 6.12, 25-34 year olds regardless which educational level they achieved participated mostly in lifelong learning in 2005. After 34 years, as the age increases the participation in lifelong learning decreases. Persons aged 55-64 years participate four times less than persons aged 25-34 years. The decrease is not so high, but also the older persons with tertiary education participate twice less in comparison with younger age cohorts with the same educational attainment.

Chart 6.12: Participation in lifelong learning by age and educational attainment (EU 25), 2005



Data source: Eurostat (LFS), 2005

Regional participation of adults in lifelong learning

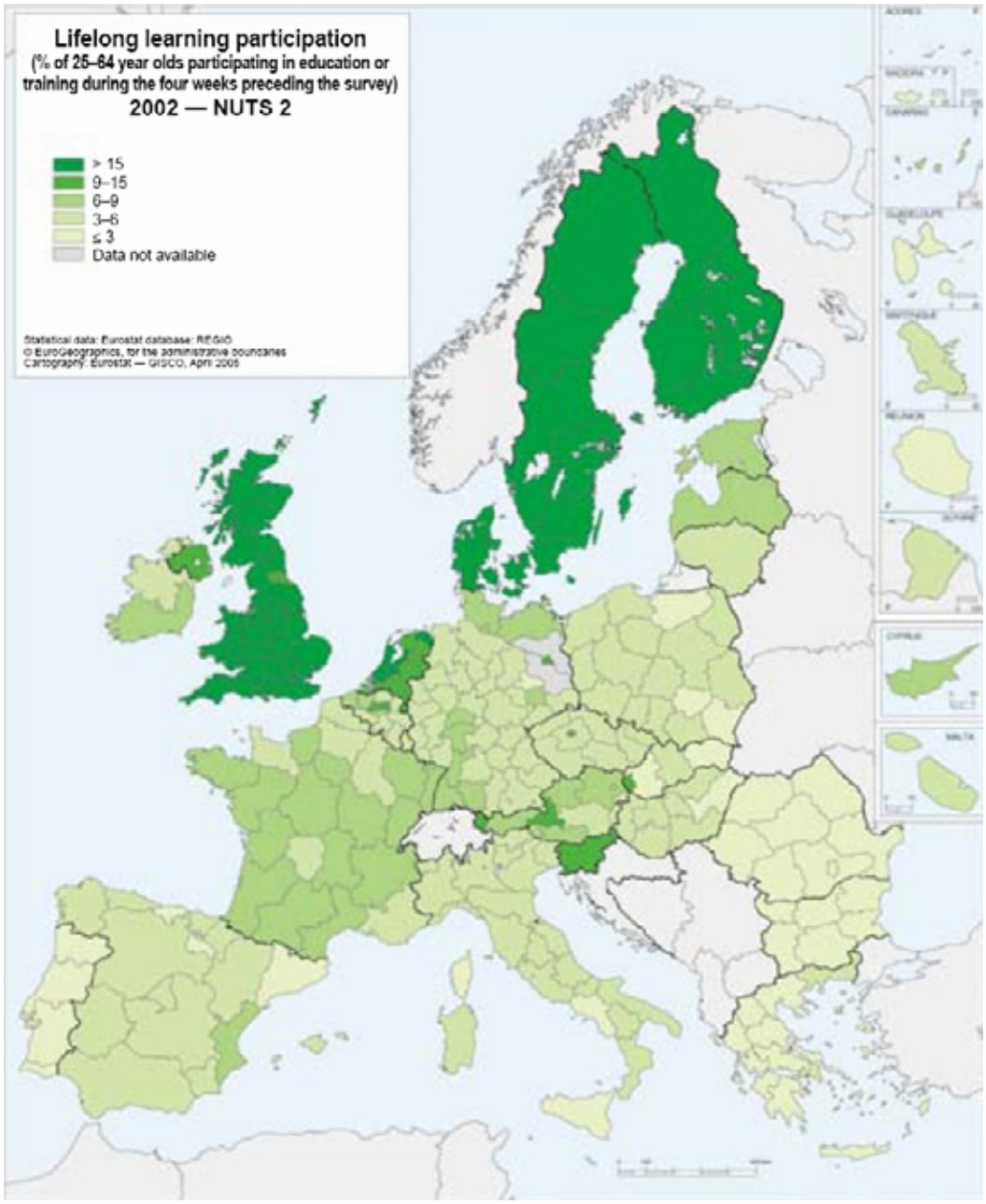
Regional data allows us to see the participation in lifelong learning in the EU from another perspective illustrating diverse levels of participation on a sub-national level.[195]

Participation in lifelong learning is high (over 15% or more) in all regions in Finland, Sweden, the UK and the Netherlands. The highest regional participation in lifelong learning within EU is situated in Övre Norrland in Sweden, with 33.6%. In practically all regions in Finland, Sweden, the UK and the Netherlands, the participation rates are above 15%, in Sweden even higher - close to or above 30%.

The participation rates are especially low in all regions in Greece (apart from North Greece), Bulgaria and Romania, in some regions even below 1%.

[195] Eurostat (2005) *Regions: Statistical yearbook 2005. Data 1999-2003.*

Chart 6.13: Participation of 25-64 year olds in lifelong learning by regions



Within countries, the highest participation rates in lifelong learning are often found in the capital regions. These regions are also most often those having the highest education attainment levels. In the Czech Republic, Praha has the highest percentage of lifelong learning participation, 9.8%. In Germany, the highest percentage is in Berlin, 9.9%; in Hungary in the capital region Közép-Magyarország, 6.5%; and in Poland in the capital region Mazowieckie, 5.9%.

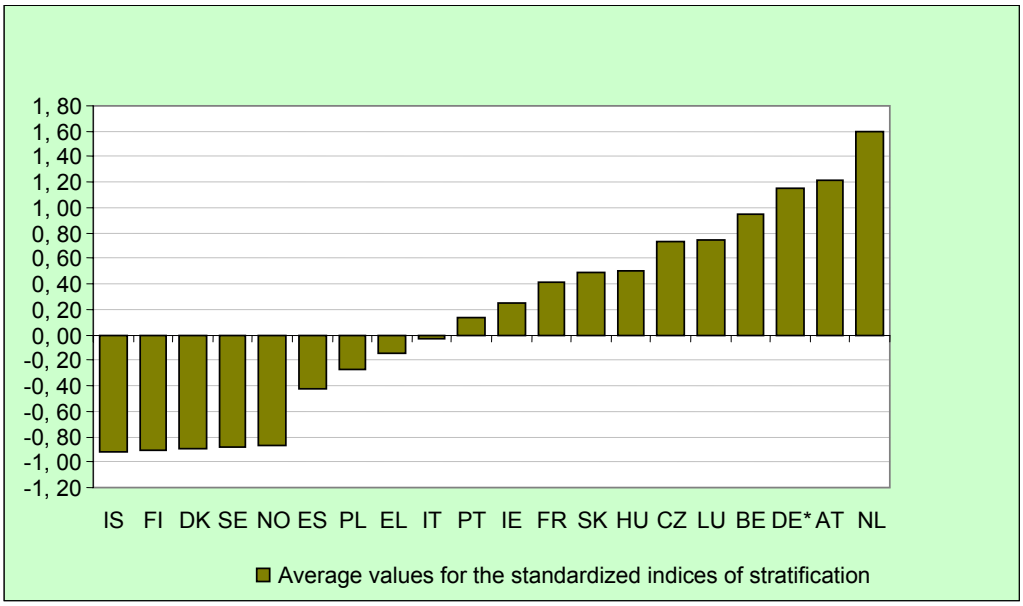
This is, however, not at all always the case. The region in Sweden with the highest participation rate, Övre Norrland, is the most rural part of Sweden. In France, the highest participation in lifelong learning is in Alsace, 8.7%. In Italy, Sardegna has the highest percentage, 6.1%, in the Netherlands Utrecht, 17.8% and in Austria Salzburg, 10.1%.

Increasing participation of adults in lifelong learning is therefore a more dimensional challenge of increasing participation rates of the groups with low educational attainment and older people, as well as of increasing participation rates in all regions of the country. Thus, lifelong learning strategy should be a genuine part of a regional development strategy.

Participation in lifelong learning and the stratification of systems of education and training

The diversity of the systems of education and training in individual European countries is understood as a part of Europe's cultural features. Based on the traditions and specific conditions the individual Member States tried to respond to the needs of individual citizens, economies and societies in the field of education and training in a different way. Some countries have a comprehensive, non-selective system of education and training, in other countries the systems start to be selective already at an earlier stage.

Chart 6.14: Index of stratification of educational systems



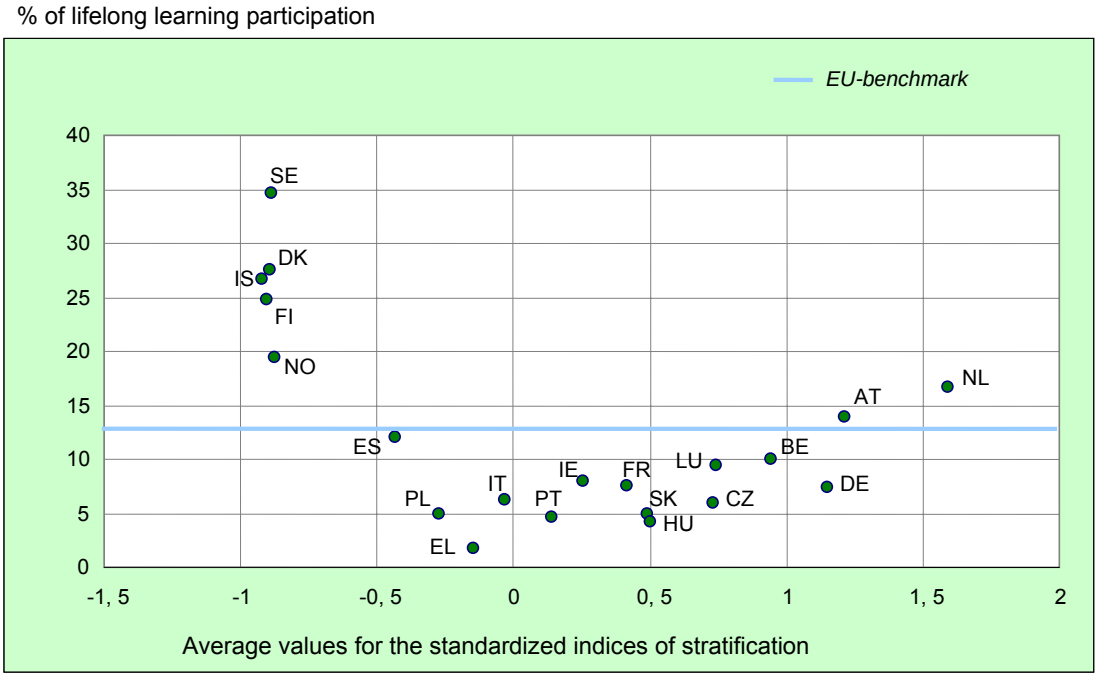
Source: DG Education and Culture; OECD index of stratification: Education at a Glance, 2005
Additional note: DE: data on participation in LLL from 2004

As shown in the Chart 6.14, from 18 Member States and two EEA countries for which data are available, two groups of countries can be distinguished. First group build of 9 countries has non-selective comprehensive systems of education and training with Nordic countries having the lead followed by Spain, Poland, Greece and Italy with considerable lower degree of comprehensiveness.

In the second group composed of 11 countries most selective systems of education and training are observed in the Netherlands, Austria, Germany, Belgium, Luxembourg and the Czech Republic.

When we relate the participation of 24 to 65 year olds in lifelong learning (4 weeks reference period) to index of institutional differentiation (see Chart 6.15) we can see a very distinctive group of Nordic countries with the education and training systems characterized with a very low institutional differentiation and high participation rates of adults in lifelong learning. However, also within this group of Nordic countries we can observe significant differences in participation rates in lifelong learning with highest rate in Sweden (about 35%) followed by Denmark, Island and Finland with participation rates around 25% and Norway with participation rate slightly below 20%.

Chart 6.15: Index of stratification of educational systems and participation of adults in lifelong learning[196]



Data source: Eurostat (Labour Force Survey – Spring results 2005)
OECD index of stratification: Education at a Glance, 2005

Additional note:
DE: data on participation in LLL from 2004

In a Dutch analysis a tentative hypothesis was put forward that in countries with comprehensive systems (low index of stratification) students receive a more general, academic education, but less specific preparation for the labour market, and therefore there is a higher need of an additional more specific training (lifelong learning) after their initial formal schooling.[197] According to the Dutch experts in this group of countries part of the lifelong learning of adults could be specific training to compensate for the relatively low labour market orientation of their education systems. However, this does not explain the differences in participation of adults in lifelong learning between individual Nordic countries.

In this connection it is necessary to stress that institutional differentiation might be only one factor influencing participation of adults in lifelong learning: There are also further factors like culture of learning, generally higher educational attainment of whole adult population ("Matthew effect" – those who have extensive competence initially are also the ones who increase their competence most) and financing available in individual countries which may have even stronger impact on participation rate.

[196] Index of stratification was developed by OECD. It takes into account four measures of stratification within education and training systems: number of educational tracks into which students can be sorted, the existence of separate provision of academic and vocational programmes, the age at which selection between tracks is made and the extend of grade repetition. Each of these measures are considered separately and then combined in a composite indicator.

[197] Dutch Ministry of Education, Culture and Science (2005). *Onderwijsprofiel van Nederland. Analyse en samenvatting van Education at a Glance 2005.*

6.2.2 Detailed analysis of participation of adults in lifelong learning - LFS ad hoc module on lifelong learning

The data from LFS ad hoc module on participation in lifelong learning from 2003 allow a more detailed analysis of the participation of adults in lifelong learning, especially of participation in formal education and training and in non-formal education.

Comparability of data with data used for the EU benchmark

According to the definition used in LFS ad hoc module on lifelong learning (2003), lifelong learning encompasses all purposeful learning activities, whether formal or informal, undertaken on an ongoing basis with the aim of improving knowledge, skills and competence. Participation in *formal education* (i.e. the regular educational system of each country), *non-formal education* (i.e. organised and sustained educational activities that do not correspond exactly to the definition of formal education) and *informal learning* (i.e. activities outside formal or non-formal education, of a low-level of organisation, such as self-study) is distinguished.

However, the comparability of data from LFS ad hoc module on participation in lifelong learning from 2003 with the data on participation of adults in lifelong learning covered by EU benchmark (12.5% in 2010) is limited because of at least two most significant reasons:

1) reference period taken into account by respondents in the surveys is different (four weeks before survey in standard LFS, 12 months before survey in LFS ad hoc module);
2) different interpretations of informal learning in individual countries.[198]

Higher expectations were also connected with data on informal learning. A long reference period -12 months from the time of the interview- was selected because it was expected that the coverage of irregular learning events could be better than for a short reference period. But, on the other hand, it might be harder for the respondent to remember learning activities further back in time.

Although a statistical definition of informal learning exists, the field was probably less clear cut from the respondent's point of view and some cultural differences may exist in the interpretation of what is learning and what is not. The differences reach from lowest participation rates in informal learning – 6.0% in Hungary and 14.2% in Greece to more than 80 % or nearly 80 % in Austria (85.6%), Luxembourg (80.9%) and Slovenia.[199] As shown in the Chart 6.16, in some countries, the total rate of participation in lifelong learning is much higher only because of reported extraordinary higher participation in in-formal learning.[200]

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[198] However, we can expect a quite high degree of comparability of data with data from Adult Education Survey developed by Eurostat which is now in the phase of implementation in Member States (two Member States already implemented the survey in 2005, further will do so in 2006 and 2007).

[199] Participation rates in informal learning are also linked to educational attainment: the rates vary from 55% (high attainment) to 18% (low attainment). Seven countries show a rate for the low attainment population of less than 10%. However, in some countries more than half of the low educated population declared some form of informal learning: Finland (54%), Slovenia (65%), Luxembourg (67%) and Austria (85%). For the population with a high level of educational attainment, the overall preferred type is always self-studying with printed material, except in Finland were learning centers are favored. The second preferred media is computer-based informal learning, except in Slovenia and Austria (where broadcasting is second), in Finland (printed materials) and in Lithuania and Spain (learning centers are second).

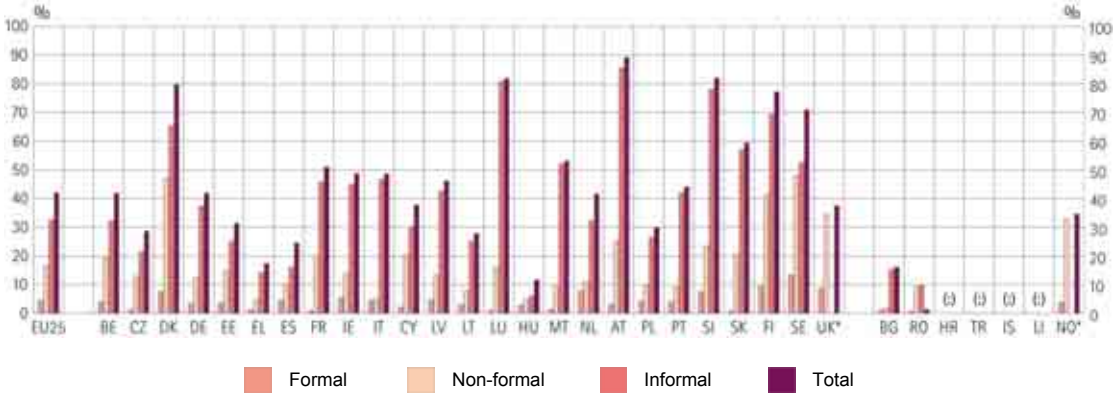
[200] The survey identified four non exclusive forms of informal learning: • Self studying by making use of printed material (e.g. professional books, magazines and the like); • Computer based learning/training; online internet based web education; •Studying by making use of educational

Participation of adults in all kinds of learning

42 % of all adults aged 25 to 64 participated in any kind of lifelong learning in 2003 when we analyze data from the LFS ad hoc module on participation of adults in lifelong learning using a 12 months reference period.

The above mentioned EU 25 figures (42.0% in 2003) on total participation of adults aged 25 to 64 in any kind of lifelong learning from the LFS ad hoc module on participation of adults in lifelong learning using a 12 months reference period are about four time higher than the data on participation of the same group when using the EU benchmark 4 weeks reference period (9.2% in 2003 and 10.8% in 2005).[201]

Chart 6.16: Rate of participation (%) in lifelong learning by kind of learning, 2003



	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU
Total	42.0		**41.9**	28.7	79.7	41.9	31.4	17.4	24.5	51.0	48.7	48.6	37.8	46.2	27.8	81.9	11.7
Formal	4.5		4.0	1.4	7.7	3.4	3.7	1.3	4.7	0.9	5.4	4.5	2.1	4.8	3.0	1.0	2.9
Non-formal	16.8		19.5	12.9	47.1	13.1	14.8	4.9	10.3	20.1	14.1	5.1	20.6	13.4	7.8	15.9	4.8
Informal	32.5		32.3	21.4	65.6	37.3	25.1	14.2	16.0	45.9	45.0	46.8	30.2	42.6	25.1	80.9	6.0

	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK*	BG	RO	HR	TR	IS	LI	NO*
Total	53.2	41.6	89.2	30.0	44.1	82.0	59.5	77.3	71.0	37.6	16.1	10	:	:	:	:	34.7
Formal	1.4	7.8	3.0	4.1	4.0	7.6	1.0	9.3	13.3	8.4	1.2	1.4	:	:	:	:	3.9
Non-formal	9.4	11.0	25.3	9.8	9.3	23.5	20.5	41.3	48.1	36.6	1.7	0.6	:	:	:	:	32.9
Informal	52.0	32.3	85.6	26.6	42.1	78.1	57.1	69.5	52.6	:	15.4	9.1	:	:	:	:	:

Data source: Eurostat LFS, ad-hoc module on Lifelong Learning 2003. Target population: 25-64 years, reference period: 12 months.

Additional notes :

For some countries it is more than 100% because some persons participated in more than one learning activity
(*) Informal learning not included

As regards individual Member States, the lowest participation rates in all kinds of learning were observed in Hungary (11.7%) and Greece (17.4%), the highest (from 79.7% to 89.2%) in Austria, Slovenia, Luxembourg and Denmark. High participation for the latter countries was mainly due to higher participation in informal learning, except in Denmark where non-

broadcasting or offline computer based material (audio or videotapes); • Visiting facilities aimed at transmitting educational content (library, learning centers etc.). Although informal learning may be according to EU definition used in the Communication on lifelong learning both intentional or incidental, here for operational reasons only informal learning activities were taken into account which are intentional. As shown from the outcomes of the survey, this limitation did not solve the problem of the quality of the data on informal learning.

[201] Data are analyzed based on findings of the study "*Analytical report on lifelong learning*," prepared for the Commission by AGILIS (only draft in 2006).

formal education also had high participation. Extremely low participation rates were found in Bulgaria and Romania.

The participation rate of males in all kinds of learning in the EU25 was slightly higher than that of females (42.8% as opposed to 41.1%). Country-wise however, the rate for males is not always higher. The largest differences in favour of males were observed in France (54.8%-males, 47.4%-females) and Cyprus (40.4%-males, 35.4%-females). On the other hand, females participated in lifelong learning more in Ireland (44.1%-males, 53.2%-females), Lithuania (23.5%-males, 31.6%-females), Latvia (42.2%-males, 49.8%-females) and Finland (73.7%-males, 80.9%-females).

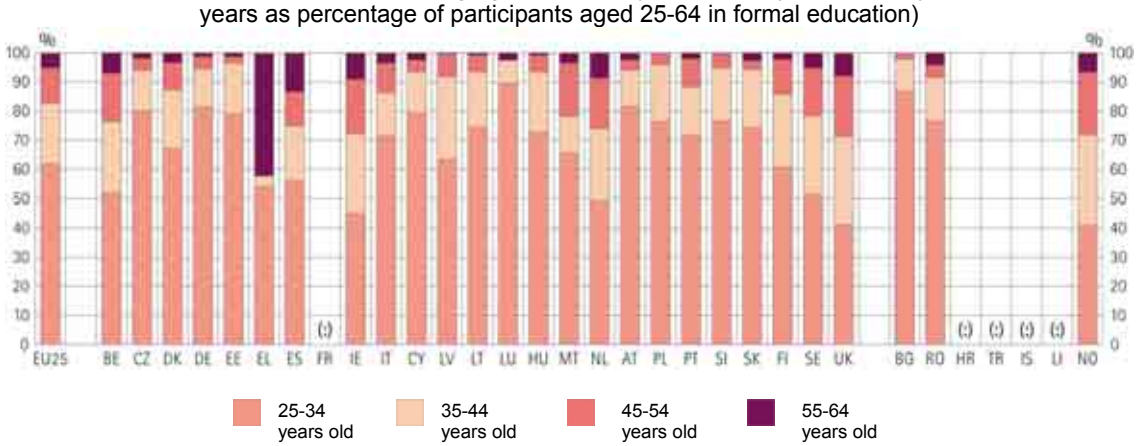
Regarding age, there is a decrease in participation as age increases (from 50.2% for 25-34-year-olds to 29.5% for 55-64-year-olds in the EU25). This pattern was noted for both genders and most countries. Exceptions were Denmark, Luxembourg, Finland, Slovenia, Sweden and Switzerland, where participation decreases slowly or does not decrease with age (only in Austria is participation of 55-64–year-olds even higher than participation of 25-34-year-olds).

Participation in formal education

Formal education plays only a marginal role within the lifelong learning perspective of adults in comparison to non-formal and informal learning.

Chart 6.17: Age distribution (%) of participants in formal education, 2003

(Participants in formal education in the age groups 25-34 years, 35-44 years, 45-55 years and 55-64 years as percentage of participants aged 25-64 in formal education)



	EU25		BE	CZ	DK	DE	EE	EL	ES	FR*	IE	IT	CY	LV	LT	LU	HU
25-34	10.7		8.1	4	20.6	11.8	11	4.2	9.6	3.3	8.8	12	6.1	11.6	8.2	3.4	8
35-44	3.6		3.8	0.7	6.2	1.9	2.4	0.3	3.2	:	5.3	2.5	1.1	5.2	2.1	0.3	2.3
45-54	2.1		2.6	0.2	2.9	0.6	0.3	0	2	:	3.6	1.7	0.3	1.4	0.6	0	0.6
55-64	0.9		1.1	0.1	1	0.2	0.2	:	2.3	:	1.8	0.6	0.2	0.1	0.1	0.1	0.1
TOTAL	4.5		4	1.4	7.7	3.4	3.7	1.3	4.7	0.9	5.4	4.5	2.1	4.8	3	1	2.9

	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO
25-34	3.6	14.9	9.7	11.6	10.3	22.1	2.6	23.3	27.2	13.3	3.9	3.6	:	:	:	:	6.1
35-44	0.7	7.5	1.5	3	2.4	5.3	0.7	9.6	14.3	9.7	0.5	0.7	:	:	:	:	4.6
45-54	1	5.2	0.4	0.6	1.4	1.4	0.1	4.6	8.7	6.7	0.1	0.2	:	:	:	:	3.2
55-64	0.2	2.7	0.3	0	0.3	0.1	0.1	0.9	2.8	2.6	:	0.2	:	:	:	:	1
TOTAL	1.4	7.8	3	4.1	4	7.6	1	9.3	13.3	8.4	1.2	1.4	:	:	:	:	3.9

Data source: Eurostat LFS, ad-hoc module on Lifelong Learning 2003. Target population: 25-64 years, reference period: 12 months.
*A reference period of 4 weeks was used instead of 12 months

As shown in the Chart 6.17, 4.5% of the total population aged 25-64 years participated in formal education that means in programmes of study covered by the regular educational system of each country. Rates slightly above or slightly below the EU average were observed in most countries; the exceptions were Sweden, Finland, the UK, the Netherlands and Denmark where participation in formal education was significantly higher, from 7.7% in Denmark to 13.3% in Sweden. Of the new Member States, Slovenia shows highest participation rate.

High participation of adults in formal education in some countries might be explained by flexibility of the formal systems of education and training as regards how the courses are organised in these countries (for example evening classes, part-time classes, distance education, validation of non-formal and informal learning) but also by the fact that these countries tried to reduce various economic, social and cultural barriers which hindered higher participation of adults in formal education.

About 80 % of all participants in formal education belonged to the youngest generation of adults (25-34 years old) in the Czech Republic, Germany, Estonia, Cyprus, Luxembourg and Austria as well as in Bulgaria, whereas the oldest generation (55-64 years old) represented slightly more than 40 % of participants in formal education in Greece and about 10% in Spain, Ireland, the Netherlands and the UK followed by Belgium and Sweden (less than 10%). In the EU, the oldest generation participated in formal education about ten times less than the youngest generation of adults.

Participation in formal education by educational attainment

Persons with high educational attainment profit from participation in formal education more than medium and low educated[202]. High participation in formal education might also be explained by postponed participation of young people in tertiary education in some of the countries with highest participation rates as high participation in formal education is associated with high educational attainment.

Participation in formal education by employment status

Unemployed and inactive persons participated more in formal education than persons in employment (5.9% and 6% respectively, as compared to 4%). The same pattern was observed in almost all countries. Exceptions were Hungary, Poland and Slovenia. Participation in formal education in Hungary and Poland was higher for the employed persons than for the unemployed and inactive. In Slovenia the employed persons participated in formal education as much as the unemployed and more than economically inactive ones.

The highest participation of the unemployed persons in formal education was observed in Sweden, Finland, UK and the Netherlands, but it was higher than EU 25 average even in countries with a generally low average educational level and high unemployment rates, like Portugal and Spain (7.5% and 7.2% respectively), as well as in Belgium, Ireland, Slovenia and Italy. The Swedish rate (27.5%) is almost five times the EU25 average, while in the other above-mentioned countries the rate is almost or more than twice the EU25 average. In contrast, participation in formal education of adult population is very low in France, Greece, Czech Republic, Hungary and Romania.

[202] Three levels of educational attainment are distinguished: low which corresponds pre-primary, primary and lower secondary education (ISCED levels 0, 1, 2); medium which corresponds to upper secondary and post secondary non-tertiary education (ISCED levels 3 and 4) and high which corresponds to tertiary education (ISCED levels 5 and 6). More information on ISCED97 is available at the address http://www.uis.unesco.org.

Relatively high participation of unemployed and inactive persons in formal education might be explained by their awareness of the fact that missing or low formal qualification is a barrier for them which hinders their access to employment, or by the fact that it is difficult to combine employment and study/formal education.

As regards the participation by gender, females (employed as well as unemployed) participated more in formal education than the respective male groups, while those men who were inactive had higher rates of participation than inactive women.

Participation in non-formal education

Data from LFS ad hoc module on participation in lifelong learning show that participation in non-formal education defined as organised and sustained educational activities that do not correspond exactly to the definition of formal education was almost four times more frequent than participation in formal education in 2003.

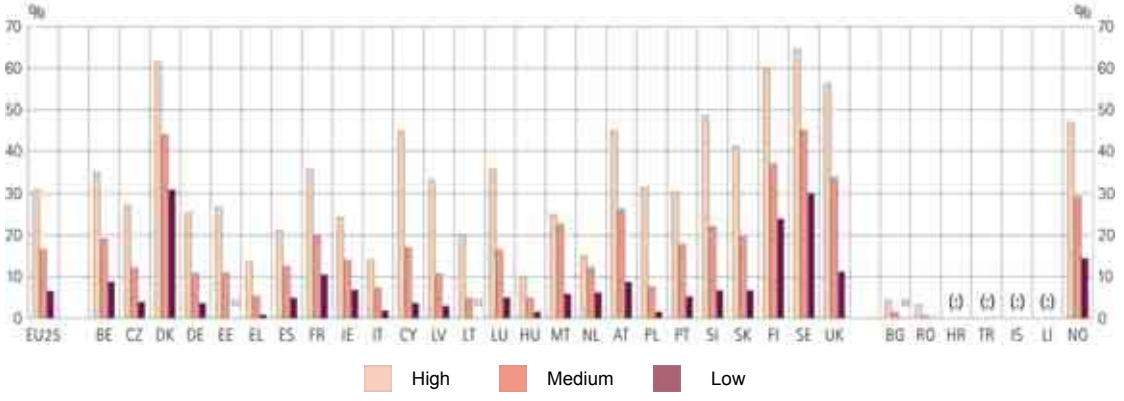
Overall participation in non-formal education was 16.5% in the EU25. The highest rates (over 40%) of the adult population were observed in Sweden, Denmark and Finland; the lowest were found in Italy (5.1%), Greece (4.9%), Hungary (4.8%), Bulgaria (1.7%) and Romania (0.6%).

Participation in non-formal education by educational attainment

Person with high educational attainment profit from participation in non-formal education much more than medium and low educated. In 2003, 31% of persons with higher educational attainment, in comparison to 16% with medium educational levels and 7% with lower than upper secondary education, followed non-formal education. The participation rate of the highly educated was more than or nearly 60% in Sweden, Finland, Denmark and the UK.

Although the Nordic countries also are characterized by higher participation rates of the population with lower educational attainment, the participation of low educated in non-formal education was still half that of those with high educational levels.

Chart 6.18: Participation of 25-64-year-olds in non-formal education by educational attainment (%), 2003



	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU
High	30.9		34.9	27.2	61.4	25.3	26.8	13.4	21.0	35.4	24.4	14.1	44.7	33.3	20.2	35.6	10.1
Medium	16.4		19.1	12.1	43.9	10.8	10.8	5.3	12.5	19.9	14.0	7.3	17.0	10.7	4.8	16.4	4.9
Low	6.5		8.7	3.9	30.9	3.6	:	0.8	4.9	10.5	6.8	1.8	3.6	2.9	:	5.0	1.5

	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO
High	25.0	15.0	45.0	31.5	30.4	48.6	41.2	59.8	64.4	56.3	4.3	3.2	:	:	:	:	47.0
Medium	22.6	12.2	26.3	7.6	17.8	22.1	19.7	37.0	45.1	33.7	1.4	0.5	:	:	:	:	29.2
Low	5.8	6.2	8.7	1.5	5.2	6.7	6.7	23.9	30.1	11.2	:	0.1	:	:	:	:	14.4

Source: Eurostat (Labour Force Survey, Ad hoc module on LLL), 2003. Target population: 25-64 years, reference period: 12 months.

The difference in participation rates between highly educated and low educated people is sometimes extremely significant: in Lithuania, Poland, Cyprus and Latvia, the proportion participating in non-formal education is more than ten times higher for highly educated people than for the low educated ones. This ratio drops below two only in Denmark and in Sweden. In Greece, Spain, Italy, Lithuania, Malta and Hungary this difference is reduced, but at the same time higher rates of non participants are registered.

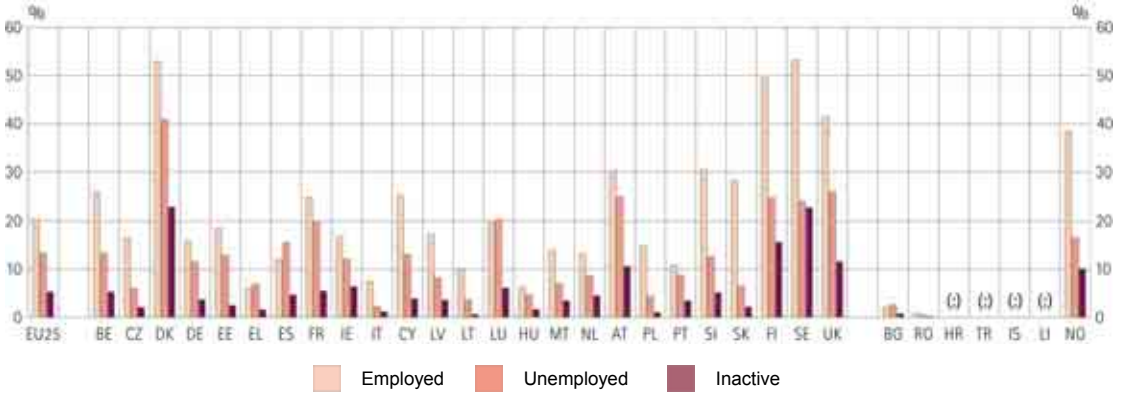
Participation in non-formal education by gender

Within the EU, males participated in non-formal education as much as females. In Sweden, Latvia and Finland more females than males participated in non-formal education.

Participation in non-formal education by employment status

As regards the working status, 21% of the employed, 14% of the unemployed and 6% of the inactive participated in some kind of non-formal education in the EU25.

Chart 6.19: Participation of 25-64-year-olds in non-formal education by employment status (%), 2003



	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU
Employed	20.6		26.1	16.6	53.0	16.3	18.5	6.1	12.0	24.9	17	7.4	25.4	17.2	9.9	19.6	6.3
Unemployed	13.5		13.3	6.0	40.9	11.7	12.9	6.9	15.5	19.8	12.0	2.2	13.0	8.2	3.6	20.3	4.7
Inactive	5.6		5.3	2.1	22.9	3.9	:	1.6	4.7	5.5	6.3	1.2	3.9	3.6	:	6.0	1.7

	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO
Employed	13.9	13.2	30.2	14.9	10.9	30.5	28.5	49.5	53.2	42.4	2.0	0.8	:	:	:	:	38.4
Unemployed	:	8.7	25.0	4.4	8.8	12.6	6.5	24.8	23.9	26.4	2.6	0.4	:	:	:	:	16.5
Inactive	3.5	4.5	10.6	1.0	3.5	5.2	2.2	15.6	22.9	13.7	0.8	0.2	:	:	:	:	10.1

Source: Eurostat (Labour Force Survey, Ad hoc module on LLL), 2003, Target population: 25-64 years, reference period: 12 months.

In most Member States the employed persons participate more than the unemployed and inactive persons. Much more than the EU average, about half of the employed persons , participated in non-formal education in Nordic countries, followed by about 40% in the UK and by a group of three countries – Slovenia, Austria and Slovakia – with participation rates of about 30%.

This means that the market failure increases still further the inequalities between those with high and low educational attainment caused by initial education. Only a few countries (Spain, Greece, Luxembourg, Austria and Portugal) record similar participation rates for the employed and unemployed population.

Employer support to education and training is demonstrated by the fact that non-formal education took place during paid working hours for 92.2% of the participants in the EU25. However, the extent of this support is neither very large nor similar in all countries.

Lower participation of unemployed and inactive in non-formal learning should be seen in relation with predominant role of formal education for this group of population as shown above. However, also in this area the situation in individual countries differs. The participation of the unemployed persons in non-formal education was in some countries much higher than the EU average: about 40% in Denmark and 20% or more in the UK, Sweden, Finland, Austria, France and Luxembourg.

Even worse is the situation of the inactive population. Only in Austria, the UK, Finland, Denmark and Sweden does more than one inactive citizen in ten participate in non-formal education.

Time spent in non-formal education

The average time spent in non-formal education per individual was 84 hours in the EU25. The volume (hours) of participation of females was slightly higher than volume of participation of males. The volume also decreases with age: it declined faster from the 25-34 to the 35-44 age groups, and then more slowly for the rest of the groups.

The countries with lower participation rates of individuals record the highest volumes of learning expressed in hours per participant (ranging from 156hrs to 105hrs on average in Hungary, Spain, Portugal, France and Germany). In some of these countries it might be connected with literacy programmes offered to illiterate adults, which are usually characterized by longer duration. On the other hand, Poland, United Kingdom, Ireland and Slovakia had on average the lowest consumption of non-formal education (42hrs, 41hrs, 39hrs and 38hrs on average respectively).[203]

Table 6.1: Mean volume (hours) of participation in non-formal education per participant, 2003

	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU
Total	84		83	50	71	105	59	85	130	115	39	63	54	63	58	51	156
Males	80		83	43	69	110	65	82	118	98	37	65	57	50	60	49	139
Females	87		83	58	73	100	56	88	141	134	41	62	52	69	58	52	169

	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO
Total	77	86	86	42	126	46	38	57	53	41	79	82	:	:	:	:	48
Males	88	81	87	43	105	47	33	56	57	42	74	98	:	:	:	:	52
Females	62	92	86	42	143	45	44	57	50	41	83	71	:	:	:	:	44

Source: Eurostat (Labour Force Survey, Ad hoc module on LLL), 2003, Target population: 25-64 years, reference period: 12 months.

Although low educational attainment was associated with slightly higher volumes of participation, the volume is practically the same over the three educational attainment levels. Exceptions were observed in Portugal, Germany and Hungary. For the former two countries the volume of participation was much higher for the low level, while in Hungary the highest intensity of participation in non-formal education was noticed in those with medium level.

The impact of the working status of the participants on the intensity of their participation is more important than their educational attainment. The volume of training in which the

[203] A new indicator on adult learning is proposed based on volume of participation in education and training in OECD (2005). *Promoting Adult Learning*.

unemployed participate is in most countries nearly three times higher than the training of employed people.

Participation in non-formal education by gender and age

Females spent more hours in non-formal education than males.

There is also a decrease in participation as age increases. Participation in non-formal education decreased slightly between 25-34 and 35-44-year-olds, a little more for 45-54-year-olds and considerably for 55-64 year olds. The same pattern was noticed in most countries and in both sexes.

Participation in non-formal education by field of study

As regards the field of study, 17.15% of all participants participated in computer science courses. Highest participation rates (above 20%) were recorded in Austria, Belgium, Denmark, Greece, Spain, Ireland, Italy and Luxembourg. Only 7.2% of all participants attended language courses, with highest participation rates in the Czech Republic (22.5%), followed by Hungary, Luxembourg, Latvia and Austria.

6.2.3 Citizens' views on continuing training

The Eurobarometer[204] on vocational training which was conducted in 25 Member States in 2004 shows that one in five Europeans intends to do more training in the near future, and one in five intends to do less. About two in five will undertake the same amount of training as last year. The main reasons for doing less training in future are: many people are not aware of the need for new skills for their work (26%); some do not have the time (20%); some feel appropriate training is not on offer (18%); and some think the employers do not give the time or funding (17%).

A large majority of those who followed training reported that the training addressed their needs completely (24%) or fairly well (59%). The most dissatisfied group are unemployed people; 11% felt training did not meet their needs at all.

The main reason for undertaking training was to develop skills generally (48%). Specialised training was chosen less often: development of computer skills (14%) or foreign language skills (5%).

Help, advice or guidance on training and job issues is revealed as a strong instrument in promoting training. Those who received guidance were much more likely to undertake training. The primary reason for receiving guidance was to learn new skills (63%).

The survey results show that making time available during working hours would encourage citizens to undertake more training (reported by 30% of the citizens), but the main incentive seems to be financial support (39%). In particular in the new Member States, funding of training by the employer and support by public measures (e.g., learning accounts, vouchers, and tax relief) could increase participation in continuing vocational training. Moreover, recognition of certified skills and qualifications would also convince citizens to undertake more training.

[204] European Commission (2005). *Special Eurobarometer 216 "Vocational Training"*.

However, as concluded in a recent OECD study[205], adult learning is a complex policy issue. Different stakeholders are involved in the policy definition and design process, such as ministries of education, labour and welfare, the social partners and other agencies. Different types of stakeholders and levels of government may result in conflicting interests, policies that run counter to the objectives of improving adult skills, and wasteful public expenditures.

6.2.4 Participation of adults in lifelong learning in the USA

According to a survey conducted in the USA in 2003[206], 40% of adults participated in some type of adult education (according to the US definition of formal education)[207] for work-related reasons during a 12-month period in 2002-03.

33% participated in work-related courses, 9% were in a college degree program, 2% were in a vocational degree/diploma program, and 1% had an apprenticeship.

58% of adults participated in informal work-related learning activities (Table 7 in Annex 1). Among adults who were employed in the past year, 56% participated in on-the-job demonstrations, and 43% received supervised training or mentoring. Among all adults, 31% did self-paced study using books, manuals, audiotapes, or videos; 23% attended conferences, trade shows, or conventions; 21% attended brown-bag or informal presentations; and 21% did self-paced study using computer-based software tutorials.

75% of adults who were employed in the past year participated in some type of informal learning activity; and across each of the informal activities measured, those adults who were employed in the past year were more likely to have participated than those who were unemployed in the past year.

Adults with lower education levels were generally less likely than those with more education to participate in various types of formal and informal work-related educational activities. American researchers[208] relate these findings to the fact that adults with a bachelor degree or higher are more likely than those with less education to be in professional or managerial occupations, which require higher levels of continuing education. The data show that among adults employed in the past year, those in professional or managerial occupations were most likely, and those in the trades[209] were least likely, to have participated in formal or informal work-related learning activities. In addition, younger adults were generally more likely than older adults to participate in formal and informal work-related adult education.

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[205] OECD (2005). *Promoting Adult Learning*.

[206] Data come from the Adult Education for Work-Related Reasons (AEWR) survey of the 2003 National Household Education Surveys Program (NHES). The survey was conducted by random-digit-dial telephone interviewing of the civilian, non-institutionalized population ages 16 and older who were not enrolled in elementary or secondary school at the time of the survey. Adults were asked about their work-related educational activities and experiences over the previous 12-month period. The survey defined work-related activities in terms of formal and informal learning activities that are done for reasons related to work. Some similarities could be found with EU LFS ad hoc module on LLL.

[207] Formal types of work-related adult education are defined by the presence of an instructor, whereas informal adult learning activities are defined by the absence of an instructor.

[208] B. Kleiner, P. Carver, M. Hagedom & Ch. Chapman (2005). *Participation in Adult Education for Work-Related Reasons: 2002-03. Statistical Analytical report*.

[209] Trades include mechanics, construction workers, transportation workers, etc.

Among employed adults, professionals and managers were more likely than those in service, sales, or support occupations and those in the trades to have participated in some type of formal work-related adult education and informal work-related learning activities.

The bivariate and multivariate analyses conducted for this report revealed that the various participation rates in formal and informal work-related adult education were affected by a complex interplay of factors, including age, education level, and types of occupation.

VII EARLY SCHOOL LEAVERS

Young people who leave education without recognised qualifications are less likely to participate in lifelong learning and face a disadvantage in the labour market in today's knowledge-based society. Their personal and social development is curtailed and they are at increased risk of poverty and social exclusion.

One indicator is used for measuring progress in the area of early school leavers:

- *Share of the population aged 18-24 with only lower-secondary education and not in education or training*[210]

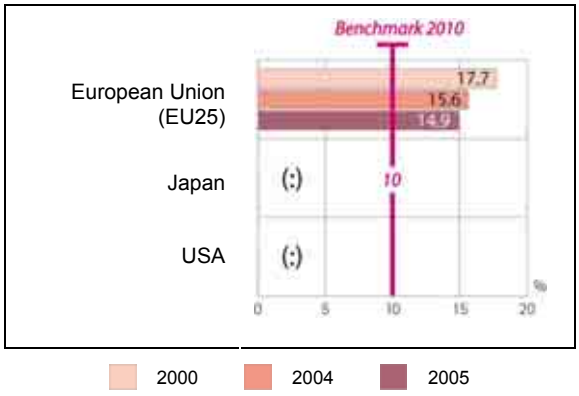
Because of its significance, this indicator was also chosen by (education) Council as a basis for a benchmark on early school leavers. Simultaneously, the same target to reduce early school leaving was also included in the European Employment Strategy in 2003.

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

This indicator is of direct relevance for the objective of "encouraging young people to remain in education or training after the end of compulsory education", but it does not cover the whole spectrum of issues connected with this objective. There is also a close link to another objective covered by the EU benchmark, namely on upper secondary completion, analysed in Chapter II of this report.

In order to explain the complexity of the phenomenon of early school leaving in more detail a few additional context indicators are used.

Chart 7.1: Early school leavers – benchmark for 2010
(Share of the population aged 18-24 with only lower-secondary education and not in education or training, 2000, 2004 and 2005)



Data source: Eurostat (Labour Force Survey)

[210] The information collected relates to participation in all forms of education or training. It includes initial education, further education, continuing or further training, training within the company, apprenticeship, on-the-job training, seminars, distance learning, evening classes, etc. It includes also courses followed for general interest and may cover all forms of education and training as language, data processing, management, art/culture, and health/medicine courses. However, the quality and comparability of data collected for this indicator by LFS is in many countries influenced by breaks in time series, small sample sizes or changes in another surveys characteristics. Because of small sample size for early school leavers within LFS the data fluctuate especially in the best performing countries. Eurostat plans to solve this problem by using annual data for calculating ratios.

In 2005, the average ratio of early school leavers was 14.9 %, this is 1 percentage point lower than in 2004. However, at the current rate of improvement, the benchmark of no more than 10% early school leavers will not be reached by 2010.

Chart 7.2 shows the share of early school leavers by country. The Czech Republic, Denmark, Lithuania, Austria, Poland, Slovakia, Finland and Sweden, and Norway, all have rates of early school leaving well below the European reference level (benchmark) for 2010 (no more than 10%). However, data for Denmark, Lithuania and Norway show a high degree of variations of results over time.

The majority of new Member States generally perform much better than the EU25 average in the area of early school leavers.

Chart 7.2: Share of the population aged 18-24 with only lower-secondary education and not in education or training, 2005

	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
2005	14.9		13.0	6.4	8.5	:	14.0	13.3	30.8	12.6	12.3	21.9	18.1	11.9	9.2	12.9	12.3	44.5

	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO	JP	US
2005	13.6	9.1	5.5	38.6	4.3	5.8	8.7	8.6	14.0	20.0	20.8	4.8	51.3	26.3	:	4.6	:	:

Data source: Eurostat (Labour Force Survey), 2005

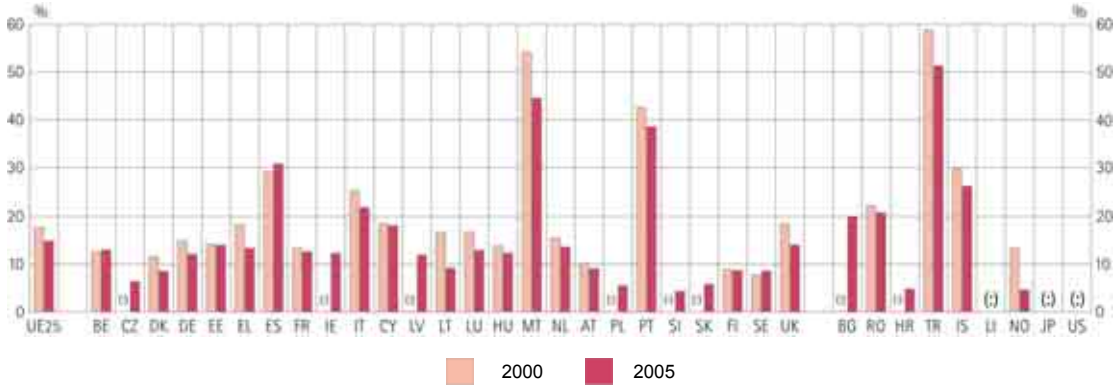
Additional notes:
Due to the implementation of harmonised concepts and definitions in the survey, information on education and training lack comparability with former years:

- from 2003 in CZ, DK, EL, IE, CY, HU, NL, AT, SI, FI, SE, NO, from 2004 in BE, LT, IT, IS, MT, PL, PT, UK and RO, and from 2005 in ES due to wider coverage of taught activities
- from 2003 in SK due to restrictions for self-learning
- 2000 in PT, 2003 in FR due to changes in the reference period (formerly one week preceding the survey),
- LU (1999) due to a new definition of lower secondary education level
- DE: 2004 data used for 2005

Due to changes in the survey characteristics, data lack comparability with former years in FI (from 2000), SE and BG (from 2001), IE, LV and LT (from 2002), HU (from 2003), FI (quarter 1 from 2003) and AT (quarter 2 from 2003; from 2004 continuous survey – covering all weeks of the reference quarter).
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 a low sample size.
CY: Students studying abroad are not yet covered by the survey, thus this indicator is overestimated.
The EU aggregates are provided from 1999, using the closest available year result in case of missing country data.

In the majority of countries the percentage of early school leavers decreased between 2000 and 2005 (Chart 7.3). However, also in this case, the quality and comparability of the trend data on early school leaving during this period is influenced in nearly all countries by breaks in time-series, small sample sizes or changes in the survey characteristics.

Chart 7.3: Share of the population aged 18-24 with only lower-secondary education and not in education or training, 2000 and 2005



	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
2000	17.7		12.5	:	11.6	14.9	14.2	18.2	29.1	13.3	:	25.3	18.5	:	16.7	16.8	13.8	54.2
Females	15.5		10.2	:	9.9	15.2	12.1	13.6	23.4	11.9	:	21.9	13.9	:	14.9	17.6	13.2	56.1
Males	19.9		14.8	:	13.4	14.6	16.3	22.9	34.7	14.8	:	28.8	25.0	:	18.5	15.9	14.3	52.5
2005	14.9		13.0	6.4	8.5	12.1	14.0	13.3	30.8	12.6	12.3	21.9	18.1	11.9	9.2	12.9	12.3	44.5
Females	12.7		10.6	6.6	7.5	11.9	10.7	9.2	25.0	10.7	9.6	17.8	10.6	8.2	6.2	13.0	11.1	42.8
Males	17.1		15.3	6.2	9.4	12.2	17.4	17.5	36.4	14.6	14.9	25.9	26.6	15.5	12.2	12.8	13.5	46.2

	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO	JP	US
2000	15.5	10.2	:	42.6	:	:	8.9	7.7	18.4	:	22.3	:	58.8	29.8	:	13.3	:	:
Females	14.8	10.7	:	35.1	:	:	6.5	6.2	17.9	:	21.3	:	51.2	29.6	:	13.5	:	:
Males	16.2	9.6	:	50.1	:	:	11.3	9.2	19.0	:	23.3	:	65.8	29.9	:	13.2	:	:
2005	13.6	9.1	5.5	38.6	4.3	5.8	8.7	8.6	14.0	20.0	20.8	4.8	51.3	26.3	:	4.6	:	:
Females	11.2	8.7	4.0	30.1	2.8	5.7	6.9	7.9	13.2	20.6	20.1	3.8	43.8	22.0	:	3.9	:	:
Males	15.8	9.5	6.9	46.7	5.7	6.0	10.6	9.3	14.7	19.5	21.4	5.6	58.2	30.5	:	5.3	:	:

Data source: Eurostat (Labour Force Survey)

Additional notes:
Due to the implementation of harmonised concepts and definitions in the survey, information on education and training lack comparability with former years:

- from 2003 in CZ, DK, EL, IE, CY, HU, NL, AT, SI, FI, SE, NO, from 2004 in BE, LT, IT, IS, MT, PL, PT, UK and RO, and from 2005 in ES due to wider coverage of taught activities
- from 2003 in SK due to restrictions for self-learning
- 2000 in PT, 2003 in FR due to changes in the reference period (formerly one week preceding the survey),
- LU (1999) due to a new definition of lower secondary education level
- DE: 2004 data used for 2005

Due to changes in the survey characteristics, data lack comparability with former years in FI (from 2000), SE and BG (from 2001), IE, LV and LT (from 2002), HU (from 2003), FI (quarter 1 from 2003) and AT (quarter 2 from 2003; from 2004 continuous survey – covering all weeks of the reference quarter).
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 a low sample size.
CY: Students studying abroad are not yet covered by the survey, thus this indicator is overestimated.
The EU aggregates are provided from 1999, using the closest available year result in case of missing country data.

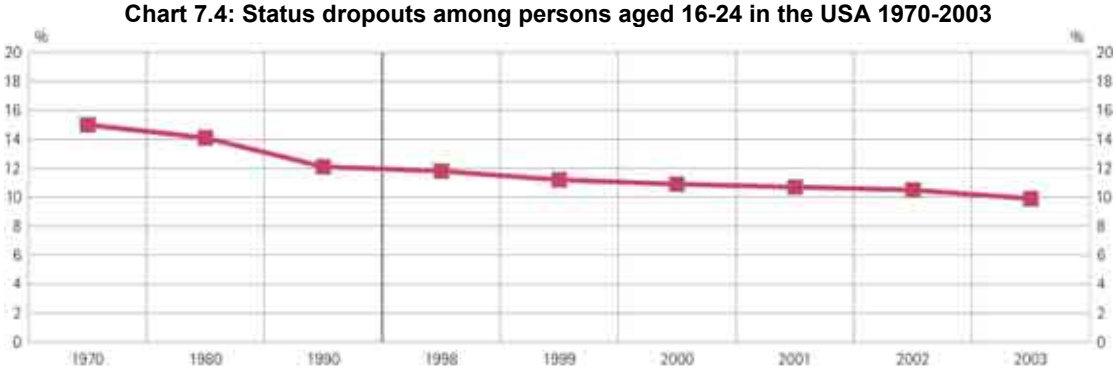
Despite all the progress, the latest figure 14.9% of early school leavers in the EU in 2005 is still far in excess of the European benchmark of a share of early school leavers of 10% in 2010. In order to achieve more progress, seven Member States leaving (Belgium, Estonia, Latvia, Malta, the Netherlands, Portugal, and Spain) have set quantified national targets on reducing early school leaving in their Lisbon National Reform Programmes 2005.

Early school leavers are on the policy agenda also outside Europe. It is not possible to directly compare the data on early school leavers between the EU and the USA since different definitions are used but we assume that the information on the situation in this area in the USA based on national data can be useful.

In **the USA**, the concept of early school leaving, more popularly known as "dropping out", is based on several definitions of drop-out rates and indicators used by official authorities, among which the concept of status dropout rates seems to be most comparable with the EU benchmark.[211]

According to official US data, 9.9% of 16-24-year-olds had no upper secondary education and were not enrolled in a high school program (status dropouts) in the USA in 2003.[212]

Chart 7.4: Status dropouts among persons aged 16-24 in the USA 1970-2003



Year	1970	1980	1990	1998	1999	2000	2001	2002	2003
%	15.0	14.1	12.1	11.8	11.2	10.9	10.7	10.5	9.9

Data source: Digest of Education Statistics for data from 1970 to 2001, data for 2002 and 2003 from Youth indicators, both published by US Department of Education

[211] The USA has had a longer tradition of and a more comprehensive approach to the measurement of dropouts using more types of dropout rates. Status dropout rate is a cumulative rate that estimates the proportion of young adults aged 16 to 24 in civilian, non-institutionalised population who are dropouts (i.e. not enrolled in a high school programme and who have not received a high school diploma or obtained an equivalency certificate), regardless of when they dropped out. The event dropout rate measures the occurrence 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 students sharing similar characteristics. The combination of these measurements allows for a more robust understanding of the state of early school leaving. The limitation of one indicator is compensated by the advantages of another, e.g., the trend of the status dropout rate year to year may be increasing, seeming to indicate a worsening in the situation. However, the event dropout rate for the same years could be decreasing, indicating that while the overall proportion of early school leavers within a population is increasing, the situation may not actually be as negative since year on year fewer people are actually dropping out. The stopout rate essentially measures the return to education after temporarily dropping out. By taking such a measurement together with the other dropout rates, the dynamic of movement into and out of education by young people can be better understood, and therefore better addressed and targeted. The measurement of these rates is based on both survey data and school records reported and aggregate up to state and national level.

[212] Using data from the Current Population Survey (CPS), a US household survey similar to EU LFS, status dropout rates show the percentage of young people aged 16-24 who are not in school and who have not earned a high school credential (either diploma or equivalency credential such as a General Educational Development certificate). That means that not only age groups (18-24 for EU, 16-24 for the USA) observed are different, but also the definition (participation in formal, non-formal and informal education in the EU in contrast to only formal education covered by the US definition). However, recently also in the USA about half a dozen US studies by independent researchers have expressed serious doubts about the reliability of the US data on dropout rates. The studies concluded that the state estimates provided by the US Department of Education, as well as the rates supplied by the states under reporting requirements of the "No Child Left Behind" Act are inaccurate and generally inflated. A very recent study published in 2005 estimates that, in reality, dropouts or early school leavers represent about one-third of young people of the appropriate age cohort in the USA.
A number of reasons exist for the inaccurate statistics, according to US researchers. The main reservation concerns the fact that statistics on high school graduation include General Education Development (GED) certificates, which are earned by passing a test, not by completing high school.

It is notable that the USA needed more than 30 years for reducing the ratio of dropouts about 5 percentage points (from 15% in 1970 to 9.9% in 2003). This could be compared with the EU ambition to decrease the share of the early school leavers by about 7 percentage points during the period of 10 years (from 2000 to 2010).

7.1 Individual characteristics of early school leavers and factors influencing early school leaving

Early school leavers are often understood as a homogeneous group of young people "at risk."

In fact, for example at least six 'types' of early school leavers, each with very different motivations and needs can be distinguished :

- positive leavers, who choose to take up employment, apprenticeship or alternative career paths;
- opportune leavers, who haven't decided on a career path, but leave to take up a job or perhaps a relationship in preference to school;
- would-be leavers, or 'reluctant stayers', who prefer to leave but lack opportunities beyond school;
- circumstantial leavers, who leave school for non-educational reasons, for example family need;
- discouraged leavers, who have not had success in their schooling, and who have low levels of performance and interest;
- alienated leavers, whose needs may be similar to the discouraged students, but which are more difficult to meet.[213]

These different groups of early school leavers have to be approached differently. However, there are no data which could inform us about the relative importance of these individual groups.

In this part of the report we analyze some socio-economic characteristics of early school leavers and external factors which may have an impact on the share of early school leavers. We focus on those where European and national actions can contribute to achieving the European benchmark. The selection is limited by the EU statistical data available; in some cases the findings of national studies are presented in order to illustrate the state of the art or possible explanations .[214]

7.1.1 Socio-economic characteristics and background of early school leavers

Socio-economic origin is an important factor affecting young people's probability of continuing in education or dropping out of school early. People tend to leave education at an

[213] P. Dwyer (1996). *Opting out: Early school leavers and the degeneration of youth policy*.

[214] First of all the findings of E. Kritikos & C. Ching (2005): *Study on Access to Education and Training, Basic Skills and Early School Leavers. Lot 3: Early School Leavers* prepared by GHK for the Commission in 2005 are used (http//europa.eu.in/comm./education/doc/reports/doc/earlyleave.pdf).. We also expect that the data collected by the SILC survey from 2004 onwards will allow a more detailed analysis of socio-economic background of early school leavers in all Member States.

earlier stage (in the twelve countries for which data are available for 2000[215]) when their parents have low levels of education, except in Finland.[216]

The most striking difference among countries is in the share of early school leavers among youths who have parents with low levels of education (ISCED 1-2). These percentages are particularly high in the countries of Southern Europe (80 % in Spain, 68 % in Italy and 66 % in Greece) and comparatively low in Slovakia, Finland, Hungary, Sweden and Austria (below 30 %). If compared with the data on children's educational attainment these data point out the remarkable improvement that younger generations in Southern European countries have made in their educational attainment. In all countries the percentages of young people with at least upper-secondary education is higher than the percentage of parents with the same level of education.[217]

Table 7.1: Share of early school leavers (aged 18- 24), by parents highest educational attainment (in %), 2000

	BE	EL	ES	FR	IT	HU	AT	SI	SK	FI	SE	RO
ISCED 1-2	26	20	40	26	38	33	24	10	14	13	18	47
ISCED 3-4	12	8	21	17	19	9	13	8	2	15	12	14
ISCED 5-6	3	11	11	6	11	3	10	:	:	8	10	:

Data source: Eurostat (Labour Force Survey, Ad hoc module on School-to-Work Transitions 2000)

As shown by data in the table above, young adults with family background with low socioeconomic status have a greater risk of being early school leavers. However, we still can find early school leavers also in the families (2 to 21%) in which one of the parents obtained upper secondary education and also in some families (3 to 11%) in which one of parents obtained tertiary education. Thus, although socio-economic background plays an important role, the phenomenon is much complex and other variables intervene.

The clearest evidence of the relative low participation of children from poorer socio-economic family background in the educational system was found in ***Ireland*** where 55% of early school leavers come from families where fathers are unemployed, compared to less than 20% in the total cohort. And also overall only 44% of Traveller children aged 12-15 participate in any education. This small Irish community with no more than 10.000 children of school-going age, representing only little more than 1% of the school-going population, accounts for 1 in 6 of all unqualified early school leavers.[218]

A reason stated for departure from education in *Greece* is to address a family task such as illness in family or caring for siblings.[219]

[215] LFS 2000 Ad Hoc Module on School-to-Work Transitions will be repeated in 2009.

[216] Eurostat (2003). *Young People's Social Origin., Educational Attainment and Labour Market Outcomes in Europe*.

[217] E. Kritikos & C. Ching (2005). *Study on Access to Education and Training, Basic Skills and Early School Leavers. Lot 3: Early School Leavers*(http//europa.eu.in/comm./education/doc/reports/doc/earlyleave.pdf).

[218] National Youth Council of Ireland. Submission to the NESF Project Team on Early School Leaving, National economic and social Forum.

[219] P. Ammerman (2004). *Achieving the Lisbon Goal: The Contribution of Vocational Education and Training Systems Country Report: Greece.*

The majority of new Member States is characterized by the lowest rates of early school leavers within EU. But it seems so that also in these countries it would be possible to reduce the numbers by addressing specific groups of youngsters at risk.

For example, in ***Estonia***, the main reason for dropping out of school is poverty. In particular children living on the streets without parental care are likely not to follow school.[220]

In ***Latvia*** the research suggests that in the case of early school leavers

- parents have no close links with the school;
- dropouts were not involved in school activities;
- some of the pupils have taken paid employment;
- dropouts were failing in a specific group of subjects;
- pupils had low motivation to study and problems with discipline.[221]

In ***Slovakia*** early school leavers have following characteristics:

- they come from large families: 63% of dropout children come from families with four or more children;
- parents are poorly educated: majority of parents of dropout children attended school for only 8years,
- only 1% attended school for 16 years;
- poverty: 97% of the families of dropout children live on less than 500 EUR per month;
- they often have behavioural problems: aggressiveness, psychological and emotional problems;
- they tend to have bad relationships with teachers, few or no friends in school;
- they tend to be characterised by little belief in value of education, passive in classroom;
- family-school cooperation is characterized by lack of communication and support of education.[222]

7.1.2 Gender differences

Within the EU early school leaving is more of a male phenomenon. In 2005, there were 12.7% female early school leavers and 17.1 % male early school leavers.

Chart 7.5: Ratio of early school leavers by gender (EU 25), 2000-2005

[220] European Training Foundation (2000). *Vocational Education and Training against social exclusion*.
[221] Network of Education Policy Centers: *School Dropouts: Different Faces in Different Countries.* OSI Education Conference, Budapest, July 2005.
[222] ibid

	2000	2001	2002	2003	2004	2005
Total	17.7	17.0	16.6	16.2	15.6	14.9
Females	15.5	14.8	14.4	14.2	13.1	12.7
Males	19.9	19.2	18.9	18.1	18.0	17.1

Data source: Eurostat (Labour Force Survey),2000-2005

There are significant intergenerational differences in the ratio of female and male population with only lower secondary education attainment (ISCED 2) and below. While in the group of younger generation (less than 24 year-old) the males prevail representing 58% in contrast to 42% of females, the opposite is valid for the older generation (more than 24 year-old, potential parents of present school population): females represent 57% in contrast to 43% of males.

Thus in the majority of EU countries the gender gap increased in comparison with "older" (more than 24 year-old) early school leavers and this mostly in favour of the female population, except for Luxembourg where the majority of the "younger" (less than 24 year-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 2003, there were 11.3% dropouts among men and only 8.4% among women.[223]

Reasons for the higher male than female ratio of early school leavers are various, as shown in some national studies.

According to a study carried out in ***Finland*** this is caused by fact that there is a statistically significant difference in attitude between girls and boys on the basis of school performance at the final stages of basic education; girls relate in a more positive way to the study of the assessed subjects and to the usefulness of the subjects than boys.[224]

According to a British study, girls' experiences of school in ***the UK*** tend to be very different from boys which affect the reasons girls may self-exclude. Girls that are experiencing difficulties are less likely to engage in behaviour that attracts the attention of support systems and school authorities. They are more likely to internalise their responses through anxiety, depression, eating disorders and self-harming. Additionally, girls disproportionately or exclusively face a number of experiences such as pregnancy and caring responsibilities.[225]

A common reason for girls in ***Malta*** to leave school early is that they decide to work and earn money with the prospect of marriage. It shows that there still exists the culture that a woman's future lays at home.[226]

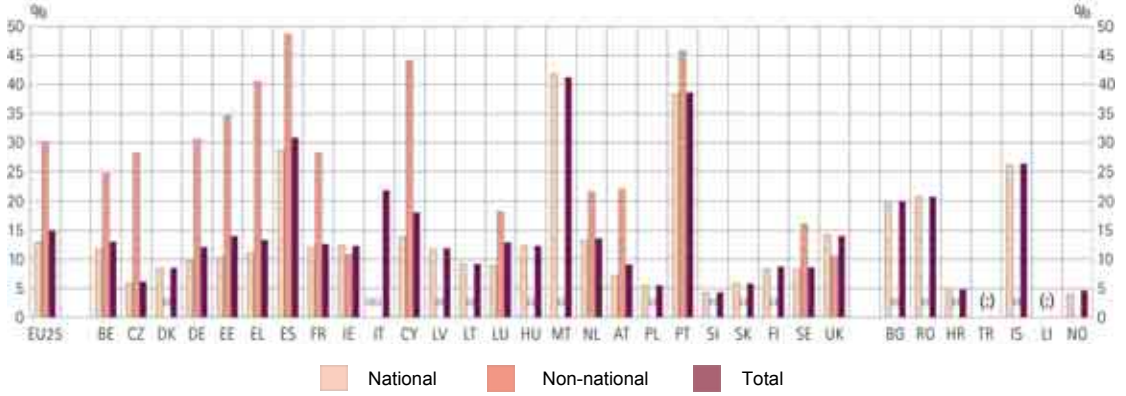
A recent Canadian study came to the conclusion that the countries such as ***Austria, the Czech Republic, Germany*** **and** ***Luxembourg*** where the education system intentionally makes preparation for employment within a vocational stream at the level of upper secondary school may better fit male attitudes towards labour market preparation and possibly emphasize training in what have traditionally been predominantly male jobs.[227]

[223] For the definition of the drop-outs in the USA see footnote 45.
[224] K. Nyyssölä (2004). *Achieving the Lisbon Goal: The Contribution of Vocational Education and Training Systems Country Report: Finland*.
[225] M. Osler, C. Street, M. Lall. & K.Vincent (2001). *Not a problem? Girls and School Exclusion.*
[226] S.Gatt and Partners (2005). *The School to Work Transition of Young People in Malta.*
[227] P. de Broucker (2005). *Without a Paddle: What to do About Canada's Young Drop-outs.*

7.1.3 National background of early school leavers

When we look at the share of early school leavers from the aspect of nationality as defined in the Labour Force Survey[228] in relation to the structure of the whole population aged 18 -24 years, early school leaving is more common phenomena among non-nationals (30.1% of non-nationals in contrast to 13 % of nationals).[229] Nearly half of the early school leavers consists of non-national early school leavers in Spain and more than 40% in Greece, Cyprus and Portugal.

Chart 7.6: Share of early school leavers by nationality, 2005
(Percentage of the population aged 18-24 with only lower-secondary education and not in education or training, by nationality, 2005)



	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU
Total	14.9		13.0	6.4	8.5	12.1	14.0	13.3	30.8	12.6	12.3	21.9	18.1	11.9	9.2	12.9	12.3
National	13.0		11.8	6.3	8.5	9.8	10.3	11.1	28.6	12.0	12.4	:	13.9	11.8	9.2	8.9	12.3
Non-national	30.1		28.1	21	:	30.5	34.6	40.5	48.6	28.2	10.8	:	44.1	:	:	18.2	:

	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO
Total	41.2	13.6	9.1	5.5	38.6	4.3	5.8	8.7	8.6	14.0	20.0	20.8	4.8	:	26.3	:	4.6
National	41.8	13.3	7.2	5.5	38.3	4.3	5.9	8.4	8.3	14.3	20.0	20.8	4.7	:	26.2	:	4.0
Non-national	:	21.6	22.0	:	45.8	:	:	:	16.1	10.5	:	:	:	:	:	:	:

Data source: Eurostat (Labour Force Survey), 2005

Additional notes:
- Cells with ':' represent data either not reliable or not available
- The reliability of the share of non nationals is used for both rates
- Due to implementation of harmonised concepts and definitions in the survey, breaks in time series: CZ, DK, EL, FR, IE, CY, LU, HU, AT, SI, SK, FI, SE, IS, NO (2003) , BE, LT, MT, PI, PT, RO (2004) and ES(2005).
- DE : data for 2004
- LU, MT and the UK (2005): provisional data.

[228] 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.

[229] However, when we look at the share of early school leavers from the point of view of their country of birth, the situation slightly differs. In 2005, 13.7 % of early school leavers were born in the country of reference, whereas 24.8 % were born outside the country of reference, that means that about 6 % of non-national early school leavers were already born in the country of reference within EU (source: Eurostat-LFS 2005).

As regards the composition of the total number of early school leavers in the EU, as shown in the table 7.2, nearly 90% of all early school leavers are citizens of the European Union, and only slightly above 10 % are non-nationals. In all Member States, except in Luxembourg, the majority of the early school leavers belong to the group of "nationals".

Relatively high share of total number of early school leavers is represented by non-nationals in Estonia (37.6% of all early school leavers). In Austria, Germany, Greece and Cyprus around 25% of the early school leavers are non-nationals. In Bulgaria most of the early school leavers are children of Roma origin.[230]

Table 7.2: Ratio of nationals and non-nationals among early school leavers, 2005

(Percentage of nationals and non-nationals aged 18-24 with only lower-secondary education and not in education or training of the total national and non-national population aged 18-24, 2005)

	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU
National	87.0		85.1	97.8	:	72.6	62.4	76.8	82.2	91.6	94.5	:	66.0	:	:	38.8	:
Non-national	13.0		14.9	2.2	:	27.4	37.6	23.2	17.8	8.4	5.5	:	34.0	:	:	61.2	:

	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO
National	:	93.8	69.1	:	95.8	:	:	:	92.6	94.3	:	:	:	:	:	:	:
Non-national	:	6.2	30.9	:	4.2	:	:	:	7.4	5.7	:	:	:	:	:	:	:

Data source: Eurostat (Labour Force Survey),2005

Additional notes:
- Cells with ':' represent data either not reliable or not available
- The reliability of the share of non nationals is used for both rates
- Due to implementation of harmonised concepts and definitions in the survey, breaks in time series: CZ, DK, EL, FR, IE, CY, LU, HU, AT, SI, SK, FI, SE, IS, NO (2003) , BE, LT, MT, PI, PT, RO (2004) and ES(2005).
- DE: data for 2004
- LU, MT and the UK (2005): provisional data.

However, coming from migrant families can also have a positive effect. Australian experiences show that even though the average educational attainment of parents in non-English speaking families is lower than for parents from English speaking backgrounds, they have higher educational aspirations for their children and place a premium on completing high school as a form of enhancing their children's future education and work prospects.[231]

In some Member States, the situation is influenced by immigration policy as well as by the country of origin. To fully analyse the impact of these cultural influences, more in-depth analysis is necessary of issues such as the significance of speaking a language at home other than the language of instruction or on whether a disadvantaged socio-economic background could potentially have a greater impact on early school leaving than solely the circumstance of belonging to a non-national group.

Given the limitations of the data, it is difficult to make conclusions on the impact of nationality on early school leaving. In order to fully analyse this potential impact, more in-depth analyses would be necessary on issues such as whether the language spoken at home is different than the one used at school and whether a more disadvantaged background could potentially have a stronger impact on early school leaving than the nationality.

[230] U. Damyanovic & H. Fragoulis (2004). *Achieving the Lisbon Goal: The Contribution of Vocational Education and Training Systems Country Report: Bulgaria*.
[231] P. Miller & P. Volker (1987). *The youth labour market in Australia.*

7.1.4 Performance at school (previous school trajectory)

Pupils' experiences of school are a significant predictor of early school leaving. Indeed, some research has indicated that variables relating to school experience are the best screening predictors for potential early school leaving , and that other variables such as family, behaviour and personality, although significant, are relatively less important.[232]

Low achievement at school is an important factor in leaving school early. For example, a survey done in Australia showed that if a student is doing well at school, he or she will stay on, regardless of school and generally other factors. Conversely, if students do not feel comfortable at school, they will tend not to want to stay.[233] The PISA survey also confirms a high correlation between early school leavers and students performing at the lowest levels of proficiency (level 1 and lower).[234]

Those who experience difficulty in meeting the academic demands of school, who get low grades, and who repeat a grade level are those most likely to become early school leavers.[235] Indeed, some research has identified grade retention as the single most powerful school-leaving predictor.[236] Those who are retained at a grade level often find that they are older than their classmates, a factor that has also been associated with early school leaving. The difficulties experienced in meeting academic demands increase over time. Whereas pupils may fall only slightly behind their classmates in the early years of schooling, as time goes on they experience more difficulty and less success in a school context, which weakens their motivation to stay at school.[237]

7.1.5 Highest educational level achieved by early school leavers

In terms of the highest educational level attained by early school leavers within EU25, 77% have attained lower secondary education. However, in Luxembourg and Portugal there are more early school leavers with only primary education. It is notable also that in Bulgaria more than 10% of the early school leaver population has less than primary education.

There are differences between the "younger" and "older" early school leavers. In all countries except the Czech Republic, Estonia, Poland, Slovakia and the UK, more "young" early school leavers now have attained at least lower secondary education by the time they leave. Whereas for the majority of countries the ratio of people without formal education or below lower secondary level has decreased, it has slightly increased in Ireland, Lithuania, Slovakia and the UK. Of the countries with the highest ratios of early school leavers, Malta and Spain now have much higher proportion of early school leavers who have attained lower secondary level instead of primary educational attainment only. In Portugal the proportion of early school leavers with only primary education is still quite low but has increased.

7.1.6 Age when leaving school

The average age of young people leaving education with only primary or lower secondary education ranges between 14.5 (Greece) to 19.6 (in Denmark) in 2004. In Greece, Italy, Hungary, Slovakia, Romania and Spain, young people tend to leave education earlier than in

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[232] M. Janosz et al (1997). *Disentangling the weight of school drop-out predictors: a test on two longitudinal samples*.
[233] G.N.Marks & N. Fleming (1999). *Early school leaving in Australia*.
[234] OECD (2001). *Knowledge and Skills for Life – First Results from PISA 2000.*
[235] K. Alexander et al (1997). *From first grade forward: Early foundations of high school drop-out.*
[236] A. Rumberger (1995). *Dropping out of middle school: a multi-level analysis of students and schools*.
[237] E. Eivers et al (2000). *Characteristics of early school leavers: results of the research strand of the 8-15 year old early school leavers initiative.*

other countries (at around the age of 15). There is less variation between countries at ISCED levels 3 and 4: the oldest school leavers are in Sweden, Denmark, Finland, the Netherlands, France and Portugal (on average they leave at around age 20), while the youngest are in Slovakia and Hungary (around age 18).[238]

In contrast, in the USA the age of early school leavers has begun to fall. Dropping out of school has shifted here from tending to take place between Grades 11 and 12, typical three decades ago, to occurring between Grades 9 and 10. This is a significant shift, rendering drop-outs younger and less well educated than in the past, and therefore facing greater difficulty in finding jobs. There is also some indication that some unknown numbers of students are taking five years to get a high school diploma rather than four; so, while some are leaving earlier, others may be staying longer.

7.2 Labour market performance of early school leavers

Early school leavers perform less well as regards employment, earnings and some other aspects in the labour market than the working population having completed upper secondary education or higher.

At a European level unemployment rates decline with increasing levels of qualifications. However, in some Southern European countries there are fewer employment benefits attached to achieving higher qualification levels. Unemployment rates in some Southern European countries are higher for those with upper secondary level qualifications than for the lowest qualified leavers and only a little lower for tertiary level graduates.

Two groups of countries can be distinguished. Firstly, those for which the employment rates for people who have only obtained lower secondary education or lower are below the overall employment rate for almost all age groups (Czech Republic, Germany, Denmark, Hungary, Norway Poland, Slovakia and UK). Second, all other EU countries where employment rates for those with low qualifications are mostly close to or higher than the overall employment rate. In all the observed countries, female early school leavers have lower employment rates than their male counterparts.

The EU employment rate of people with lower qualifications is lower than in some EU competitor countries, for example the USA, Australia and Canada. Moreover, the gap between the employment rates of people with upper secondary education and people with lower secondary education in the EU is more pronounced than in the USA or Japan. The added value of staying in education is therefore higher in the EU than in some main competitors on a world level when looking at employment rates. We do not find the same situation when looking at earnings.

In general, early school leavers tend to have lower earnings than more educated. This was again confirmed by OECD. As regards the relative earnings, in most countries the share of individuals in the lowest earning categories falls as the level of the educational attainment raises. However, the countries differ significantly in the dispersion of earnings and there are according to the OECD many possible explanations for this fact. Across all levels of education, Belgium, France, Hungary and Luxembourg have relatively few individuals with earning that are either at or below half a median. Conversely, the population with pre-tax earnings above 1.5 times the median is very low (13%) in Belgium and Sweden (15%).[239]

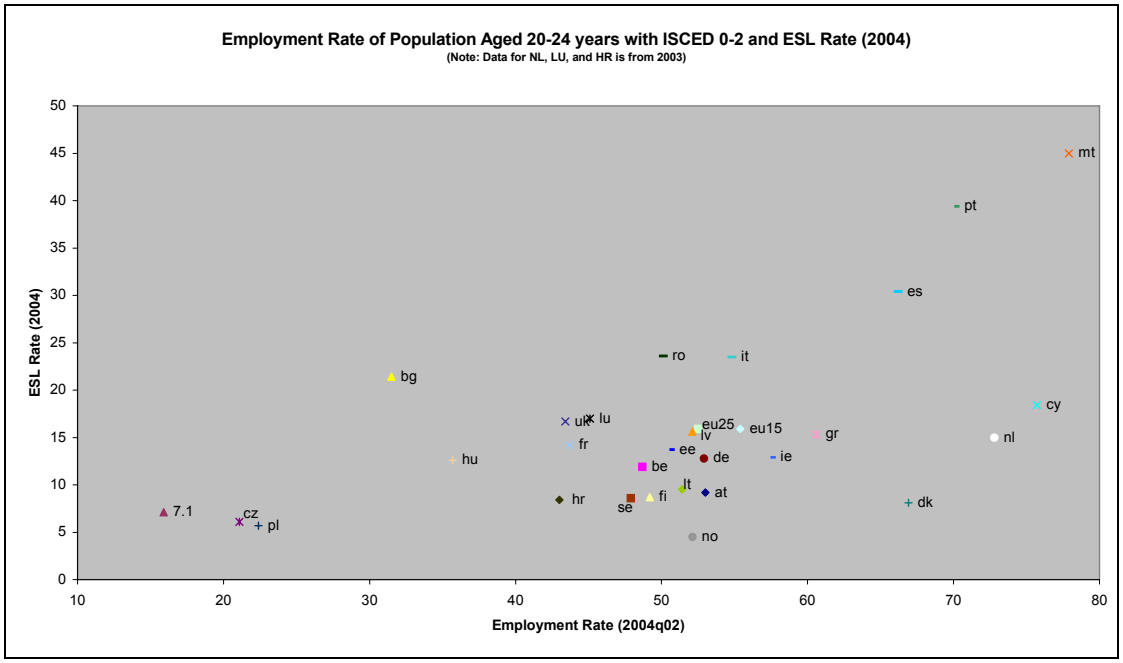
[238] Eurostat (2003). *Young People's Social Origin, Educational Attainment and Labour Market Outcomes in Europe.*

[239] OECD (2005). *Education at a Glance 2005*.

As regards the security of employment, a higher proportion of the oldest generation of early school leavers in 1995 had a permanent contract than the younger generation, but the opposite was found in 2004 (except in Denmark, Ireland, Italy and Austria). A slightly higher proportion of early school leavers compared to non-school leavers was reported to be self–employed, especially in the Southern countries and some new Member States.

Chart 7.7 below plots the ratio of early school leavers for 2004 against the employment rate of the population aged 20-24 years with at most lower secondary qualifications. For a number of countries, high levels of employment for this segment of the population seem to go together with relatively higher levels of early school leavers. The chart only partly confirms this trend: in some countries a high ratio of early school leavers goes together with a high rate of employment within that group of people.

Chart 7.7: Employment rate of population aged 20-24 years with ISCED 0-2 and early school leaving rate (2004)



Source: GHK study (2005) [240], *Data source* Eurostat (Labour Force Survey), 2004

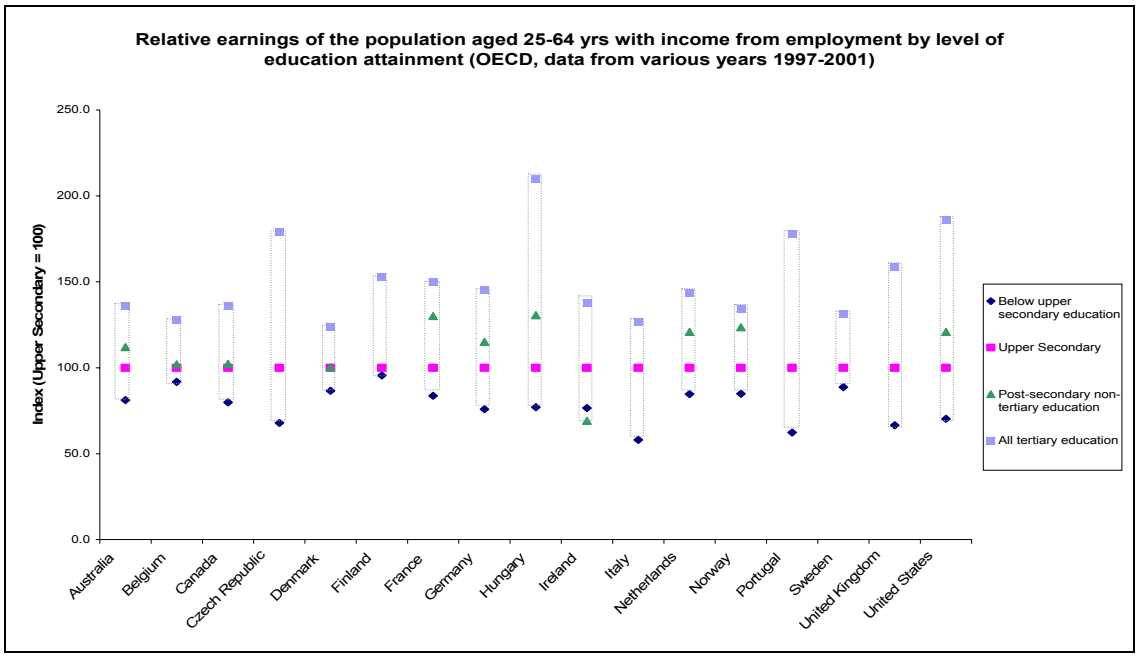
Additional note: UK - includes ISCED3C as in the UK this is regarded as a lower secondary qualification

It seems that in a few southern countries like Malta and Portugal, the availability of jobs for low qualified people is an incentive for leaving school early. For example, in Malta the major reasons for leaving school early include support for family or family business. It reflects the high number of micro- and family-enterprises in Malta.[241] The same can be said for Greece, where there are a large number of entrepreneurs, particularly in retail, tourism or agricultural occupations.

[240] E. Kritikos & C. Ching (2005): *Study on Access to Education and Training, Basic Skills and Early School Leavers. Lot 3: Early School Leavers* (http//europa.eu.in/comm./education/doc/reports/doc/earlyleave.pdf).

[241] P. Ammerman (2004), *Achieving the Lisbon Goal: The Contribution of Vocational Education and Training Systems Country Report: Malta.*

Chart 7.8: Relative earnings with income from employment by level of education attained, various years (1997-2001)



Source: OECD

There does not seem to be much difference between the main employment characteristics within the group of early school leavers across countries. In terms of economic activity in the southern countries and the majority of the New Member States, a more equal distribution of early school leavers is found between agriculture, services and industry.

In some countries, such as Poland, early school leavers shift to agricultural work when they get older, whilst early school leavers of all ages in Slovenia tend to be mostly working in industry.

In Greece, Spain, Italy, Cyprus, Lithuania, Latvia, Poland, Portugal and Finland, more early school leavers tend to move to being self-employed when older. In the New Member States more early school leavers of all ages seem to be engaged in craft and related trade occupations. Shift and Sunday work tend to be more common in Poland for all early school leavers in 2004.

The analyses shows that the differences between early school leavers and non-early school leavers with regard to income, occupational status, sector and security of employment are more pronounced in some countries than in others. But in general it might be concluded that early school leavers earn less, are found more often in blue collar jobs with less employment security and more part-time work than the non-early school leavers.

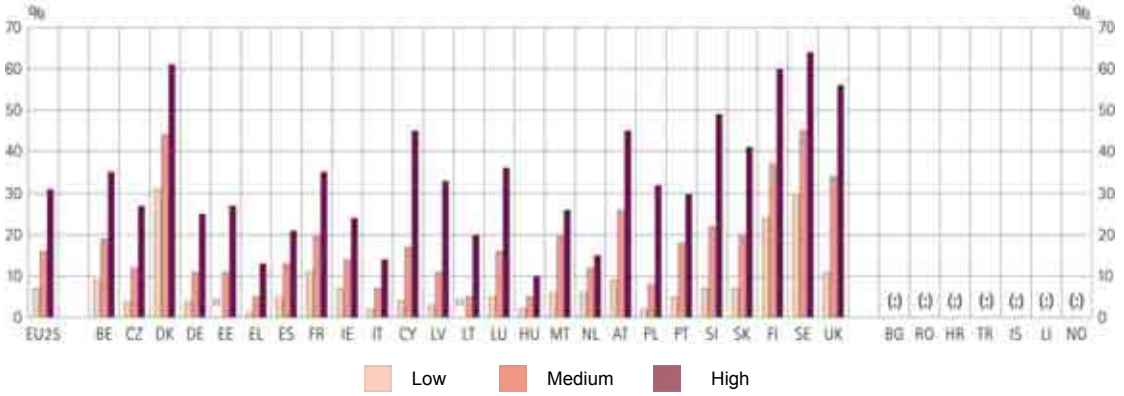
7.3 Participation of people with less than upper secondary educational attainment in education and training later in life

Later in life early school leavers do not profit from participation in education as much as persons with higher educational attainment. In all countries, participation rates in non-formal education of persons with a prior education level of less than upper secondary are much lower than of persons with a higher prior attainment level. In some countries, for example in Lithuania, Poland, Cyprus and Latvia, the difference is more than ten times higher for highly educated people than for the low educated ones. However for countries with general low

participation rates, like Greece, Spain, Italy, Lithuania, Malta and Hungary, this difference is reduced.

In only three countries did more than 20% of the people with low education participate in non-formal education (Denmark, Sweden and Finland).

Chart 7.9: Participation of 25-64-year-olds in non-formal education by level of educational attainment, 2003 [242]



	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU
Low	6.5		8.7	3.9	30.9	3.6	:	0.8	4.9	10.5	6.8	1.8	3.6	2.9	:	5	1.5
Medium	16.4		19.1	12.1	43.9	10.8	10.8	5.3	12.5	19.9	14	7.3	17	10.7	4.8	16.4	4.9
High	30.9		34.9	27.2	61.4	25.3	26.8	13.4	21	35.4	24.4	14	44.7	33.3	20.2	35.6	10.1

	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO
Low	5.8	6.2	8.7	1.5	5.2	6.7	6.7	23.9	30.1	11.2	:	:	:	:	:	:	:
Medium	22.3	12.2	26.3	7.6	17.8	22.1	19.7	37	45.1	33.7	:	:	:	:	:	:	:
High	25	15	45	31.5	30.4	48.6	41.2	59.8	64.4	56.3	:	:	:	:	:	:	:

Data source: Eurostat (Labour Force Survey, Ad hoc module on LLL), 2003

7.4 Participation of early school leavers in second chance education

Availability and easy access to 'second-chance' education positively influences the participation of young people who left school without completion of upper secondary education in education later in life in those countries that offer some form of organised second-chance education. Even more beneficial to early school leavers is the opportunity to gain specific certificates.

For example, in the UK early school leavers are given a second chance to participate in further education through the 'Access to Higher Education' courses which are designed to help students with no or insufficient qualifications to avail of higher education.

In Spain the government has introduced important changes in second chance provision through vocational training which have had a significant impact on reducing the number of students without higher secondary level qualifications.

Similarly, the GED certificate in the USA is seen as an important route for accessing college courses or university by previous early school leavers. In the USA[243] a substantial proportion

[242] Low (ISCED levels 0,1 and 2), medium (ISCED levels 3 and 4, high (ISCED levels 5 and 6).

[243] R.W. Rumberger & S.P. Lamb (1998). *The Early Employment and Further Education Experiences of High School Drop-outs: A Comparative Study of the United States and Australia*.

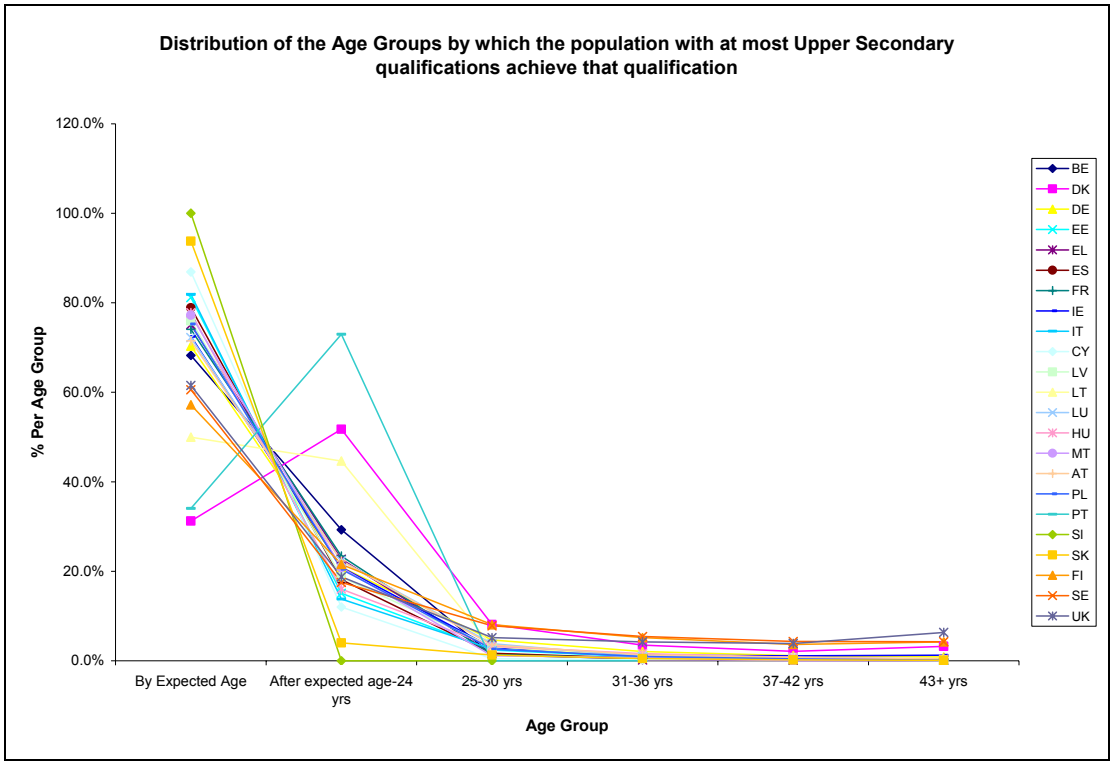
of high school dropouts eventually complete high school, either by earning a regular high school diploma or by earning a high school equivalency certificate (GED). It was found that 44% of all dropouts completed high school two years after normal high school graduation. Most of these young people obtained a high school equivalency certificate such as the GED rather than a regular high school diploma. 24% of them were enrolled in school or an alternative programme that would prepare them to obtain a diploma or equivalent certificate.

For many early school leavers the second-chance schools provide basic skills training which may help young people to develop learning habits and motivate them for learning in the future, either in formal education or through work based learning.

Second-chance schools need to be formally recognised so that qualifications will be accepted by further education establishments and employers.

The following Chart 7.10 gives an overview per country for 2004 of the distribution of age groups by which the population with at most upper secondary qualifications achieve that qualification.[244] It is clear from the chart that there is little evidence of return to education and training in later life, although some countries can be considered as still providing some scope, in particular Sweden, Finland, Denmark and the UK. It has to be said, however, that this scope is greater in the UK because the rate of early school leavers is initially higher.

Chart 7.10: Distribution of the age groups by which the population with at most upper secondary qualifications achieve that qualification



Data source: Eurostat (Labour Force Survey),2004

Additional note: Expected age is the age by which a student is normally expected to complete an upper secondary education.

[244] The LFS dataset contains data on the age when a person obtained ISCED 3 and therefore an approximation of the likelihood that persons will return later in life to obtain an ISCED level 3. This assumes that persons obtaining their ISCED level 3 after 24 years of age were previously early school leavers.

For most countries in the EU25, a majority of the population attained ISCED Level 3 by the expected age in each country. However, for Portugal and Denmark a majority of the population obtained their ISCED Level 3 within the second age category (after the expected age but before 25 years of age). The distribution over the age groups 25-30 to 43 years and older seems equal for those countries that still show some scope for returning to education.

7.5 Impact of national educational policy on early school leaving

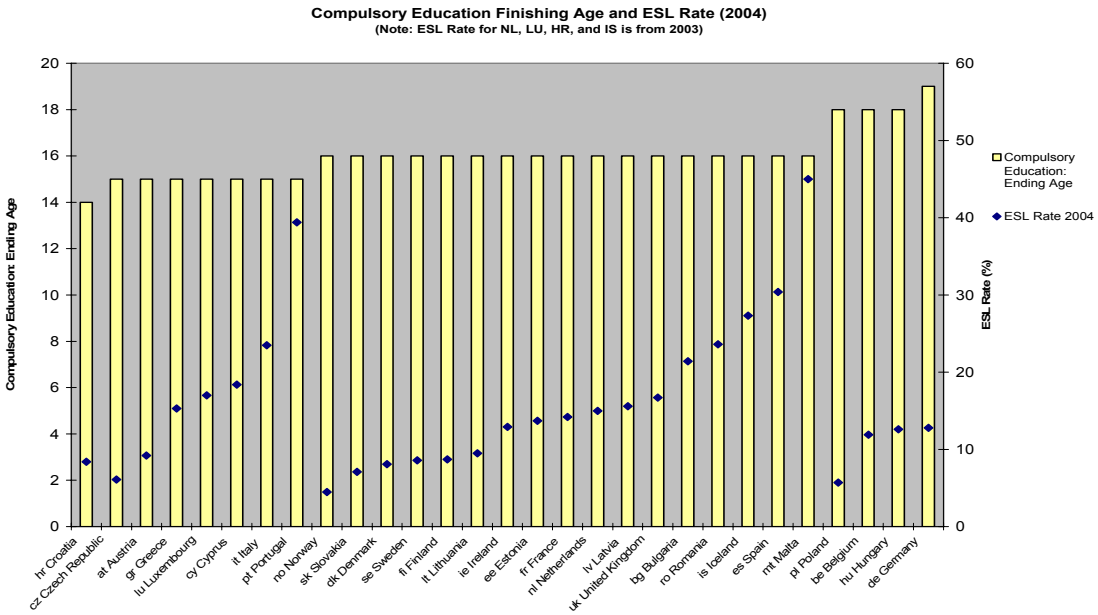
In order to reduce the number of early school leavers, national reforms in the area of education and training are mostly targeted at the length of compulsory education, secondary education (reforms of general and vocational education) and specific initiatives and programmes targeted at bringing down the number of early school leavers.

Length of compulsory education

The countries with the oldest compulsory education finishing age (18-19 years old, based on compulsory part-time education schemes), all have an early school leavers rate at around the 10% level. However, for all other countries there seems to be no strong link to the level of the early school leavers rate, as the chart shows a wide range of early school leavers rates from very low to very high for education systems with compulsory education finishing ages between 14 and 16 years.

When comparing the regulations on compulsory length of education with the actual rates of early school leavers, Belgium, Germany and Hungary[245] are not among the best performing countries, meaning that some countries without the obligation to stay until the end of secondary education actually perform better (except for Poland, which has one of the longest durations of compulsory schooling and simultaneously one of the lowest ratios of early school-leavers). Since there are only four countries with a compulsory finishing age of 18, it is difficult to draw conclusions on the influence of the length of compulsory education; however, with regard to the countries observed it does not seem to have a strong effect, and other factors are probably also influencing the rate of early school leaving.

Chart 7.11: Length of the compulsory schooling and share of early school leavers



Data source: EURYDICE and Eurostat (Labour Force Survey), 2005
Additional note: DE: partial compulsory schooling till 19 years only in some Landers

[245] Italy is not taken into account here since the new compulsory age has only very recently been introduced and therefore no link can be made yet to the actual rate of early school leavers.

The rate of early school leaving in Italy has generally been high over the years but has been falling steadily in recent years. According to the country report for Italy, it seems that during the last ten years school attendance and the productivity of the education system have grown strongly at all levels.[246]

Offering a wider variety of post-compulsory secondary educational programmes
Some countries try to reduce the number of early school leavers by increasing the choice of study programmes even at younger ages, for example in more general and more vocational directions. This is the case in Iceland, Spain, Portugal, Malta, Cyprus, the Czech Republic and Norway.

Modular training programmes (Latvia, Flemish Community of Belgium) could be an incentive for young people to return to the education system even after a break; or, by making it easier to switch programmes, they may feel less restricted by the chosen course of study.

Although the preferred choice of a majority of national policies is to widen the scope of education towards vocational education, it is important that these vocational directions end in a qualification that is sufficient for entering the labour market. In some countries, the frequency of early school leaving is higher in vocational programmes. Counselling with the aim of finding out what the best option is for a specific person seems to be more efficient than just redirecting "weaker" students to vocational streams. Alternating class room education with more practice oriented courses is considered beneficial.

The availability of support and guidance mechanisms available in school and specifically targeted at young people at risk
The individual decision of a young person to leave school early is influenced by a mixture of factors. For example, a young person without the financial resources to pursue post-compulsory education can be supported by specific allowances, whereas one with low learning abilities could be helped through after-school classes to catch up with other students.

In order to reduce the numbers of early school leavers, governments all over the world are implementing programmes and testing pilot projects. Review of the current policies and provision of programmes across many of the observed countries highlights the complexity involved in addressing the failing student, the early school leaver or in the provision of support for second chance students.

7.6 Some issues of the equity of the European education and training systems

A recent study carried out by the GERESE[247] network of six European universities coordinated by University of Liège, within the frame of the Socrates programme (Action 6, Observation and Innovation) a research focused on measurement of the equity of educational systems in Europe using a series of indicators on inequalities (29 indicators on inequalities in systems and on contextual inequalities) in individual countries in view of analysing to which degree educational inequalities impact at the less favoured and promote social mobility.

According to the authors of the study, a fair educational system is a system that treats all pupils as equals, which aims to encourage a fair society, in which essential assets are distributed in accordance with the rules of justice, and which encourages cooperation on an equal footing.

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[246] G. Allulli, G. Di Francesco, Ch. Pecorini & I. Tramontano (2004). *Achieving the Lisbon Goal: The Contribution of Vocational Education and Training Systems Country Report: Italy.*

[247] GERESE (Groupe européen de recherche sur l'équité des systèmes éducatifs) (2005). *Equity in European Educational Systems. A set of indicators.* See http://www.ulg.ac.be/pedaexpe/equity.

Such definition of equity leads to the acceptance or even may demand that:

- certain educational assets are distributed equally (quality of teachers), but other assets should be distributed in proportion to individual contribution (marks, punishment, the careers open to qualifications) ;
- more of certain assets are given to the best pupils (longer education) and more of other assets to the less able pupils (better ratio of students to teaching staff or special education).

Without presenting any in-depth analysis of the study and its results[248] some main conclusions can be drawn:

- Benefits the individual can obtain from education are especially important in this group of countries: Germany, Austria, the UK, Poland, Estonia, Lithuania, Latvia, Czech Republic and the Slovakia.
- A homogenously favourable situation as concerns equity in three areas: equity in society, in the school process and as concerns school results was not found in any Member State. In three countries – Finland, the Netherlands and Denmark - the levels of equity are favourable in at least two of the three areas, but, however, the benefits that can be drawn from education in terms of equity are relatively low in these countries, also.

Chart 7.12: Context and achievements of the education and training systems

	Context			Achievements		
	Inter-individual differences	Differences between groups	Proportion of pupils below the threshold of competencies	Inter-individual differences	Differences between groups	Proportion of pupils below the threshold of competencies
Germany	high	high	middle	lowest	lowest	lowest
Austria	middle	lowest	middle	high	lowest	high
Belgium	lowest	lowest	high	lowest	lowest	lowest
Cyprus	middle	lowest	high	lowest	no data	lowest
Denmark	high	lowest	middle	middle	high	middle
Spain	lowest	high	lowest	high	middle	high
Estonia	lowest	lowest	high	middle	no data	high
Finland	high	middle	high	middle	lowest	middle
France	middle	high	high	high	high	high
Greece	middle	high	lowest	lowest	high	lowest
Hungary	middle	lowest	middle	middle	high	high
Ireland	high	middle	high	middle	middle	middle
Italy	high	high	lowest	lowest	high	lowest
Latvia	lowest	middle	high	middle	middle	high
Lithuania	lowest	middle	high	lowest	no data	high
Luxembourg	lowest	lowest	high	high	high	high
Malta	lowest	middle	high	high	no data	lowest
The Netherl.	middle	middle	middle	high	middle	high
Poland	lowest	lowest	high	middle	middle	high
Portugal	high	middle	lowest	middle	high	high
Slovakia	lowest	lowest	high	middle	lowest	high
Czech Rep.	middle	lowest	middle	high	middle	high
The UK	lowest	high	high	high	middle	middle
Slovenia	middle	lowest	middle	middle	no data	middle
Sweden	high	high	middle	high	high	high

high level of performance | middle level of performance | lowest level of performance | no data

[248] Preliminary results from the study (covering EU15) has been presented orally by Professor Marc Demeuse, University of Liege (international coordinator) at meeting of the Council of Ministers (Education), 21 February 2005.

The study concludes by a tentative grouping of countries of which two are mentioned below:

- Countries where the level of equity is favourable in all of the dimensions that have been examined: France, Ireland and the Netherlands.

- Countries where educational inequalities are highest: Germany, Belgium, Italy, Slovakia, Cyprus and Greece.

Conclusion

Participation of young people in education and training

Participation in pre-primary education has a significant influence on the participation in education and training in later life. A great majority of all 4-year-olds (86.3 % in 2003) are enrolled in pre-primary or primary educational programmes within the EU25 despite the fact that pre-primary education is usually not compulsory at this age. The participation rate has increased by 0.9 percentage points from 2000 to 2003.

However, there are still big differences between individual countries. In some countries, the participation is almost universal, in others only half of the population of this age group participates.

At the age of 18, 76.3% of young people still participate in education and training. Positive is that the participation rate shows an increasing tendency: it increased by 3 percentage points in 2003 compared to year 2000 and in many Member States nearly all children remain in school beyond the age at which compulsory education ends.

At the level of upper secondary education, distribution of students enrolled in a general and in a vocational stream does not change significantly at the level of EU for certain years, but there is a stabile decrease of the proportion of students enrolled in vocational stream in the majority of new Member States.

There is a long lasting ongoing increase in the participation in tertiary education. European students enrolled in tertiary education represented more than half of the population aged 20-24 years in 2003, but participation varies between the countries and not all who fulfill requirements and could be enrolled are tertiary students at present.

Participation of adults in lifelong education

When examining progress since 2000 concerning participation of adults in lifelong learning it must be considered that there were breaks in time series in many EU countries, especially between 2002 and 2003, but also in 2004 and 2005 which generally resulted in higher figures than in the years before (notably in France, Hungary, Sweden and Spain).

Mainly because of these changes in data it seems so that the EU reference level (benchmark) on participation of adults in lifelong learning will be reached in 2010. However, there are still areas where more progress should be achieved, for example in order to reduce inequity.

There are potentially two groups of countries that could provide models of good practice: firstly, countries that already perform well (the Nordic countries, UK, Netherlands, Slovenia); and secondly, countries that have not yet reached the benchmark, but which are quickly catching up, as is the case in Portugal. Both groups might prove a valuable source of inspiration in the development of national strategies for increased participation in lifelong learning.

A key challenge to Europe is not only to increase the basic participation rate, but also to ensure that a coherent lifelong learning culture prevails throughout Europe. Many of the essential and less quantifiable elements of a comprehensive lifelong learning framework, such as access, guidance and the flexibility of learning systems, are not yet covered by appropriate indicators. However, data availability will improve in the future through the Adult Education Survey (AES) which has already been implemented in some countries.

The data collected through the LFS ad hoc module on lifelong learning in 2003 allow a more detailed analysis of participation patterns. However, mainly because of different reference periods these data are not comparable with data covered by EU benchmark on participation of adults in lifelong learning.

According to these data, 42% of the EU population aged 25-64 years participated in some form of education, training or learning activity over the twelve months preceding the survey.

4.5% were in formal education. 16.8% participated in non-formal education and training and nearly one European out of three declared having taken some form of informal learning.

However, these figures also show that 58% of EU citizens did not participate in any kind of learning.

Differences between countries are very significant, ranging from a participation rate of 11.7% in Hungary and 17.4% in Greece to 80.9% in Luxembourg, 82% inSlovenia and 89.2% in Austria. The most important variations are seen when comparing rates by age (50% for the aged group 25-34 and 30% for the age group 55-64), and when comparing rates by highest educational attainment: 23% for low education attainment, 69% for high.

In many cases the Nordic countries can be considered a model: they show good results as regards social inclusion and at the same time high average educational performance levels.

Improving the participation and learning outcomes of certain socio-demographic groups is important for reaching the five European education and training benchmarks. The marked differences between EU countries in the participation and attainment rates show that there is still great potential for improvement. Groups that would benefit from special attention include migrants, boys in lower-secondary education and people with a low level of initial education.

Early school leavers

In 2005 early school leavers in the EU25 represented nearly 15% of young people aged 18-24. There has been continuous progress in recent years in reducing this proportion, but achieving the benchmark of a ratio of early school leavers of 10% by 2010 requires substantial political action and sustained commitment.

The analysis of this phenomenon and of actions already taken at the national level have shown that:

- Early school leavers are not a homogeneous group and therefore policy action should be targeted according to the specific profiles of young people at risk of early school leaving.
- Early school leavers come mostly from a disadvantaged economic background and might have to contend with difficult family circumstances. Moreover, difficult behaviour, such as alcohol abuse or criminal behaviour as well as poor performance at school, are often associated with early school leaving.
- Young people in families with low socio-economic status and with low educational attainment of parents are at greater risk of becoming early school leavers. But early school leavers also come from between 2% and 21% of families in which one parent obtained at most upper secondary education and also from between 3% and 11% of families in which one parent obtained a university diploma. Thus socio-economic background does not explain the complexity of the problem.

- 77% of early school leavers have attained lower secondary education. It is notable that in Bulgaria more than 10% of the early school leaver population has less than primary education.
- The average age of young people leaving education without completing upper secondary education ranges from 14.5 (Greece) to 19.6 years (Denmark).
- There are more male than female early school leavers in the EU and in the majority of the Member States.
- Early school leavers avail of opportunities to obtain upper secondary education mainly until the age of 30; after this it is rather seldom.
- A higher compulsory finishing age alone does not necessarily mean that more young people will succeed in obtaining an upper-secondary qualification.
- Differentiating the content of post-compulsory educational programmes and especially offering a wide variety of choice might increase young people's motivation to stay longer in education. There seems to be a tendency among governments to offer more vocational options in post-compulsory education to ensure that young people who are at risk of dropping out gain some kind of qualification and proof of skills. Moreover, the reform efforts undertaken seem to be additionally targeted at matching these vocational programmes to the needs of the labour market to increase the chances of finding a job afterwards.
- It is difficult to measure the real impact of targeted interventions, but some specific measures seem to have a positive influence on retaining specific risk groups longer in education and helping them towards obtaining a qualification.
- Some countries with quite a high rate of early school leaving seem also to have a high employment rate for that age group. It is to be further investigated whether the availability of jobs for low skilled workers might be a disincentive to stay longer in school.

STRATEGIC OBJECTIVE 3

OPENING UP EDUCATION AND TRAINING SYSTEMS TO THE WIDER WORLD

VIII IMPROVING FOREIGN LANGUAGE LEARNING

Main messages

- There has been little progress from 2000 to 2003 in increasing the number of foreign languages taught. An average of 1.3 and 1.6 foreign languages (2003) are taught per student in general lower- and upper-secondary education respectively in the Member States.
- The concern of language proficiency among European students is exacerbated by the fact that more than half the students follow vocational streams on upper secondary level where the average number of foreign languages taught is considerably lower.
- The average number of foreign languages taught per student will have to increase by at least 25% to raise the European average to the objective of two foreign languages taught per student.
- English dominates among the foreign languages taught. 46% of students in primary education and 91% in general secondary education in the EU are taught English as a foreign language. It is the most-favoured foreign language even when not a compulsory subject.
- Current indicators address languages taught. However, the European Commission has proposed the development of a language competence indicator, which will measure students' actual proficiency in this field.

8.1 Introduction

> "Language skills are unevenly spread across countries and social groups. The range of foreign languages spoken by Europeans is narrow, being limited mainly to English, French, German, and Spanish. Learning one lingua franca alone is not enough. Every European citizen should have meaningful communicative competence in at least two other languages in addition to his or her mother tongue."[249]

The Community has promoted the learning of foreign languages since the very beginning of Community co-operation in education at the beginning of the 1970s, but systematic support for language-learning in Europe has strengthened over time.[250] The modern information society is premised on the faculty of efficient communication, and in such a diverse linguistic and cultural landscape as Europe, this presupposes a commitment on the part of European citizens to acquire each other's languages. Early foreign-language acquisition is, moreover, the forerunner to the better cultural understanding and increased mobility within the emerging European area of lifelong learning. Furthermore, a labour force with practical language and intercultural skills enables European enterprise to compete effectively in the global market-place.

[249] European Commission Communication, "Promoting Language Learning and Linguistic Diversity: An Action Plan 2004–2006."
[250] European Council Resolution, 31 March 1995.

The Barcelona European Council in 2002 took an express interest in the 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."[251] In consequence, knowledge of foreign languages is now recognised as one of the key competencies that should be intensively cultivated within the lifelong learning framework.

The Commission on 23 November 2005 launched a Communication to the Council and the Parliament entitled 'A New Framework Strategy for Multilingualism', and a significant part of this is devoted to the question of citizens' language skills. Amongst other things, the Commission notes that, although the percentage of primary school students learning a foreign language is increasing,[252] the average number of foreign languages taught in secondary schools is still some way from the target set in Barcelona. Furthermore, there is a growing tendency for 'foreign language learning' to mean simply 'learning English'. The Commission reiterates its view that 'English is not enough'. The Communication sets out a number of key areas for action in education systems and practices.

Ministers of Education have also underscored the crucial role of languages within the education and training objectives. Objective 3.3 of the Detailed Work Programme deals specifically with the improvement of foreign-language learning, and an expert Working Group on languages was formed to examine in detail the two key issues identified: firstly, encouraging everyone to learn at least two languages in addition to their mother tongue, and increasing awareness of the importance of foreign language learning at all ages; and second, encouraging schools and training institutions in the use of more efficient teaching and training methods and motivating the continuation of language learning at a later stage of life.[253]

The Working Group on languages underlined that "improving language learning in the EU is a key factor in the Lisbon strategy as an essential building block of almost all aspects involved, from economic efficiency to mobility, from the creation of more and better jobs to social inclusion and cohesion."[254] In their report of 2004[255] the Working Group reported that it is clear that the role of languages in education policy is being re-appraised in a number of countries, in several cases with a fundamental re-orientation of priorities. The Working Group made a number of policy recommendations on issues ranging from early language learning to the training and mobility of language teachers. Several countries have clearly indicated the integration of many of the proposals put forward by the Working Group - others are in the process of implementing some of the proposals in national practice.

In almost all European countries the compulsory learning of a foreign language begins at primary level, and in some countries (Estonia, Luxembourg, Sweden and Iceland) a second foreign language is introduced before the end of primary education. In general, the trend is for the compulsory teaching of at least one foreign language to begin earlier and to last longer.[256] This accords with the recommendation of the Barcelona European Council regarding the teaching of foreign languages from a very early age.

In most European countries the teaching of a minimum of two foreign languages for at least one year during full time compulsory education is either compulsory or offered as an option. The general policy trend is for this provision to become compulsory for a longer period of

[251] Presidency Conclusions European Council, Barcelona, 2002 paragraph 44.
[252] Eurydice, *Key data on teaching languages at school in Europe*
[253] European Commission: Detailed Work Programme, pp.14-15
[254] Working Group Progress Report, "Improving foreign-language learning," Nov 2003.
[255] European Commission: Implementation of the education and training 2010 work programme, working group languages.
[256] Eurydice, Key Data on Teaching Languages at School in Europe 2005, p.27.

time. Of the six countries in which students learn two or more foreign languages at lower-secondary level, it is a compulsory provision in four: Luxembourg, the Netherlands, Finland and Iceland.

Indicators for monitoring performance and progress

In this area two indicators are currently used to monitor progress:

- *Average number of foreign languages learned per student in upper-secondary education*
- *Distribution of students according to number of foreign languages learned*

The indicators that have been chosen to monitor progress within this objective area are useful in addressing an important aspect of the first key issue cited above, namely "encouraging everyone to learn two or, where appropriate, more, languages in addition to their mother tongue" – with the caveat that they are related to language *teaching* rather than to language *learning* or language *competence*. The ultimate policy objective is that Europeans should have meaningful communicative competence in two Community languages other than their mother tongue. However, in the current absence of reliable data on the language skills of young people, the best possible indicator to measure progress in this field is directly linked to the first step in the language acquisition process, namely the aspect of the teaching of foreign languages.

Since the presence of a language on the curriculum cannot be taken to mean that students have achieved communicative competence in it by the time they leave school, the data needs to be complemented by the development of an indicator on actual language proficiency, as requested by the Barcelona European Council of 2002.[257] The Commission, in response to this request, has proposed the modalities for developing the necessary tools to gather data to feed the European Indicator of Language Competence.[258] The Commission is now awaiting the response of the Council to its proposed approach.

A language competence indicator could provide invaluable information to educationalists and decision-makers. It will inform about the multilingual capacities of young Europeans, on different approaches to language learning, on where examples of best policy practice can be found, and on progress towards the objective of improving foreign language learning.

8.2 Performance and progress on improving foreign language skills

8.2.1 Average number of foreign languages learned by students

The indicator *average number of languages learned per student,* records the average number of foreign languages studied per student in general and pre-vocational secondary education per school year, and is therefore of direct relevance to the most central objective of the Union, namely that all school students should be in command of "at least two other languages in addition to the mother tongue." However, as discussed above, the data presented here relates only to "languages taught," and does not directly inform us about foreign-language proficiency.

[257] Presidency Conclusions European Council, Barcelona, 2002. The Council called for the establishment of the indicator by 2003.

[258] European Commission Communication: "The European Indicator of Language Competence" 2005.

Chart 8.1: Average number of foreign languages learned per student in general and pre-vocational lower/upper-secondary education, 2003

	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU
ISCED 2	1.3		1.2	1.0	1.9	1.2	2.0	:	1.4	1.5	1.0	1.2	1.9	1.6	1.8	2.5	1.0
ISCED 3	1.6		2.2	2.0	2.2	1.4	2.3	:	1.3	2.0	0.9	1.2	1.4	1.8	1.6	3.1	1.3

	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO
ISCED 2	2.2	2.0	1.1	1.3	:	1.1	1.1	2.2	1.7	0.8	1.1	1.9	1.3	:	2.1	:	1.5
ISCED 3	0.7	2.6	1.7	1.9	:	2.0	2.0	2.8	2.2	:	1.7	1.9	1.9	0.7	1.7	:	:

Data source: Eurostat (UOE).

Additional notes:
AT, LT, BG, HU, RO: Mentally-handicapped students included in the total number of students in ISCED 2.
AT data refers to 2002
CZ, SK: Data refers to full-time students only.
BE: Data for German-speaking community missing. Students in special education excluded. Flemish Community of Belgium "Students in modular education are not included".
EE, FI: The national language, when taught in schools where it is not the teaching language, is counted as a foreign language.
FI; ISCED 3 includes adult education.
FR: Agricultural schools excluded. Technical education at ISCED 3 included.
IE, LU: Irish/Luxembourgish compulsory at primary and secondary level but not included as foreign language.
PL: Data refers to full-time students only. Students in special education included.
SE: ISCED 3 includes only graduate students. Data excludes adult education.
UK: Data available only for England, ISCED 2.
EU 25: ISCED 2: Includes 2002 data for GR, AT, PT, ISCED 3: Includes 2002 data for GR, AT; PT and UK not included

The average number of languages taught in general secondary education has changed very little since 1999/2000.The only country showing significant progress from 2001/02 until 2002/03 is the Netherlands, where the average has increased by 1.1.

The change in the Netherlands is due to a change in education policy, especially for upper general secondary education that prepares for university. Students were from 1999 obliged to take on three modern foreign languages, but the programmes were split into two different levels. Level 1: a global level (reading, listening, answering questions about a text), and level 2: a more profound level including literature and grammar. The result was a steep increase in level 1 programmes at secondary schools.

In most EU countries, more foreign languages are learned in general upper-secondary education than in lower-secondary. The figures for 2003 are estimated at 1.3 foreign languages per student in general lower-secondary education and 1.6 in upper-secondary.

However, there appear to be disparate models of foreign-language teaching in Europe. While in the majority of countries fewer languages are studied in lower- than in upper-secondary, the opposite appears to be the case in Spain, Ireland, Cyprus, Lithuania, Malta, and Iceland. The distribution of foreign languages in lower-secondary education ranges from approximately one foreign language per student in Belgium, the Czech Republic, Germany,

Ireland, Italy, Hungary, Slovenia, Slovakia, the UK and Bulgaria, to two or more in Estonia, Luxembourg, Malta, the Netherlands, Finland, and Iceland.

Averages of two or more languages are taught at upper-secondary level in eleven countries: Belgium, the Czech Republic, Denmark, Estonia, France, Luxembourg, Netherlands, Slovenia, Slovakia, Finland, and Sweden. Some of these countries have more than one official language. In Belgium, national languages (French, Dutch and German) are considered foreign languages in the regions where they are not spoken as the mother tongue. In Finland the national languages (Swedish and Finnish) are considered a foreign language where they are not teaching languages. In Estonia this is the case for Estonian and in Luxembourg for German and French.

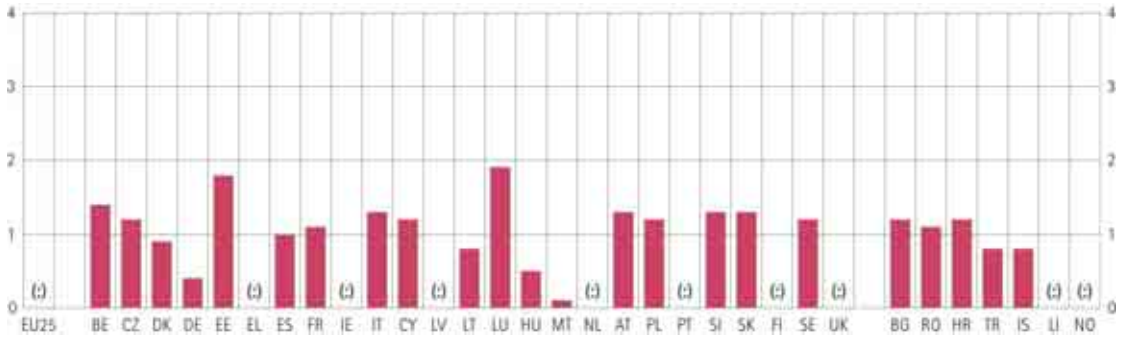
Vocational education

The average number of languages taught in vocational education has remained stable in most countries since 2000. No country teaches on average two languages or more to students in vocational programmes (upper secondary level). Consequently, students in vocational education are even further away from the goal of achieving command of two foreign languages.

The highest average number of foreign languages per student in vocational programmes is taught in Luxembourg, Estonia and Belgium.. While the lowest average number of foreign languages per student in vocational programmes is taught in Malta, Germany and Hungary.

Except for in Italy, the average number of foreign languages taught in vocational programmes (ISCED 3) is lower than in general upper secondary education.

Chart 8.2: Average number of foreign languages learned per student in vocational programmes 2003



	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU
2003	:		1.4	1.2	0.9	0.4	1.8	:	1.0	1.1	:	1.3	1.2	:	0.8	1.9	0.5

	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO
2003	0.1	:	1.3	1.2	:	1.3	1.3	:	1.2	:	1.2	1.1	1.2	0.8	0.8	:	:

Data source: Eurostat (UOE).

Additional notes:
See notes for chart 8.1

8.2.2 Distribution of students according to number of foreign languages learned

There are significant variations between European countries in the proportion of students learning foreign languages in lower and upper secondary education (Chart 8.3).

In the majority of countries almost every student learns at least one foreign language. Only in Ireland, Italy and Turkey more than 10 % of the students learn no foreign language.

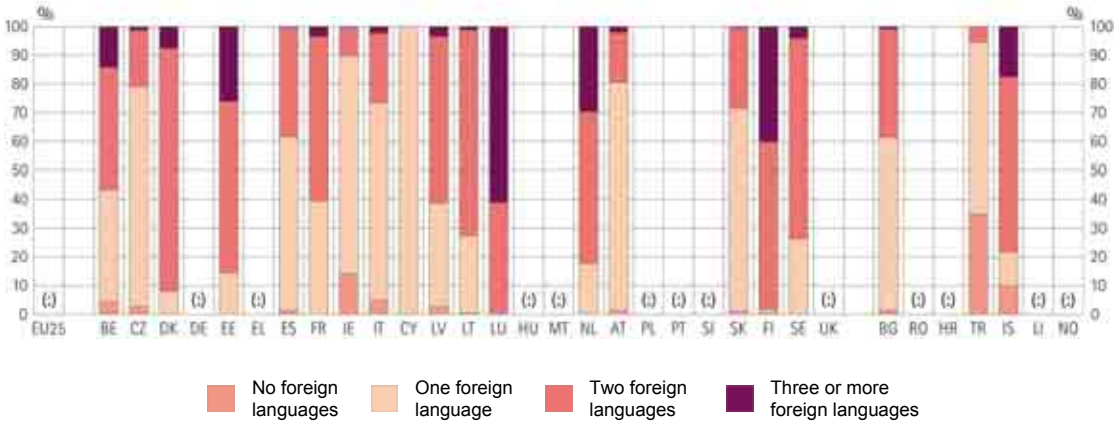
In most European countries the majority of students are taught two or more foreign languages. This is however not the case in the Czech Republic, Spain, Ireland, Italy, and Slovakia, where more than 50% of upper-secondary students are taught only one foreign language.

Some countries have even a substantial number of students learning three or more foreign languages. This is the situation in Estonia, Luxembourg, the Netherlands, Finland and Iceland, where more than 15% of the students learn three or more foreign languages.

The number of students learning two or more foreign languages is higher in upper secondary education than in lower secondary education. Curricula in the vast majority of countries offer all students the possibility of learning a minimum of two foreign languages during compulsory education.[259] In spite of this possibility, the proportion of students who learn at least two foreign languages in lower secondary education is less than 50 % in the majority of countries.

Overall, the data indicates that there is a slight increase in the proportion of students learning two or more foreign languages, but much remains to be done to achieve the goal set by the Barcelona European Council, namely that Europeans should learn at least two foreign languages.

Chart 8.3: Distribution of students in general and pre-vocational lower- and upper-secondary education, according to the number of foreign languages learned, 2003



	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU
	:		4.5	2.7	0.0	:	0.0	:	1.4	0.0	14.2	4.9	0.0	2.7	0.5	0.0	:
	:		38.9	76.2	8.1	:	14.5	:	60.2	39.4	75.6	68.3	100.0	36.0	26.9	0.0	:
	:		42.3	19.7	84.2	:	59.2	:	38.1	56.9	9.9	24.3	0.0	57.6	71.2	38.9	:
	:		14.3	1.4	7.7	:	26.2	:	0.3	3.6	0.3	2.4	0.0	3.6	1.3	61.1	:

	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO
	6.3	0.0	1.4	:	:	1.1	1.1	0.4	0.0	:	1.5	1.2	:	34.9	9.9	:	0.0
	:	17.7	79.1	:	:	:	70.2	1.2	26.3	:	59.9	:	:	59.6	11.8	:	:
	:	52.6	17.4	:	:	:	28.2	58.1	69.5	:	37.5	:	:	5.5	60.7	:	:
	:	29.7	2.1	:	:	:	0.5	40.3	4.2	:	1.0	:	:	0.0	17.6	:	:

Data source: Eurostat (UOE)

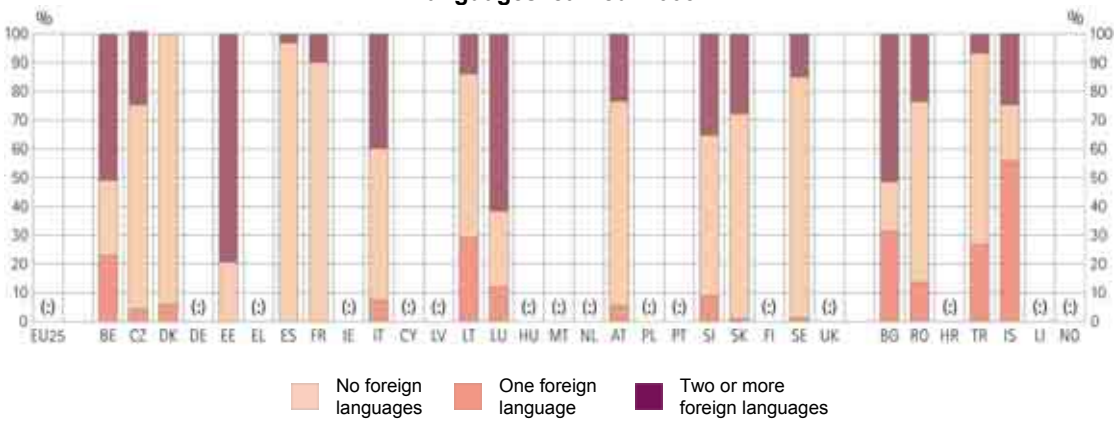
[259] Eurydice, *Key Data on Teaching Languages at School in Europe*, 2005

Additional notes:
AT, LT, BG: Mentally-handicapped students included in the total number of students in ISCED 2.
CZ, SK: Data refers to full-time students only.
BE: Data for German-speaking community missing. Students in special education excluded. Flemish Community of Belgium "Students in modular education are not included".
EE, FI: The national language, when taught in schools where it is not the teaching language, is counted as a foreign language.
FI; ISCED 2 includes adult education.
FR: Agricultural schools excluded. Technical education at ISCED 3 included.
IE, LU: Irish/Luxembourgish compulsory at primary and secondary level but not included as foreign language.
SE: ISCED 3 includes only graduate students. Data excludes adult education.
CY: The 100% figure relate to the number of pupils learning at least one foreign language
AT: data refers to 2002

Vocational education

Chart 8.4 shows the distribution of language learning among students in vocational education. Students are taught fewer languages in vocational education than in other upper secondary education. The proportion of students who learn no foreign languages accounts for more than 20% the students in Belgium, Lithuania, Iceland, Bulgaria and Turkey. It is noticeable, however, that also Belgium along with Estonia, Luxembourg and Bulgaria belong among the countries where more than 50% of students in vocational education learn two or more foreign languages.

Chart 8.4: Distribution of students in vocational education. according to the number of foreign languages learned. 2003



	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU
	:		22.9	4.3	5.9	:	0.0	:	0.0	0.0	:	7.5	0.0	:	29.2	12.0	:
	:		26.1	70.9	94.1	:	20.6	:	96.8	90.0	:	52.6	:	:	56.8	26.3	:
	:		51.0	25.6	0.0	:	79.4	:	3.2	10.0	:	39.9	:	:	14.0	61.7	:

	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO
	:	:	5.6	:	:	8.8	0.9	:	1.2	:	31.5	13.5	0.0	26.8	55.8	:	:
	:	:	70.8	:	:	55.9	71.3	:	83.8	:	17.0	62.9	:	66.4	19.6	:	:
	:	:	23.5	:	:	35.4	27.8	:	15.0	:	51.5	23.5	:	6.8	24.7	:	:

Data source: Eurostat (UOE)

Additional notes:
See notes chart 8.1

8.2.3 Languages taught

English dominates overwhelmingly in the catalogue of foreign languages taught. On average, 46% of students in primary education and 91% in general secondary education in the EU are taught English. This compares to an average of 3% taught French and 7% taught German at primary level, and 26% each taught French and German in general secondary education. Regarding French and German, there are divergent patterns in old and new Member States. French is more widely taught among the old EU countries and especially in the countries of southern Europe, including Malta and Cyprus. German is more popular in the Nordic and the central and eastern European countries. English, French, German, Spanish and Russian

together represent 95% of all foreign languages taught in most countries.[260]

As the Commission Communication "Promoting Language Learning and Linguistic Diversity" pointed out, it is in the interests of the Union to ensure that a much wider range of languages is taught and learned in Europe; this range should include the languages of trading partners and of regional and minority communities, as well as all the official languages of the European Union. In this way the diversity of the linguistic landscape in the Union can be preserved. However, English remains a popular subject in schools across Europe, even when not compulsory and when a wider range of languages is offered.

8.2.4 Linguistic competence

Taught languages are the first step in the language acquisition process. However, the data on number of languages taught may say little about students' real communicative competences. Since real communicative competencies are essential for efficient communication in such a diverse linguistic and cultural landscape as Europe, the Heads of State and Government called for the establishment of a European Indicator of Language Competence to measure language competences. When it has been established, this indicator may also facilitate a more productive comparison of language education methods, with a view to identifying and promoting effective pedagogical practices in the field of foreign-language teaching

Concerning linguistic competence there is, however, some information available on the foreign language skills of adults from a Eurobarometer opinion survey, which asked respondents aged more than 15 years old to assess their own skills. It is clear that an opinion survey is of a much lower reliability than a real competence indicator like for instance PISA and TIMSS. The figures reported should be analysed cautiously – however, there is no reason to believe that the self reported language skills are systematically wrong.

However, there is not an easy way of linking the data on languages taught reported earlier in this chapter and the self-reported languages skills of adults, because in addition to language competence obtained through compulsory education, adults' actual language competence is also influence by non-formal, informal and formal learning later in life. In this context, it is significant that ICT and language learning are the two main fields of non-formal adult education (please see strategic objective 2). Data from Eurobarometer, for which fieldwork took place in 2005, gives the following picture (Chart 8.5).[261]

Chart 8.5: Self reported language skills among adult population (aged 15 and over). 2005

Percentage of population saying they can hold a conversation in at least one language other than their mother tongue, 2005

Data source: Eurobarometer

[260] Eurydice, *Key Data on Teaching Languages at School in Europe*, 2005, pp.11, 53.
[261] European Commission: Eurobarometer 63.4 Europeans and languages

The data clearly shows a huge variety in the reported language skills in Europe. In general the self reported foreign language skills of the population in less populous countries are better than in bigger countries. In smaller countries like Luxembourg, Latvia, Malta, the Netherlands, Lithuania, Slovenia, Denmark, Sweden and Estonia close to 100% report that they are able to hold a conversation in a foreign language. This compares to Hungary (29%), UK (30%), Spain (36%), Italy and Portugal (36%) and France (45%). Germany is the best performing of the bigger countries, where 62% of the population report that they are able to hold a conversation in a foreign language.

8.3 Conclusion

The latest figures (2002-03) show that an average of 1.3 and 1.6 foreign languages are taught per student in the Member States in general lower- and upper-secondary education respectively. In vocational programmes (upper secondary level) the average number of foreign languages taught is considerably lower. This clearly falls short of the goal that all school students - indeed, all citizens - should be in command of at least two other languages in addition to their mother tongue. This signals a considerable challenge ahead. Given the ultimate objective of ensuring that Europeans achieve meaningful communicative competence in two foreign languages, the first step must be to raise the profile of foreign languages on school curriculum, so that students have greater access to languages, and at an earlier age. The average number of foreign languages taught per student will have to increase by at least 25% to raise the European standard to two foreign languages taught per student.

The available indicators on foreign-language teaching in Europe are limited to language teaching. They give an incomplete picture of the communicative competence of students, and Europeans in general. However, the linguistic competence indicator currently under development represents a major methodological advance and will contribute greatly to the validity and reliability of data in this area. It may also facilitate a more productive comparison of language education methods, with a view to identifying and promoting effective pedagogical practices in the field of foreign-language teaching.

IX MOBILITY AND COOPERATION

Main messages

- The percentage of students with a foreign citizenship is increasing within the EU.
- The European Educational Space is proving attractive - three quarters of the outgoing students from the EU countries go to another EU country.
- Mobility within the Erasmus programme continues to increase – by 6.3% between the academic years ending 2004 and 2005. More than 1.3 million students have now taken part in the Erasmus scheme since its inception in 1987/88. However, Erasmus mobility varies widely between countries, with some receiving far more students than they send abroad.
- The participation of teachers in the Erasmus programme is also increasing – in 2004/05 nearly 21 000 teachers benefited from the scheme, a 13 % increase on the previous period. The mobility of teachers in general forms an integral part of the Commission strategy to improve the education of teachers and trainers.
- The Erasmus Mundus programme and a number of initiatives within the Bologna process and the Copenhagen process demonstrate the efforts being made actively to promote mobility and to overcome the administrative and legal obstacles that make it difficult.

9.1 Introduction

Globalisation and the challenges of the modern knowledge-based economy have made it imperative for Europe to mobilise its assets, in all senses of the phrase. The strategy devised by the Lisbon Council in 2000 to increase Europe's competitiveness was underpinned by the principle of dismantling internal barriers and encouraging the movement of people, as a means of stimulating the labour market and increasing the professional and personal competence of the labour force.

Student mobility is one way of stimulating the free movement of persons within the European labour market, since those who have spent time abroad in educational institutions are more likely to exploit the benefits of an increasingly international labour market. They benefit from increased cultural and linguistic competence, as well as better knowledge of the labour markets abroad.

Moreover, student mobility helps developing European citizenship and European awareness. By increasing understanding of cultural and linguistic diversity, it supports the creation of a European area of Education and Training.

The Conclusions of the Lisbon Council, mindful of the potential of mobility as an economic and a social good, specifically requested that measures be taken to foster the mobility of students, teachers, trainers and research staff.[262] The Lisbon Council also asked the Commission and

[262] Presidency Conclusions European Council, Lisbon, 2000, paragraph 26.

Member States to take steps to remove obstacles to the mobility of researchers in Europe by 2002, and to attract and retain high-quality research talent in Europe.[263]

A joint recommendation by the Parliament and the Council in 2001 acknowledged the positive contribution of mobility to society as a whole and called for increased political cooperation to eliminate obstacles to movement.[264] The recommendation was followed up with substantial action, both at Community and national level, and has led to a series of positive results.[265] In relation to the mobility of students, teachers and trainers, the Detailed Work Programme on the follow-up of the Objectives of Education and Training Systems in Europe integrated the concept of mobility into a coherent framework, by designating "increased mobility and exchange" and "European co-operation" as two of thirteen strategic objectives of European education policy.[266] A Working Group formed to oversee the implementation of this element of the Detailed Work Programme has since focused on three priority themes, namely access to mobility, quality of mobility and opening up Europe to the rest of the world.[267] In relation to researchers, this was addressed in the Communication on a Mobility Strategy for the European Research Area, endorsed by the Council.[268]

The Community puts its policies on education into practice through the various channels of its mobility programmes, especially through the Erasmus scheme, which has supported over 1.3 million students to date, and the Leonardo da Vinci scheme for vocational training. Mobility has also been an important feature in recent major policy initiatives like the Bologna process, an intergovernmental process in which the Commission participates, which is intended to create a European Higher Education Area (an objective set for 2010) and to have a demonstrable positive impact on the mobility of higher education students in Europe.[269] In addition, the process set in motion by the Copenhagen declaration[270] includes a number of initiatives that should contribute to increasing and improving mobility, namely the Europass framework for the transparency of qualifications and competences[271] and the development of a credit transfer system for vocational education and training.

However, the need to increase the level of mobility for learning purposes should not detract attention from the *quality* of mobility. The Erasmus University Charter and the Erasmus Student Charter were introduced in 2003 to enhance the standard of organisational arrangements for the mobility of students, while the quality of mobility projects has recently been introduced as a priority under the Leonardo da Vinci programme. The Working Group on Mobility produced a draft charter on the quality of mobility in summer 2004, which was developed into a formal Commission proposal for a recommendation in September 2005[272] as called for by the Education Council of November 2004. The Recommendation consists of ten guidelines, addressed mainly to the sending and receiving organisations responsible for mobility.

The Joint Interim Report of the Council and the Commission on the implementation of the Detailed Work Programme states that despite some promising initiatives, for example as concerns quality of mobility, there are not enough national strategies on mobility. The main

[263] Ibid, paragraph 13.
[264] "The transnational mobility of people contributes to enriching different national cultures and enables those concerned to enhance their own cultural and professional knowledge and European society as a whole to benefit from those effects." Recommendation, 10 July 2001.
[265] See in particular the Second Implementation Report on "A Mobility Strategy for the European Research Area", SEC(2004)412 of 1.4.2004
[266] European Commission (2002) Detailed Work Programme, p.16.
[267] "Mobility and European co-operation" Progress Report 2004.
[268] Council Resolution December10 2001
[269] Communiqué, "Realising the European Higher Education Area," 2003.
[270] Adopted by the Ministers of 31 European countries, the European social partners and the Commission in November 2002.
[271] Cf. COM(2003)796 of 17 December 2003
[272] Recommendation of the European Parliament and of the council 2005/0179 (COD)

support continues to come from EU programmes. In addition, countries generally tend to promote mobility for incoming students more than for outgoing ones.[273] In a broader context, the Kok Report[274] on progress towards the Lisbon goals also came to the conclusion that disincentives to mobility persist in Europe, among them administrative and legal impediments, the under-funding of universities and the problem of recognition of qualifications. These issues were further explored in "Mobilising the Brainpower of Europe".[275] Efficient ways to promote mobility should make use of the well developed European instruments to facilitate recognition (ECTS, Diploma and Certificate Supplement, Bologna-conform study levels) and provide information on all relevant aspects of mobility via the internet.[276]

Although the Kok Report focuses on the mobility of researchers and scientists, it is a cause for concern that the EU may attract and retain fewer talented minds because of such disincentives. Mindful of these concerns, EU Ministers of Education had already set the objective of transforming the EU into "the most-favoured destination of students, scholars and researchers from other world regions."[277] To this end they have adopted a programme – ERASMUS Mundus – for the improvement of the quality of higher education and the promotion of intercultural understanding through co-operation with third countries.[278]

In short, although many processes are in motion, the mobility of students, trainees and teaching staff has yet to fulfil its great potential to increase European scientific and technological innovation, economic competitiveness, labour market flexibility and European cohesion.

Indicators for monitoring performance and progress

Four indicators have been selected in the objective area of mobility to monitor progress:

- *Foreign students enrolled in tertiary education (ISCED 5 and 6) as a percentage of all students enrolled in the country of destination, by nationality (European country or other countries)*
- *Percentage of students (ISCED 5-6) of the country of origin enrolled abroad (in a European country or other countries)*
- *Inward and outward mobility of Erasmus students and Leonardo da Vinci trainees*
- *Inward and outward mobility of teachers and trainers within the Socrates (Erasmus, Comenius, Lingua and Grundtvig) and Leonardo da Vinci programmes*

The chosen indicators are related to the recommendations in the Detailed Work Programme on monitoring volume, destinations and participation rates across Europe. They are restricted to geographical mobility because of the present difficulty of finding suitable data to construct indicators in areas such as the quality of mobility. Nevertheless, the indicators above yield useful information on, for example, the disparate student mobility levels of EU countries, the relative attractiveness of host countries within the EU, and the level of demand from both students and teachers/trainers for Erasmus places.

The first two indicators focus on mobility as collected through the UEO data. The latter two indicators focus on mobility undertaken through the European mobility programmes. The two data sets are to a certain extent complementary, since exchange programmes and short stays

[273] "Draft 2006 joint progress report of the Council and the Commission on the implementation of the "Education & Training 2010 work programme.

[274] *Facing the Challenge: The Lisbon Strategy for growth and employment*, November 2004.

[275] Communication from the Commission "Mobilising the Brainpower of Europe: enabling universities to make their full contribution to the Lisbon Strategy". 2005.

[276] Lanzendorf, Teichler and Murdoch (2005) *Study on student mobility on secondary and tertiary-level education and in vocational training (NATMOB)*

[277] European Commission, 2002, Detailed Work Programme.

[278] Decision of the Parliament and the Council, OJ L 345 of 31 December 2003.

abroad such as Erasmus and Leonardo should in principle be excluded from the UOE data collection if they last less than one year.

However, the indicators selected for monitoring progress in the field of mobility suffer from a number of important deficiencies.

The UOE[279] data collection focuses on tertiary students with foreign citizenship.[280] This is, however, not the same thing as mobile students. Firstly, many tertiary students with foreign citizenship are not really mobile students, since they may have lived all their life in the country where they are studying.[281] Consequently, a country with a liberal naturalization policy may have a lower percentage of 'foreigners' enrolled in its institutions. Second, a growing number of families live outside the country of which they are citizens; therefore students with home citizenship can now also be categorised as 'incoming' and thus mobile students.[282]

Also the two indicators on mobility undertaken through the European mobility programmes obviously do not contain the full scope of mobility. Most of Erasmus mobility is regarded as credit mobility, as it is temporary and denotes going to another country to gain knowledge and experience in addition to what is learned at home. In contrast, diploma mobility is mobility aimed at gaining a diploma abroad.[283]

Finally, because of low reliability of the statistical information on overall mobility in secondary and vocational education, no comparative analysis can be undertaken on these specific levels.[284]

In response to these deficiencies the Commission has established short-, medium- and long-term strategies to improve data accuracy and completeness. In the short term, a new study provides more comprehensive information on mobility in 32 European countries.[285] The UOE data collection in 2005 has been revised, in order to make it possible to identify "physical mobility" (*i.e.* non-resident students) more accurately, and to combine it in some cases with "cultural mobility" (*i.e.* non-citizens). First results from this exercise (with data from 2003/2004) are expected in March 2006. These more accurate data on mobility will continue to be collected in UOE, and more and more countries will be able to submit the data when the national data collections have been adapted to the new request.

9.2 Performance and progress in the field of mobility

9.2.1 Foreign students in tertiary education

There were approximately 1 040 000 students with foreign citizenship enrolled in tertiary education in the EU25 in the academic year 2002/03. This compares to 894,000 in 2001/02, *i.e.* an increase of more than 16%. The number of foreign students increased more than overall student numbers, consequently the percentage of students with foreign citizenship as a proportion of all students enrolled in tertiary education increased from 5.5% in the academic

[279] The UNESCO-UIS/OECD/EUROSTAT data collection on education statistics

[280] For a comprehensive overview of the present state of mobility statistics see "European Parliament Statistics on Student Mobility within the European Union." Final report to the European Parliament prepared by Kassel University, October 2002.

[281] In the study mentioned above it has been estimated that non-mobile students with foreign citizenship make up between 18.3% and over 50% of all students with foreign citizenship.

[282] The proportion of students with home citizenship among mobile students ranges from over 5% to almost 17%.

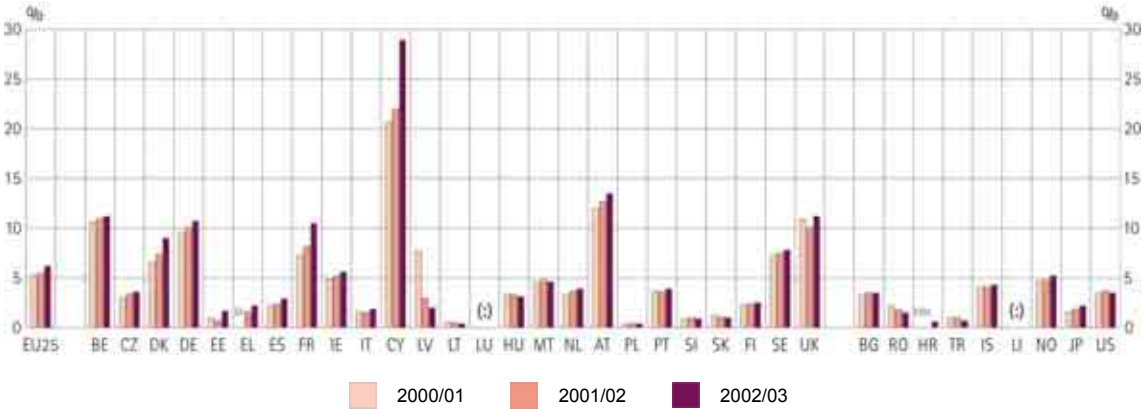
[283] The term 'diploma' is used in a wide sense and may refer to a degree, certificate or other diploma.

[284] Lanzendorf, U., U. Teichler and J. Murdoch (2005) Study on student mobility on secondary and tertiary-level education and in vocational training (NATMOB)

[285] Kelo, Teichler and Wächter al (2006) Eurodata

year 2001/02 to 6.2% in 2002/03 (see Chart 8.1).[286] All EU countries, with the exception of Hungary, Malta, Latvia, Lithuania, Poland, Slovenia and Slovakia, experienced an increase in the percentage of students with foreign citizenship enrolled in 2002/03 compared to 2001/02. Compared to the US (3.5%) and Japan (2.2%), the EU has a higher percentage of foreign-student enrolment.

Chart 9.1: Foreign tertiary students as % of all tertiary students (ISCED 5 and 6) enrolled in the country (academic years 2000/01, 2001/02, 2002/03).



	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
2000/01	5.3		10.6	3.0	6.6	9.6	1.0	:	2.2	7.3	4.9	1.6	20.7	7.7	0.5	:	3.4	4.6
2001/02	5.5		11.0	3.4	7.4	10.1	0.7	1.6	2.4	8.2	5.2	1.5	22.0	3.0	0.5	:	3.3	4.8
2002/03	6.2		11.2	3.6	9.0	10.7	1.7	2.2	2.9	10.5	5.6	1.9	28.9	2.0	0.4	:	3.1	4.6

	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO	JP	US
2000/01	3.3	12.0	0.4	3.7	0.9	1.2	2.2	7.3	10.9	3.3	2.2	:	1.0	4.1	:	4.7	1.6	3.5
2001/02	3.7	12.7	0.4	3.6	1.0	1.1	2.4	7.5	10.1	3.5	1.8	:	1.0	4.1	:	4.8	1.9	3.7
2002/03	3.9	13.5	0.4	3.9	0.9	1.0	2.5	7.8	11.2	3.5	1.5	0.6	0.7	4.3	:	5.2	2.2	3.5

Data source: **For EU, EEA and acceding countries: The UOE data collection. For the rest of the countries: UNESCO Institute of Statistics**

Additional notes:
DE, SI: Students in advanced research programmes (ISCED level 6) in these countries are excluded.
RO 2000/01-2001/02 Data excludes ISCED 6

However, the EU average of 6.2% obscures sizeable variations between countries in the percentage of foreign students enrolled in their tertiary education institutions. Austria, Belgium, Germany, France, Cyprus and the UK have the highest proportions, with foreign-student bodies of more than 10%, while in Lithuania, Luxembourg, Poland, and Slovenia the figures stand at less than 1%.

In 2003, 2.12 million students were enrolled outside their country of origin worldwide, of which 1.98 million (or 93%) were studying in the OECD area. The United States received most foreign students (in absolute terms) with 28% of total foreign students. However, the share of the United States in total foreign students reported to the OECD decreased by 2 percentage points (almost 7 %) between 2002 and 2003. The UK (12%), Germany (11%), France (10%), Spain (3%), Belgium (2%), Italy (2%), Austria (1%), Sweden (1%) and the Netherlands (1%) account for a combined figure of 43%. Australia is in fifth place with 9%. Altogether, these countries host nearly 81% of all foreign students.[287]

[286] Please see section 9.1 where the issue of mobility and foreign citizenship is discussed.
[287] OECD, *Education at a Glance*, 2005, p. 253-254.

9.2.2 Tertiary students enrolled outside their country of origin

For most EU countries, the majority of outgoing students are enrolled in another EU country (Chart 9.2). The only exception is the UK, where the majority of students studying abroad are studying outside EU. In 2002/03, on average 2.9% of EU-students were studying abroad, 2.2% were studying inside the EU.

Countries diverge greatly in terms of the proportion of their students enrolled abroad. In general, the larger countries have a lower proportion of students studying abroad than the smaller countries. This may be attributable to the greater number and range of universities within the larger countries. Another possible explanation is that students from smaller countries may be more likely to go abroad because they have already acquired the language of one of the larger countries. However, a major factor in the high mobility levels of students from countries such as Cyprus and Luxembourg is simply the absence or lack of capacity of native third-level institutions.

To illustrate: 68% of Luxembourgian students are enrolled abroad; Cyprus follows with 56.6% of its students at foreign institutions; Greece and Ireland are third with 8.5% and Slovakia fifth with 8.0%. At the other end of the scale come Spain, the UK and Poland, with 1.5%, 1.4% and 1.3% respectively of their students enrolled abroad.

Table 9.1: Percentage of tertiary students (ISCED 5-6) enrolled outside their country of origin, 2002/03

	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU
	2.2		2.9	1.8	2.3	2.1	3.0	7.2	1.2	2.1	7.6	1.8	48.5	1.6	2.3	64.2	1.7
	2.9		3.4	2.4	3.6	3.1	5.7	8.5	1.5	3.0	8.5	2.3	56.6	3.1	3.7	68.0	2.1

	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO
	5.8	1.9	4.9	1.1	2.6	1.8	7.9	3.0	2.0	0.6	6.8	2.2	6.7	1.8	13.7	:	4.4
	6.9	2.4	6.0	1.3	3.1	2.2	8.5	3.6	3.9	1.4	9.1	3.0	7.6	2.6	19.2	:	7.2

% studying in EU25 % studying in a country other than country of origin, total

Data source: Eurostat (UOE)

Additional notes:
DE, SI: Students in advanced research programmes (ISCED level 6) in these countries are excluded.
Data on non-national students are missing for several countries outside Europe. Many of these countries can however not be expected to have many European students enrolled. Data are however not available for e g Argentine, Brazil, Paraguay, Peru and South Africa. Russia reports data on non-national students from the Baltic countries only.'

An analysis of students enrolled outside their country of origin reveals that Asian and European students form the largest groups of foreign students enrolled in OECD and partner countries. In 2003, Asian students accounted for 46% of the total foreign student intake in participating OECD and partner countries, while Europeans and specifically students from the EU, with 29% and 17% respectively, came a not too distant second.[288]

9.2.3 Flow of students

Compared to the period 2001/02, most countries in 2002/03 experienced a slight increase both in terms of incoming and outgoing students. Chart 9.3 shows the flow of students within the UOE data collection. The chart shows that EU25 is a net receiver of students. Nearly 600 000 more students with non-EU citizenship study in the EU than EU-citizens studying outside EU (Chart 9.3). In 2002/03, 66.2% of students with foreign citizenship in the EU were from countries outside the EU. This figure comprised 8% from EEA and candidate countries, 2.5 % from the US and 55% from other parts of the world. The main proportion (429 000 out of

[288] OECD, *Education at a Glance*, 2005, p. 257.

575 000 students in EU25 with a foreign citizenship from other parts of the world) study in Germany, France and the UK.

There are several reasons for the high proportion of students from other parts of the world studying in EU 25. Firstly and most importantly, what is analysed is students with foreign citizenship and not mobile students *per se* – many of these students may have lived all their live in the country where they are studying (see section on quality of data). Another reason could be the wide variety of teaching languages in Europe, attracting students from all regions of the world. Finally, students from former colonies of European countries may be going to study in the formerly colonial countries with which they have cultural and historical ties, and whose language they may also share.

A country specific overview of flow of students is provided in Annex A27. The following analysis will highlight important findings also from the annex.

Some countries have many more students with a foreign citizenship than they themselves send citizens abroad. Within the EU this is the case for Belgium, France, Germany, Austria, Spain, Sweden and the UK. The opposite is the case for Estonia, Greece, Cyprus, Latvia, Lithuania, Malta, Poland, Slovenia and Slovakia.

The number of students from other parts of the world varies between countries. In Cyprus, France, Malta and Portugal, more than 80% of foreign students come from outside the EU, while the corresponding figures in Austria, the Czech Republic, Estonia and Greece were less than 40%.

Turkey is the candidate country that has the largest number of citizens studying abroad: 51 000 students. Of these 35 000 study in the EU 25. However, many Turks studying in the EU are already residents of the EU country in question, but have not obtained citizenship.

The European Educational Space is proving attractive; 75 % of outgoing students from EU 25 study in another EU 25 country. UK is the member state with the lowest amount of outgoing students to other countries in EU 25, with 45% of their students studying in EU25.

The US is a net receiver of EU 25-students. About twice as many students go to the US from the EU25 than from the US to the EU25. More than 20% of the outgoing students from the Czech Republic, Sweden and the UK study in the US.

Table 9.2: Flow of students within the UOE data collection. 2002/03

	Outgoing	*EU25*	*EEA/ candidate countries*	*US*	*Other*	**Incoming**	*EU25*	*EEA/ candidate countries*	*US*	*Other*
Number (x 1000)	468	352	9.5	52.5	54	1039	352	85.9	26.4	575
In percentage		75	2	11	12		34	8	2.5	55

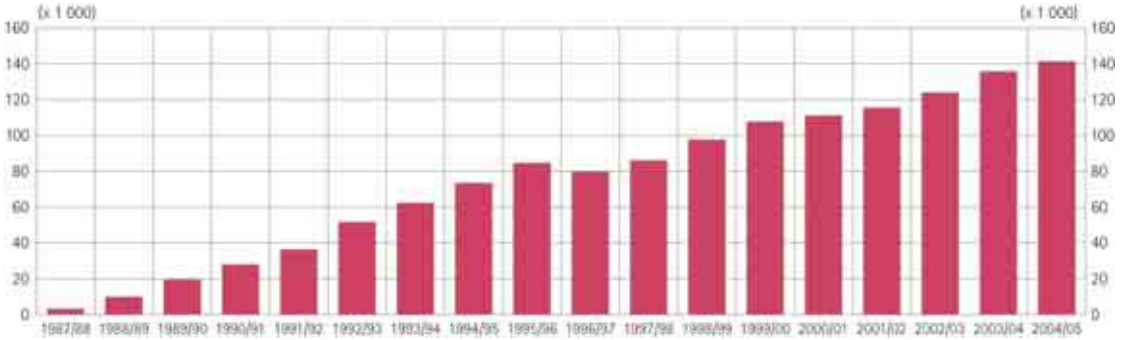
Data source: **For EU, EEA and acceding countries: The UOE data collection. For the rest of the countries: UNESCO Institute of Statistics**

9.2.4 Mobility of students within the Erasmus programme

A considerable part of overall mobility is supported through Community programmes such as Erasmus (Chart 9.4). Some interesting trends can be observed in relation to participation rates.[289]

[289] The detailed analysis of the 2004/05 data has not been performed yet. When it comes to more in debt analysis, conclusions are taken from European Commission, *Student and teacher mobility 2003/2004 –Overview of the National Agencies' final reports 2003/2004*.

Chart 9.2: Mobility of students within the Erasmus programme



	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97
Total (EU25 + EEA + CC2)	3 244	9 914	19 456	27 906	36 314	51 694	62 362	73 407	84 642	79 874
New Member States										
Iceland, Liechtenstein and Norway						474	825	1 066	1 318	1 282
Bulgaria, Romania										

	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	Total
Total (EU25 + EEA + CC2)	85 999	97 601	107 652	111 082	115 432	123 957	135 586	144 032	1 370180
New Member States		3 255	6 991	9 578	11 041	13 027	15 141	20 494	79527
Iceland, Liechtenstein and Norway	1 187	1 250	1 248	1 159	1 134	1 180	1 396	1504	15023
Bulgaria, Romania		1 250	1 833	2 297	2 569	3 313	3 756	3 741	18 759

Source: DG Education and Culture (Erasmus programme)

The total number of Erasmus students increased by 6.3% between 2003/04 and 2004/05. This was, however, less than the increase former years, between 2002/03 and 2003/04 the increase was 9.4%. The increase was substantial in the new member states, where the participation rose by 35%.

In 2004/05 Erasmus mobility involved 0.72% of the student population in EU and EEA countries. In effect, Erasmus mobility would have to more than double, i.e. affect 2% of students per year (implying that during a formal study period of five years, 10% of the student population would be affected), to reach the target of a 10% participation rate.[290]

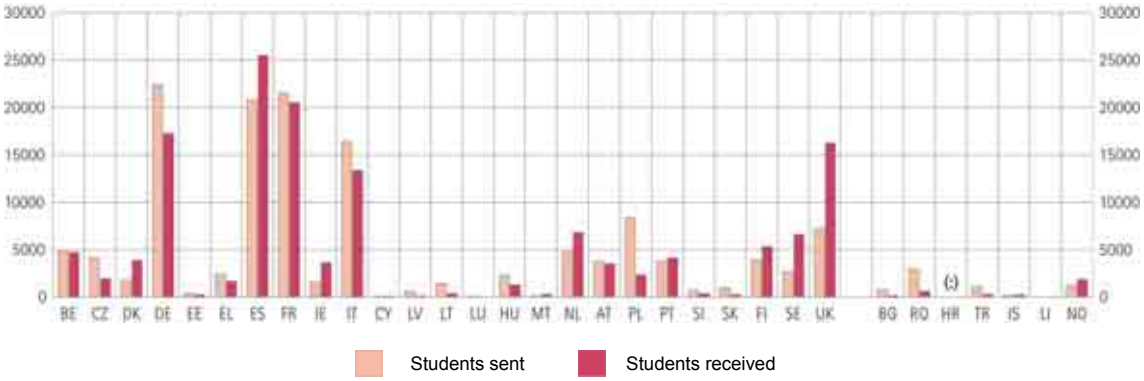
This increase should be seen in the context of the rise to 87% of the number of European Universities taking part in the Erasmus programme across 31 countries.[291]

Between 1987/88 and 2004/05, more than 1.3 million students studied abroad under the aegis of the Erasmus programme (increasing from 3200 in 1987/88 to 144 032 in 2004/05.).

Sweden, Denmark, Ireland, Malta and the UK are the biggest net receivers of Erasmus students; receiving more than double the number they send (Chart 9.5).[292]

[290] Specified in the Socrates decision n°253/200/EC of the European Parliament and of the Council of 24 Jan 2000.
[291] European Commission Press release 20. Oct 2005 IP/ 05/ 1313
[292] A country specific overview of Erasmus mobility is provided in Annex A29

Chart 9.3: Inward and outward mobility of Erasmus students, 2004/05



	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU
	137645		4833	4178	1793	22427	444	2491	20819	21561	1572	16440	93	607	1473	116	2316
	140858		4728	1946	3880	17283	275	1658	25511	20519	3649	13370	94	150	388	16	1297

	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO
	130	4743	3809	8390	3845	742	979	3932	2698	7214	779	2962	:	1142	199	26	1279
	310	6842	3539	2332	4166	378	284	5351	6626	16266	179	602	:	299	253	17	1841

Source: DG Education and Culture (Erasmus programme)

Additional notes: Data for Luxemburg from the year 2003/2004

In absolute terms Spain and France are the most popular destinations for Erasmus students. There have been no significant changes in the disciplinary background of foreign students – Business Management/Social Sciences remain the most common subject areas. Compared to the student population, Medical Sciences, Education, Sciences and other areas of study are conspicuously under-represented in the profile of Erasmus students. This may help to account for the fact that 61% of Erasmus students are female – women are generally well represented in the business and social sciences and in humanities, but under-represented in the more technical subjects.[293]

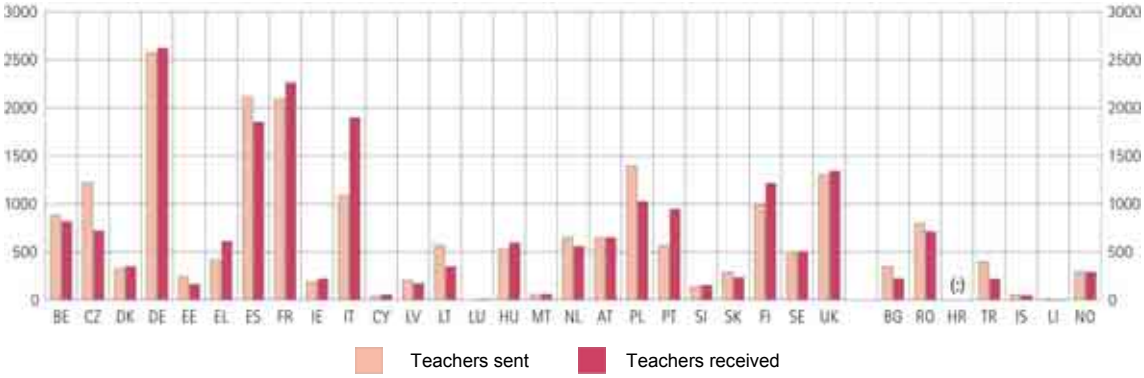
The average duration of Erasmus mobility has remained stable at between six and seven months since 1994/95.The EU Erasmus grant was 140 euros on average per month an increase by 13% compared to the previous year.

9.2.5 Mobility of teachers

The number of Erasmus teachers on mobility has been increasing steadily over the last seven years (from 7.800 in 1997/98 to a total of 20.877 in 2004/05). The growth rate in 2004/05 was 13%, compared to 9% over the previous period. Erasmus mobility affects around 1.9% of the teacher population in Europe.

[293] See also chapter on MST

Chart 9.4: Inward and outward mobility of Erasmus teachers, 2004/05



	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU
	19040		885	1226	325	2575	243	417	2115	2093	188	1086	39	205	571	0	528
	19385		818	720	349	2623	165	613	1854	2261	221	1897	54	170	347	9	595

	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO
	57	656	647	1394	570	139	291	992	484	1308	348	796	:	339	54	7	295
	59	558	649	1026	945	154	234	1216	503	1343	223	713	:	218	47	3	290

Source: DG Education and Culture (Erasmus programme)

Additional notes: Data for Luxemburg from the year 2003/2004

The growth rate of teacher mobility in the New Member states was 44% from 2003/04 to 2004/2005. The number of outgoing teachers rose in all the twelve new Member States and Candidate countries. The greatest increases in outgoing mobility were in Estonia (189%), Latvia (125%) and Slovakia (117%).

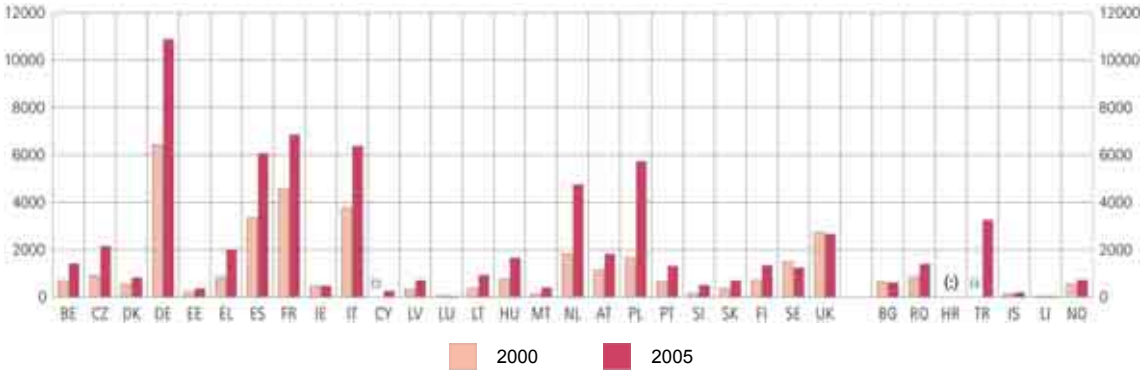
In 2003/04 Finland, Liechtenstein, the Czech Republic, Malta and Belgium had the highest ratio of outgoing teachers as a proportion of the teaching population. On average, the new Member States and Candidate countries have a higher ratio of outgoing teachers (as a proportion of the teaching population) than the EU15.

The most popular host countries are Germany and France, which together receive 25% of all Erasmus teachers, while Italy is notable for receiving considerably more teachers than it sends.

9.2.6 Mobility within the Leonardo da Vinci programme

The Leonardo da Vinci programme also supports a substantial level of mobility within the EU, amounting to more than 67,000 persons per year (Chart 9.7). From 2004 to 2005 participation increased by 15.8%. Relatively to the number of inhabitants in the country, countries like Greece, Cyprus, Estonia, Latvia, Lithuania, Malta, the Netherlands, Slovenia, Finland, Lichtenstein and Iceland have a high participation in Leonardo da Vinci.

Chart 9.5: Leonardo da Vinci placements 2000 – 2005



	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LU	LT	HU
2000	36615		701	909	560	6438	239	855	3353	4585	470	3790	*np*	322	59	375	768
2001	37520		850	795	679	7147	239	1110	3544	4125	349	4131	28	301	103	399	1014
2002	41481		939	1064	449	7806	252	1060	4873	4741	534	4327	61	386	76	491	792
2003	45718		921	1042	775	9978	201	1526	4694	5018	409	4991	120	343	103	460	725
2004	58379		938	2162	883	10440	352	1427	5199	5831	435	5272	311	543	150	751	1408
2005	67608		1410	2145	823	10880	363	2017	6071	6845	472	6368	258	709	37	931	1654
Per million inhabitant	148		136	210	152	132	269	183	143	114	117	110	353	306	82	270	163

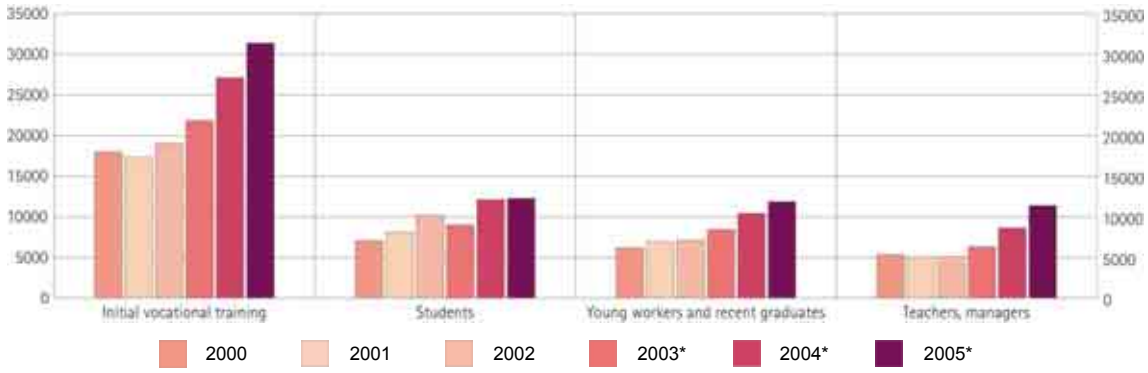
	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO
2000	139	1833	1151	1662	675	182	380	713	1487	2735	639	862	*np*	*np*	144	33	556
2001	83	1579	1384	1627	833	287	465	739	824	2785	622	785	*np*	*np*	172	16	505
2002	122	1895	1487	1958	866	295	513	833	941	2410	607	868	*np*	*np*	241	44	550
2003	141	2436	1611	1963	1051	316	509	912	1027	2025	803	870	*np*	*np*	137	47	564
2004	351	2245	1700	5159	945	789	977	973	914	3566	984	*950*	*np*	1883	134	46	661
2005	399	4748	1819	5728	1308	506	695	1330	1229	2658	613	1391	*np*	3251	190	41	719
Per million inhabitant	448	292	223	150	125	253	129	255	137	45	79	64	*np*	45	654	1195	157

Source: DG Education and Culture

Additional notes:
Np = no participation
Exchange 1: People in charge of human resources, planners, managers, vocational guidance specialist
Exchange 2: Instructors and tutors in the field of language skills.

Students undergoing initial vocational training account for almost 50% of the total mobility within the Leonardo da Vinci programme. The number of students remained almost unchanged. The largest increase from 2004 to 2005 was experienced by the group of teachers, an increase of 32%.

Chart 9.6 Number of beneficiaries per target group – Leonardo da Vinci - Mobility



Target group	2000	2001	2002	2003 *	2004 *	2005 *
Initial vocational training	**17988**	**17352**	**19065**	**21879**	**27145**	**31408**
Students	**7072**	**8129**	**10200**	**9037**	**12140**	**12307**
Young workers and recent graduates	**6184**	**6943**	**7145**	**8465**	**10450**	**11887**
Teachers, managers	**5371**	**5096**	**5110**	**6337**	**8644**	**11416**
Total	**36615**	**37520**	**41481**	**45718**	**58379**	**67608**

* estimation on the basis of selection

Source: DG Education and Culture (Leonardo da Vinci programme)

9.3 Conclusion

Mobility is a vital component in the establishment of a European area of knowledge and learning. Not only can the free movement of students and teachers support the dissemination of knowledge throughout Europe, but it can also enhance personal and professional skills and contribute to European awareness and cohesion.

Initiatives within the Copenhagen process, the Bologna process, and the Erasmus Mundus programme (in relation to incoming mobility from third countries), show that the Member States are committed to removing impediments and are actively promoting mobility.

The data analysis shows that most European countries experienced an increase in the percentage of foreign students enrolled from 2002 to 2003.

Mobility programmes like Erasmus and Leonardo da Vinci continue to increase their role in facilitating movement within Europe. More than 1.3 million students have now taken part in mobility through the Erasmus programme since its inception in 1987/88; the Leonardo da Vinci programme supports approximately 67,000 persons per year; and teacher mobility within the Erasmus programme is on the increase – in 2004/05 nearly 21 000 teachers in the EU25, EEA and candidate countries benefited from this scheme.

LIST OF ABBREVIATIONS

General abbreviations

AES	Adult Education Survey
ALL	Adult Literacy and Life-skills Survey
CVT	Continuing vocational education
CVTS	Continuing Vocational Training Survey
EU-SILC	EU-Statistics on Income and Living Conditions
GDP	Gross Domestic Product
GNP	Gross National Product
IALS	International Adult Literacy Survey
ICT	Information and Communication Technology
IEA	International Association for the Evaluation of Educational Achievement
ISCED	International Standard Classification of Education
IVET	Initial vocational education and training
LFS	Labour Force Survey
MST	Maths, science and technology
NACE	Classification of Economic Activities in the European Community
OMC	Open Method of Co-ordination
OECD	Organisation for Economic Co-operation and Development
PIRLS	Progress in International Reading Literacy Survey
PISA	Programme for International Student Assessment
PPS	Purchasing Power Standards
R&D	Research and development
TIMSS	Trends in International Mathematics and Science Study
UIS	UNESCO Institute for Statistics
UNESCO	United Nations Educational, Scientific and Cultural Organization
UOE	UIS/OECD/Eurostat (common data collection)
VET	Vocational education and training

Country Abbreviations

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

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ANNEXES

1. **FULL TITLE OF THE 29 INDICATORS FOR MONITORING PERFORMANCE AND PROGRESS OF EDUCATION AND TRAINING SYSTEMS IN EUROPE (Technical definitions)**

2. **STATISTICS AND GRAPHICS**

ANNEX 1

FULL TITLE OF THE 29 INDICATORS FOR MONITORING PERFORMANCE AND PROGRESS OF EDUCATION AND TRAINING SYSTEMS IN EUROPE (Technical definitions)

Teachers and Trainers

- Age distribution of teachers together with upper and lower retirement age.
- Number of young people in the 0-14 and 15-19 age groups and as percentage of total population.
- Ratio of pupils to teaching staff by education level.

Skills for the Knowledge Society

- Percentage of those aged 22 who have successfully completed at least upper secondary education (ISCED 3).
- Percentage of pupils with reading literacy proficiency "level 1" and lower on the PISA reading literacy scale.
- Distribution and mean performance of students, per country, on the PISA reading literacy scale.
- Distribution and mean performance of students, per country, on the PISA mathematical literacy scale.
- Distribution and mean performance of students, per country, on the PISA science literacy scale.
- Percentage of adults with less than upper secondary education who have participated in any form of education or training, in the last 4 weeks by age group (25-34, 35-54 and 55-64).

Mathematics, Science and Technology

- Students enrolled in mathematics, science and technology as a proportion of all students in tertiary education (ISCED 5A, 5B and 6).
- Graduates in mathematics, science and technology (ISCED 5A, 5B and 6) as percentage of all graduates (ISCED 5A, 5B and 6).
- Total number of tertiary (ISCED 5A, 5B and 6) graduates from mathematics, science and technology fields.
- Number of tertiary graduates in mathematics, science and technology per 1000 inhabitants aged 20-29 - Broken down by ISCED levels 5A, 5B and 6.

Investments in Education and Training

- Public expenditure on education as a percentage of GDP
- Private expenditure on educational institutions as a percentage of GDP
- Enterprise expenditure on continuing vocational training courses as a percentage of total labour costs.
- Total expenditure on education per pupil/student (PPS), by level of education
- Total expenditure on education per pupil/student (GDP per capita).

Open Learning Environment

- Percentage of population aged 25-64 participating in education and training in 4 weeks prior to the survey by level of educational attainment.

Making Learning more Attractive

- Hours in continuing vocational training (CVT) courses per 1000 working hours worked (only enterprises with CVT courses), by NACE.
- Hours in continuing vocational training (CVT) courses per 1000 working hours (all enterprises), by NACE
- Participation rates in education by age and by level of education.
- Share of the population aged 18-24 with only lower secondary education and not in education or training

Foreign Language Learning

- Distribution of lower/ upper secondary pupils learning foreign languages.
- Average number of foreign languages learned per pupil in upper secondary education.

Mobility

- Inward and outward mobility of teachers and trainers within the Socrates (Erasmus, Comenius, Lingua and Grundtvig) and Leonardo da Vinci programmes
- Inward and outward mobility of Erasmus students and Leonardo da Vinci trainees
- Foreign students enrolled in tertiary education (ISCED 5 and 6) as a percentage of all students enrolled in the country of destination, by nationality (European country or other countries)
- Percentage of students (ISCED 5-6) of the country of origin enrolled abroad (in a European country or other countries)

ANNEX 2

STATISTICS AND GRAPHICS

A1 Trends in the number of pupils and students in EU-25 (in millions)

ISCED		1999	2000	2001	2002	2003
0 (pre-school)		12.8	12.8	12.9	12.8	12.7
1 (primary)		30.6	29.6	28.5	28.0	27.6
2 (lower sec)		20.1	21.0	21.7	22.3	22.3
3 (upper sec)		23.2	23.2	23.5	24.1	23.6
of which	general	9.5	10.4	10.5	10.2	10.5
	vocational	13.7	12.8	13.0	13.9	13.1

Data source: **Eurostat**

A2 Changes in number of pupils in primary (1), lower secondary (2) and upper secondary education (3) from 1999 to 2003.

	Countries experiencing an increase in the number of pupils of more than 10 %	Countries experiencing an increase in the number of pupils of 10 % or less.	Countries experiencing a decrease in number of pupils of 10 % or less	Countries experiencing a decrease in number of pupils of more than 10%
1 Primary	DK	EL, LU, NL, FI, SE, TR, NO.	BE, ES, FR; IE, IT, CY, HU, MT, AT, PT, SI, UK	CZ, DE, EE, LV, LT, PL, SK, BG, RO
2 Lower sec	BE, EE, LT, PT, SE, NO	DK, DE, ES, IT, CY, LV, LU, NL, AT, SK, UK	CZ, EL, FR, IE, HU, MT, SI, FI, BG, RO	
3 Upper sec	BE, CZ, MT, UK, TR.	DK, DE, EE, IT, CY, LV, LU, HU, AT, SI, FI, BG, RO,	EL, FR, IE, NL, PT, SK	ES, LT, PL, SE, NO.

Data source: EUROSTAT. No figures for PL ISCED 2

A3: Breakdown of 15- year old students by nationality

Breakdown of 15-year old students by nationality, 2000

	EU		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
Native students	92.6		88.0	98.9	93.8	84.8	:	95.2	98.0	88.0	97.7	99.1	:	77.9	:	65.8	98.3	:
1st generation students	3.9		8.6	0.6	2.4	5.1	:	0.5	0.6	9.8	0.9	0.2	:	1.5	:	17.8	0.1	:
Non-native students	3.5		3.4	0.5	3.8	10.1	:	4.3	1.4	2.2	1.4	0.8	:	20.6	:	16.4	1.6	:

	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO	JP	US
Native students	:	90.4	99.7	96.9	:	:	98.7	89.5	90.4	:	:	:	:	99.2	79.4	95.4	99.9	86.4
1st generation students	:	3.7	0.0	1.8	:	:	0.2	4.7	7.0	:	:	:	:	0.2	10.2	1.5	0.0	7.4
Non-native students	:	5.9	0.2	1.4	:	:	1.0	5.9	2.6	:	:	:	:	0.6	10.4	3.1	0.1	6.1

Data source: OECD, Pisa (2003), EU figure refers to 18 EU countries only

Breakdown of 15-year old students by nationality, 2003

	EU		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
Native students	91.9		88.2	98.7	93.5	84.6	:	92.6	96.6	85.7	96.5	97.9	:	90.6	:	66.7	97.7	:
1st generation students	4.4		6.3	0.5	3.5	6.9	:	0.5	0.6	10.8	1.0	0.4	:	8.3	:	15.8	0.1	:
Non-native students	3.8		5.5	0.8	3.0	8.5	:	6.9	2.8	3.5	2.5	1.7	:	1.1	:	17.4	2.2	:

	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO	JP	US
Native students	89.0	86.7	100	95.0	:	99.1	98.1	88.5	:	:	:	:	:	99.0	82.9	94.4	99.9	85.6
1st generation students	:	4.1	0.0	2.3	:	:	0.0	5.7	:	:	:	:	:	0.2	7.6	2.3	0.0	8.3
Non-native students	:	9.2	0.0	2.7	:	:	1.8	5.9	:	:	:	:	:	0.8	9.4	3.4	0.1	6.1

Data source: OECD, Pisa (2003), EU figure refers to 18 EU countries only

A4: Distribution of teachers teaching in public and private institutions by ISCED level and age group, 2003/04

ISCED 1

Age group	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
< 30	23.2	:	11.7	7.0	:	:	11,9	15,0	24,0	1,8	49,7	18,0	14,9	27,7	14,7	37.7
30-39	27.1	:	22.4	17.3	:	:	23,6	28,1	22,4	22,8	42,2	31,0	33,8	23,7	32,0	17.5
40-49	29.8	:	25.3	26.7	:	:	32,8	33,0	30,7	37,3	5,3	29,0	30,0	24,2	37,3	14.3
> = 50	19.9	:	40.6	49.0	:	:	31,7	23,8	23,0	38,0	2,7	22,0	21,4	24,3	16,1	30.6

	NL	AT	PL	PT	SI	SK	FI	SE	UK		BG	RO	HR	TR	IS	NO
< 30	19,2	11,5	16,9	16,1	17,9	22,1	13,8	11,1	22,4		10,0	31,6	:	:	14,3	12,8
30-39	20,3	28,1	39,7	24,3	35,2	24,9	32,7	19,9	23,1		39,2	21,2	:	:	30,6	26,4
40-49	34,6	40,9	30,4	34,5	33,4	24,8	29,3	24,8	25,6		35,3	28,8	:	:	28,6	24,7
> = 50	26,0	19,5	13,0	25,2	13,4	28,3	24,2	44,3	28,9		15,6	18,4	:	:	26,5	36,1

Data source: Eurostat (UOE)

Additional notes:
BE Data for Belgium exclude the German Community and independent private institutions
DK Includes ISCED 2 teachers
IS Includes ISCED 2 teachers
LU Public sector only
NL Includes ISCED 0 teachers

ISCED 2 and 3

Age group	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
< 30	13,8	:	:	4,2	:	:	8,7	12,6	11,7	0,3	21.3	15.9	16.6	15.4	15.3	35.3
30-39	22,5	:	:	15,2	:	:	35,5	28,0	25,7	9,1	21,0	23.5	26.9	26,2	25.3	24.2
40-49	33,4	:	:	29,3	:	:	33,4	24,9	29,3	38,6	40,2	30.8	31.5	26,8	32.7	17.0
> = 50	30,3	:	:	51,3	:	:	22,5	34,5	33,3	52,0	17.6	29.8	25.0	31,6	26.8	23.5

	NL	AT	PL	PT	SI	SK	FI	SE	UK		BG	RO	HR	TR	IS	NO
< 30	9,8	11,3	22,1	17.4	11,0	18,8	7,9	11,4	13,7		12,9	25,4	0,0	7,8	7,8	7,8
30-39	16,9	26,0	31,3	35.6	33,8	24,2	25,9	21,5	22,7		27,2	21,3	0,0	20,9	20,9	22,1
40-49	34,2	41,9	28,4	30.0	33,9	28,8	30,3	23,8	31,4		35,5	22,0	0,0	30,9	30,9	26,6
> = 50	39,1	20,9	18,2	17.1	21,3	28,2	35,9	43,3	32,3		24,4	31,3	0,0	40,4	40,4	43,5

Data source: Eurostat (UOE)

Additional notes:
BE Data exclude the German Community and independent private institutions
Teachers working in social advancement education in the French Community are not included
Data include ISCED 4 teachers
FI Includes teachers in ISCED 4 and 5 vocational and technical programmes
IS ISCED 4 teachers partly included
LU Public sector only
MK Includes ISCED 4 teachers
NO Includes ISCED 1 and ISCED 4 teachers
IE, UK Includes ISCED 4 teachers

A5: Ratio of pupils to teaching staff

2003

	EU25	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU
ISCED 1	15.0	13.1	18.3	10.8	18.7	:	12.1	14.3	19.4	18.7	10.9	19.1	15.9	12.1	10.8	10.6
ISCED 2	13.3	10.6	14.3	:	15.6	:	8.7	13.3	13.8	13.9	10.3	12.8	13.1	9.0	9.0	10.6
ISCED 3	12.9	9.6	12.6	13.4	13.7	:	8.6	7.9	10.7	:	10.8	12.0	12.2	8.3	:	13.2

	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	NO
ISCED 1	18.4	16.0	14.4	11.9	11.3	12.8	19.4	16.6	12.3	20.0	17.2	17.8	18.0	25.9	11.3	11.7
ISCED 2	10.0	:	10.0	12.6	8.9	13.0	13.9	9.8	12.1	17.4	13.3	13.7	12.6	:	:	10.4
ISCED 3	10.1	15.7	10.2	13.5	8.3	14.6	14.0	15.9	14.1	20.3	11.9	15.8	11.7	18.0	10.7	9.2

Data source: Eurostat (UOE)

2002

	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
ISCED 1	13.1	18.9	10.9	18.9	:	12.5	14.6	19.4	19.5	10.6	19.4	16.9	12.4	11.6	10.8	19.1
ISCED 2	:	14.4	:	15.7	:	9.3	13.7	13.9	14.6	9.9	13.0	13.5	8.5	9.0	10.7	9.7
ISCED 3	9.3	12.5	13.1	13.6	:	9.3	8.3	10.6	:	10.3	11.7	12.7	8.3	:	13.1	10.1

	NL	AT	PL	PT	SI	SK	FI	SE	UK		BG	RO	HR	TR	IS	NO
ISCED 1	17.0	14.4	12.8	11.0	12.6	20.1	15.8	12.5	19.9		16.8	17.7	:	27.5	11.4	:
ISCED 2	:	9.8	14.1	9.3	13.0	14.0	10.6	12.2	17.6		12.8	13.3	:	:	:	11.1
ISCED 3	15.9	10.3	13.7	7.5	13.7	13.3	16.0	14.1	21.6		11.7	14.4	:	17.7	10.6	10.3

Data source: Eurostat (UOE)

2000

	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
ISCED 1	:	21.0	10.7	19.8	14.9	13.4	14.9	19.5	21.5	11.0	18.1	18.0	16.7	:	10.9	19.1
ISCED 2	:	15.6	10.6	15.7	11.2	10.8	13.7	14.5	15.9	10.4	:	12.7	11.4	:	10.9	9.0
ISCED 3	:	13.4	12.1	19.7	10.1	10.5	9.7	10.6	:	10.5	12.7	13.3	:	:	9.9	16.2

	NL	AT	PL	PT	SI	SK	FI	SE	UK		BG	RO	HR	TR	IS	NO
ISCED 1	16.8	:	12.7	12.1	13.4	18.3	16.9	12.8	21.2		16.8	:	:	30.5	12.7	:
ISCED 2	:	:	11.5	10.5	13.8	13.5	10.7	12.8	17.6		12.1	15.0	:	:	:	11.6
ISCED 3	17.1	:	16.9	8.0	13.1	12.8	17.0	15.2	19.3		11.6	12.8	:	14.0	9.7	9.7

Data source: Eurostat (UOE)

Additional notes

ISCED 1

2002-2003 BE Data exclude the German Community and all independent private institutions
2002-2003 DK ISCED 2 is included in ISCED 1
2002 LT The methodology to calculate full-time equivalent teachers has improved 2002, data not comparable with previous years
2001 HU The calculation of full-time equivalent teachers has been improved 2001 compared to previous years
2000-2003 IS ISCED 2 is included in ISCED 1
2000-2003 LU Public sector only
2000-2003 NL ISCED 1 includes ISCED 0
2000-2003 PT Data on full-time equivalent teachers are not available, all teachers - head-counts - included in the denominator. Data do not include Azores and Madeira

ISCED 2

2000-2003 IE ISCED 2 includes ISCED 3 and 4
2000-2003 LU Public sector only. ISCED 2 includes ISCED 3
2000-2003 LT ISCED 3 general programmes are included in ISCED 2. The methodology to calculate full-time equivalent teachers has improved 2002, data not comparable with previous years
2000-2002 NO ISCED 2 includes ISCED 1
2001 HU The calculation of full-time equivalent teachers has been improved 2001 compared to previous years
2000-2003 PT Data on full-time equivalent teachers are not available, all teachers - head-counts - included in the denominator. Data do not include Azores and Madeira

ISCED 3

2002 BE ISCED 3 includes ISCED 2 and 4. 2003 BE ISCED 3 includes ISCED 4. 2000-2003 BE Data exclude the German Community and all independent private institutions. Teachers in social advancement education in the French Community are not included
2000-2003 NL ISCED 3 includes ISCED 2 The methodology for statistics on personnel in secondary education has changed 2002. The decrease in the pupil/teacher ratio is mainly a result of the changed methodology
2000-2003 LT ISCED 3 includes vocational programmes only, general programmes are included in ISCED 2. The methodology to calculate full-time equivalent teachers has improved in 2002, data not comparable with previous years
2001 HU The calculation of full-time equivalent teachers has been improved 2001 compared to previous years
2000 CY ISCED 2 is included in ISCED 3
2000-2002 ES ISCED 3 includes ISCED 4
2000-2003 PT Data on full-time equivalent teachers are not available, all teachers - head-counts - included in the denominator. Data do not include Azores and Madeira
2000-2003 FI ISCED 3 includes ISCED 4 and 5 vocational and technical programmes
2000-2003 UK ISCED 3 includes ISCED 4
2000-2003 IS ISCED 4 is partly included in ISCED 3 2000-2002 NO ISCED 3 includes ISCED
2000-2003 NO ISCED 3 includes ISCED 4

A6: Average mathematics and science scores, 8th grade students, according to TIMSS 1999 and 2003

Country	Mathematics score		Science score	
	1999	2003	1999	2003
Belgium (Fl)	558	537	535	516
Netherlands	540	536	545	536
Estonia		531		552
Hungary	532	529	552	543
Slovakia	534	508	535	517
Sweden		499		524
Latvia	505	508	503	512
Lithuania	482	502	488	519
Slovenia	530	493	533	520
UK-Scotland		498		512
Italy	479	484	493	491
Cyprus	476	461	460	441
Czech Republic	520		539	
Finland	520		535	
Bulgaria	511		518	
UK-England	496		538	
Romania	472		472	
Norway		459		494
FYR Macedonia	447		458	
Turkey	429		433	

Data source: IEA (TIMSS 1999 and 2003)

A7: Mean performance on the mathematics /space and shape scale

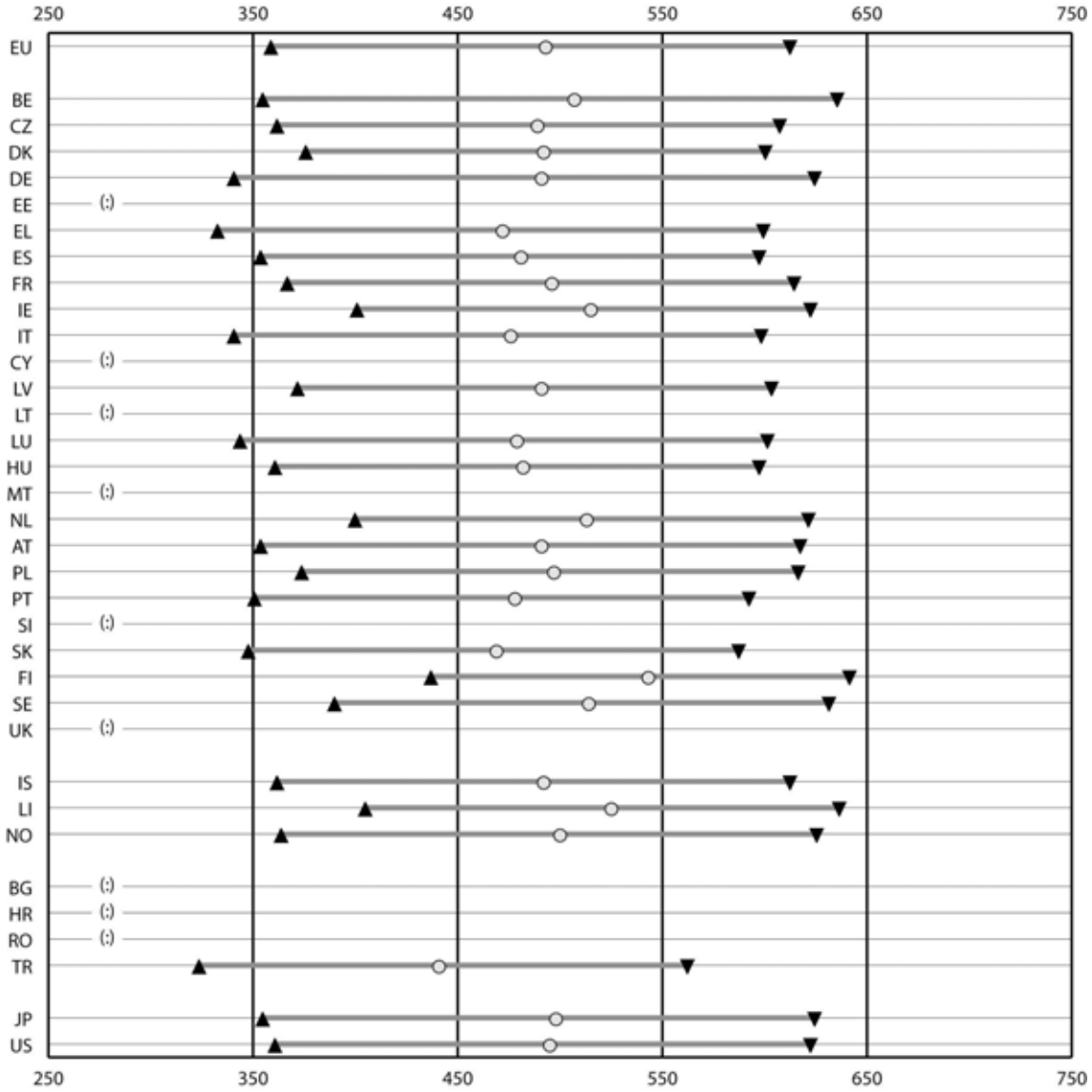
	EU		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
Results for the mathematics/space and shape scale																		
2000	481		502	510	526	486	:	450	473	501	474	455	:	452	:	449	478	:
2003	492		530	527	512	500	:	437	476	508	476	470	:	486	:	488	479	:

	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO	JP	US
Results for the mathematics/space and shape scale																		
2000	:	510	470	440	:	:	533	510	505	:	:	:	:	519	490	455	565	461
2003	526	515	490	450	:	505	539	498	:	:	:	:	417	504	483	470	553	472

Data source: OECD PISA database

Additional notes:
EU figure: weighted average based on number of pupils enrolled and data for 16 countries (NL, LU not representative in 2000, UK in 2003, SK not participating in 2000). Significance results for the following countries are with a confidence level of at least 90% higher in 2003 than in 2000: BE, CZ, DE, IT, LV, PL, lower: DK, IS

A8: Distribution and mean performance of students, per country, on the PISA reading literacy scale, 2003

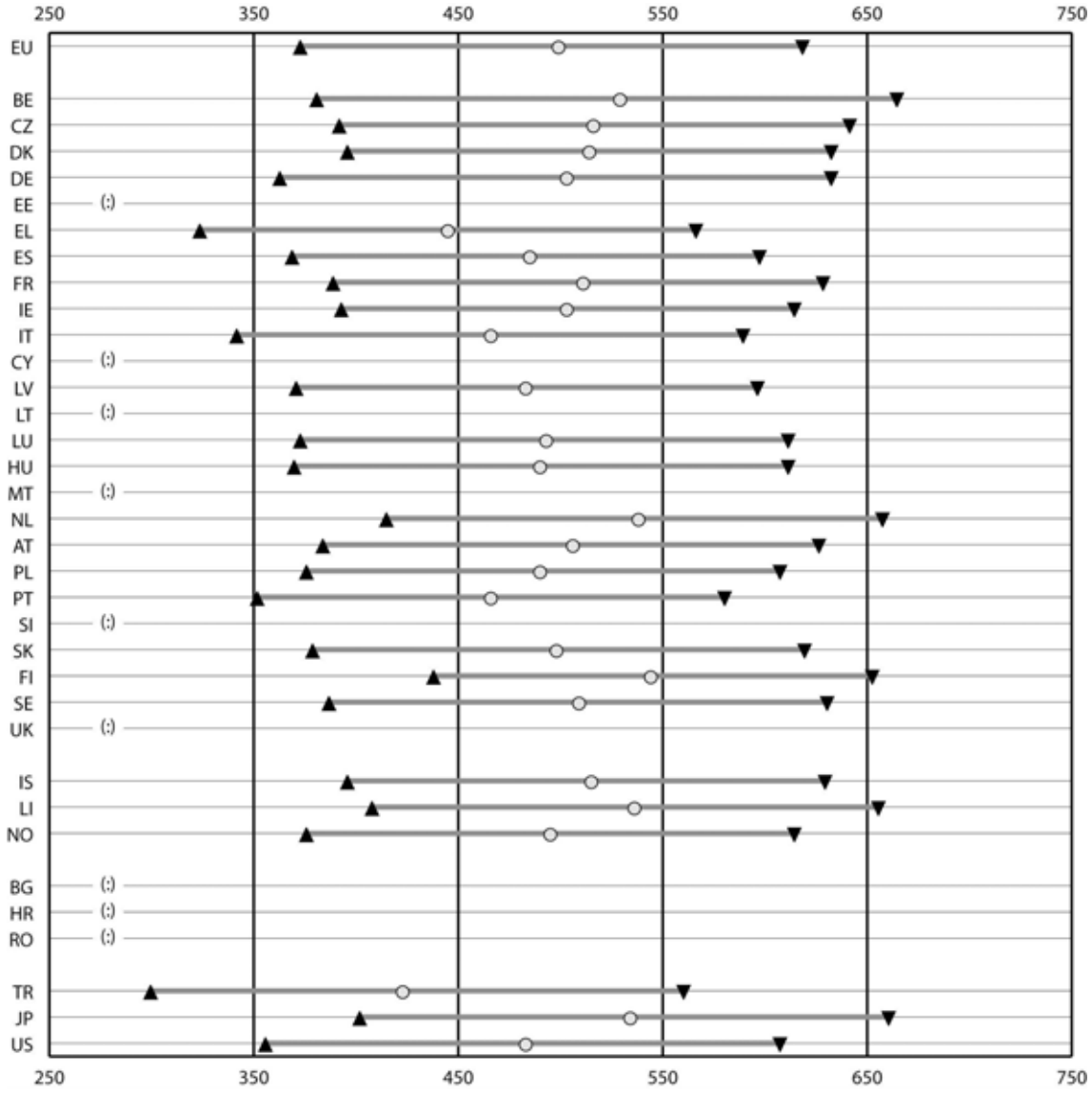


	EU		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
mean	491		507	489	492	491	:	472	481	496	515	476	:	491	:	479	482	:
SE	:		2.6	3.5	2.8	3.4	:	4.1	2.6	2.7	2.6	3.0	:	3.7	:	1.5	2.5	:
P10	359		355	362	376	341	:	333	354	367	401	341	:	372	:	344	361	:
SE	:		6.6	6.9	4.6	6.8	:	6.2	4.9	7.0	4.6	6.8	:	5.3	:	2.9	4.2	:
P90	612		635	607	600	624	:	599	597	614	622	598	:	603	:	601	597	:
SE	:		2.1	3.8	2.7	3.2	:	4.4	2.8	2.7	3.0	2.1	:	4.6	:	2.1	3.4	:

	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO	JP	US
mean	513	491	497	478	:	469	543	514	:	:	:	:	441	492	525	500	498	495
SE	2.9	3.8	2.9	3.7	:	3.1	1.6	2.4	:	:	:	:	5.8	1.6	3.6	2.8	3.9	3.2
P10	400	354	374	351	:	348	437	390	:	:	:	:	324	362	405	364	355	361
SE	5.2	6.3	5.0	7.1	:	5.8	3.1	4.3	:	:	:	:	5.3	4.8	11.7	4.7	6.5	5.2
P90	621	617	616	592	:	587	641	631	:	:	:	:	562	612	636	625	624	622
SE	2.9	3.7	3.4	3.5	:	3.0	2.2	2.9	:	:	:	:	11.4	2.8	11.8	3.9	4.8	3.5

Data source: OECD PISA database (EU figure is weighted average based 19 countries).

A9: Distribution and mean performance of students, per country, on the PISA mathematics literacy scale, 2003

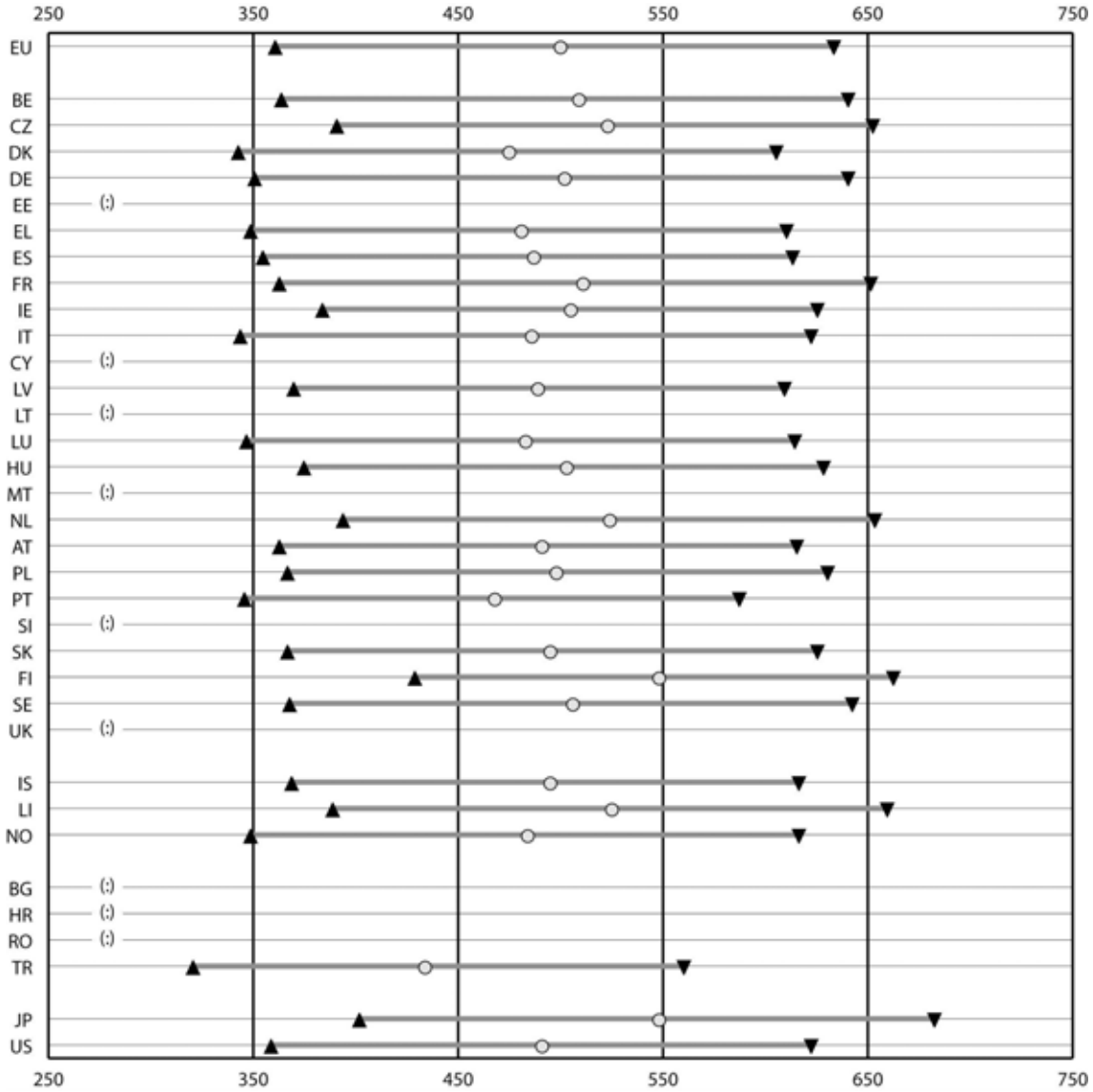


	EU		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
mean	497		529	516	514	503	:	445	485	511	503	466	:	483	:	493	490	:
SE	:		2.3	3.5	2.7	3.3	:	3.9	2.4	2.5	2.4	3.1	:	3.7	:	1.0	2.8	:
P10	373		381	392	396	363	:	324	369	389	393	342	:	371	:	373	370	:
SE	:		4.6	5.7	4.5	5.6	:	5.1	3.5	5.6	3.2	5.9	:	5.1	:	2.7	4.2	:
P90	618		664	641	632	632	:	566	597	628	614	589	:	596	:	611	611	:
SE	:		2.4	4.3	3.7	3.5	:	5.3	3.5	3.6	3.6	3.6	:	4.4	:	3.2	4.7	:

	NL	AT	PL	PT	SI	SK	FI	SE	UK	IS	LI	NO	BG	HR	RO	TR	JP	US
mean	538	506	490	466	:	498	544	509	:	515	536	495	:	:	:	423	534	483
SE	3.1	3.3	2.5	3.4	:	3.3	1.9	2.6	:	1.4	4.1	2.4	:	:	:	6.7	4.0	2.9
P10	415	384	376	352	:	379	438	387	:	396	408	376	:	:	:	300	402	356
SE	5.8	4.4	3.6	5.3	:	5.8	2.8	4.4	:	2.7	9.8	3.4	:	:	:	5.0	6.3	4.5
P90	657	626	607	580	:	619	652	630	:	629	655	614	:	:	:	560	660	607
SE	3.2	4.0	3.3	3.3	:	3.5	2.8	3.8	:	3.0	9.5	3.6	:	:	:	14.2	6.1	3.9

Data source: OECD, PISA database (EU figure is weighted average based 19 countries).

A10: Distribution and mean performance of students, per country, on the PISA science literacy scale, 2003



▲ Percentile 10 ❍ Mean ▼ Percentile 90

	EU		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
mean	500		509	523	475	502	:	481	487	511	505	486	:	489	:	483	503	:
SE	:		2.5	3.4	3.0	3.6	:	3.8	2.6	3.0	2.7	3.1	:	3.9	:	1.5	2.8	:
P10	361		364	391	343	351	:	349	355	363	384	344	:	370	:	347	375	:
SE	:		5.0	4.3	4.7	5.6	:	5.0	4.0	5.5	4.8	6.3	:	5.0	:	2.6	4.1	:
P90	633		640	652	605	640	:	610	613	651	625	622	:	609	:	614	628	:
SE	:		2.5	4.7	3.4	3.6	:	4.6	3.1	3.2	3.3	2.7	:	4.9	:	3.1	5.5	:

	NL	AT	PL	PT	SI	SK	FI	SE	UK	IS	LI	NO	BG	HR	RO	TR	JP	US
mean	524	491	498	468	:	495	548	506	:	495	525	484	:	:	:	434	548	491
SE	3.1	3.4	2.9	3.5	:	3.7	1.9	2.7	:	1.5	4.3	2.9	:	:	:	5.9	4.1	3.1
P10	394	363	367	346	:	367	429	368	:	369	389	349	:	:	:	321	402	359
SE	5.6	4.1	3.5	6.2	:	6.0	2.6	4.0	:	4.0	8.7	4.6	:	:	:	4.7	6.0	4.4
P90	653	615	630	587	:	625	662	642	:	616	659	616	:	:	:	560	682	622
SE	4.1	4.1	4.1	3.7	:	3.8	2.9	4.0	:	3.6	10.4	4.6	:	:	:	12.8	6.0	4.3

Data source: OECD, PISA 2003 database (EU figure is weighted average based 19 countries).

A11: Percentage of adults with less than upper-secondary education who have participated in any form of education or training in the four weeks prior to the survey, by age group (25-34, 35-54 and 55-64), 2000-2004 (to be updated)

	EU-15			BE			CZ			DK		
	25-34	35-54	55-64	25-34	35-54	55-64	25-34	35-54	55-64	25-34	35-54	55-64
2000	4.9	2.3	1.3	3.9	2.8	0.6	2.2	0.7	:	24.1	10.9	4.9
2001	5.0	2.2	1.2	4.7	2.9	0.4	2.2	0.7	:	19.3	9.2	4.3
2002	4.3	2.3	1.3	4.1	2.8	1.0	2.2	0.7	:	22.9	8.6	4.2
2003	4.6	2.3	1.3	5.6	3.5	1.0	2.4	0.5	:	22.9	15.6	7.5
2004	:	:	:	5.7	4.0	1.4	:	0.7	:	30.7	18.3	12.2
	DE			EE			EL			ES		
	25-34	35-54	55-64	25-34	35-54	55-64	25-34	35-54	55-64	25-34	35-54	55-64
2000	5.1	1.6	:	:	:	:	:	:	:	2.5	1.0	0.6
2001	5.4	1.5	0.4	:	:	:	:	:	:	2.4	1.0	0.6
2002	6.0	1.9	:	:	:	:	:	:	:	2.3	1.1	0.6
2003	6.1	1.3	0.4	:	:	:	2.5	0.3	:	3.2	1.5	1.0
2004	6.1	1.3	0.4	:	:	:	2.5	0.3	:	2.7	1.2	0.9
	FR			IE			IT			CY		
	25-34	35-54	55-64	25-34	35-54	55-64	25-34	35-54	55-64	25-34	35-54	55-64
2000	2.4	1.0	0.2	4.6	3.6	1.5	4.6	1.2	0.4	2.2	0.4	:
2001	2.5	0.8	:	4.6	3.6	1.5	5.0	1.1	0.3	2.2	0.9	:
2002	2.2	1.1	:	4.6	3.6	1.5	2.5	0.9	0.3	1.2	0.4	:
2003	5.7	3.7	1.0	5.0	3.9	2.4	2.8	0.9	0.4	3.9	1.3	:
2004	5.2	4.3	1.0	3.6	2.6	1.4	2.8	0.9	0.4	3.7	1.6	:
	LV			LT			LU			HU		
	25-34	35-54	55-64	25-34	35-54	55-64	25-34	35-54	55-64	25-34	35-54	55-64
2000	:	:	:	:	:	:	:	1.4	:	2.0	0.5	:
2001	:	:	:	:	:	:	:	1.8	:	1.8	:	:
2002	:	:	:	:	:	:	4.4	1.7	:	1.1	0.4	:
2003	:	:	:	:	:	:	:	2.3	:	4.4	1.0	:
2004	4.8	:	:	:	:	:	3.2	2.3	0.5	2.5	0.9	:
	MT			NL			AT			PL		
	25-34	35-54	55-64	25-34	35-54	55-64	25-34	35-54	55-64	25-34	35-54	55-64
2000	:	2.9	:	17.4	8.6	3.3	5.2	2.4	1.1	1.1	0.3	:
2001	:	2.3	:	16.8	9.4	3.4	5.1	2.8	0.7	1.1	0.3	:
2002	:	2.3	:	16.2	10.0	3.3	3.3	2.0	:	1.6	0.3	:
2003	:	2.3	:	:	:	:	10.6	3.6	1.6	2.7	:	:
2004	:	2.6	:	:	:	:	6.3	4.8	2.5	3.9	0.4	:
	PT			SI			SK			FI		
	25-34	35-54	55-64	25-34	35-54	55-64	25-34	35-54	55-64	25-34	35-54	55-64
2000	2.4	1.0	:	5.7	1.1	:	:	3.0	:	13.3	11.3	3.4
2001	2.6	0.7	:	5.7	1.1	:	:	3.0	:	13.4	10.2	4.0
2002	2.0	0.5	:	9.2	:	:	:	3.0	:	18.6	9.0	4.2
2003	2.9	0.6	:	9.4	2.2	:	:	:	:	18.3	13.5	8.6
2004	3.5	1.4	:	12.8	3.3	2.0	:	:	:	15.0	12.0	7.8
	SE			UK			NO			IS		
	25-34	35-54	55-64	25-34	35-54	55-64	25-34	35-54	55-64	25-34	35-54	55-64
2000	26.6	14.7	7.6	9.9	7.3	5.3	:	5.5	:	:	:	:
2001	19.8	10.5	6.3	11.3	7.6	5.7	:	6.7	:	:	:	:
2002	18.9	11.5	6.3	11.6	7.7	5.7	:	6.6	:	25.4	15.3	10.3
2003	25.5	18.1	15.9	10.7	7.2	6.0	18.0	9.4	:	:	:	:
2004	27.0	20.5	18.2	10.7	7.2	6.0	17.4	10.9	4.6	:	:	:
	BG			RO								
	25-34	35-54	55-64	25-34	35-54	55-64						
2000	:	:	:	:	:	:						
2001	:	:	:	:	:	:						
2002	:	:	:	:	:	:						
2003	:	:	:	0.5	:	:						
2004	:	:	:	0.3	:	:						

Data source: Eurostat (Labour Force Survey)

Additional notes:

Breaks in time-series in 2003 in Denmark, Greece, France, Ireland, Cyprus, Luxembourg, Hungary, Slovenia, Slovakia, Finland, Sweden, Iceland and Norway.

A12: Demographic data: Population aged 20-24 (1000)

	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
2000	29975		629	871	333	4585	95	838	3220	3729	313	3618	51	161	236	25.4	828	29.4
2003	29802		646	757	303	4860	97e	814e	3066	3905	336	3278	57	168	245	25.9	732	30.1
Change, %	*-0.6*		*2.1*	*-13.1*	*-8.9*	*6.0*	*2.6*	*-2.9*	*-4.8*	*4.7*	*7.4*	*-9.4*	*11.2*	*3.9*	*3.9*	*2.1*	*-11.6*	*2.4*
2010	28648		640	657	310	4976	106	624	2414	3868	287	2965	60	183	268	28.8	638	29.8
2010 low	28351		634	653	307	4862	1036	619	2397	3869	289	2954	57	181	265	28.1	637	29.3
2010 high	28932		650	660	313	5056	1080	629	2430	3862	283	2990	61	183	271	29.2	638	30.2

	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO	JP	US
2000	959	469	3149	791	152	473	328	519	3568	602	1953	308	:	21.4	2.1	277	:	:
2003	971	504	3232	750	148	461	329	519	:	556	1694	:	6770	22.2	2.1	275	:	:
Change, %	*1.2*	*7.4*	*2.7*	*-5.1*	*-2.4*	*-2.5*	*0.4*	*0.0*	*:*	*-7.7*	*-13.3*	*:*	*:*	*3.7*	*0.7*	*-0.8*	*:*	*:*
2010	1013	506	2957	608	128	415	318	593	4054	501	1718	:	:	:	:	:	:	:
2010 low	1000	495	2949	600	125	414	317	585	3971	493	1711	:	:	:	:	:	:	:
2010 high	1036	515	2963	611	131	416	319	598	4137	507	1723	:	:	:	:	:	:	:

Data source : Eurostat

A13: Population aged 25-29 (1000)

	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
2000	32296		688	846	384	5076	94	843	3375	4130	292	4372	48	164	245	31	768	26
2003	31232		653	907	361	4692	93	855	3614	3764	322	4088	52	160	229	30	851	29
Change, %	*-3,29*		*-5,05*	*7,22*	*-5,99*	*-7,58*	*-1,13*	*1,43*	*7,11*	*-8,85*	*10,12*	*-6,49*	*7,58*	*-2,77*	*-6,81*	*-4,08*	*10,73*	*12,03*
2010 low	30089		655	704	293	4934	98	778	3028	3900	336	3325	63	169	244	29	682	31
2010 high	30802		673	712	299	5117	104	790	3075	3895	342	3385	69	174	252	31	682	32

	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO	JP	US
2000	1148	558	2765	800	145	425	305	594	4172	:	21	2	330	585	315	1814	:	:
2003	1020	512	2973	834	151	463	324	562	3693	6672	21	2	301	589	:	1770	:	:
Change, %	*-11,10*	*-8,15*	*7,49*	*4,22*	*3,81*	*9,15*	*6,03*	*-5,27*	*-11,49*	*:*	*-0,99*	*-6,59*	*-8,75*	*0,72*	*:*	*-2,43*	*:*	*:*
2010 low	985	527	3247	730	142	444	334	535	3874	511	1594	:	:	:	:	:	:	:
2010 high	1022	549	3275	745	152	449	337	553	4090	527	1617	:	:	:	:	:	:	:

Data source : Eurostat

A14: Enterprise expenditure on continuing vocational training courses as a percentage of total labour costs, 1999

EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
2.3		1.6	1.9	3.0	1.5	1.8	0.9	1.5	2.4	2.4	1.7	:	1.1	0.8	1.9	1.2	:

NL	AT	PL	PT	SI	SK	FI	SE	UK		BG	RO	HR	TR		IS	LI	NO
2.8	1.3	0.8	1.2	1.3	:	2.4	2.8	3.6		1.0	0.5	:	:		:	:	2.3

Data source: Eurostat (CVTS2)

Additional notes
UK: The UK figure is not comparable with other countries as the labour cost includes the direct labour costs only

A15: PC and Internet access of students (16 years and older), 2005

	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU
% of students (16 years and older) who used a computer or the Internet at the place of education, last 3 months																	
Computer	70		:	83	84	65	44	66	69	:	*49*	57	78	63	89	74	*66*
Internet	61		34	64	81	62	41	50	63	:	*37*	43	51	58	85	69	61
% of students (16 years and older) who used a computer or the Internet only at the place of education, last 3 months																	
Computer	7		:	17	3	:	*70*	13	:	:	*22*	3	7	14	14	1	*10*
Internet	9		6	16	8	:	*12*	10	6	:	*19*	4	9	12	21	5	21

	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO
% of students (16 years and older) who used a computer or the Internet at the place of education, last 3 months																	
Computer	:	81	64	71	88	63	81	91	80	*81*	38	37	:	*22*	89	:	:
Internet	:	81	58	61	82	59	80	35	76	88	*23*	*26*	:	*13*	85	:	*82*
% of students (16 years and older) who used a computer or the Internet only at the place of education, last 3 months																	
Computer	:	2	*12*	13	8	*4*	15	*14*	4	:	*22*	:	:	*17*	3	:	*9*
Internet	:	1	*18*	16	16	*4*	23	*6*	7	:	*2*	:	:	*2*	4	:	*10*

Data source: Eurostat (ICT household survey 2005), data in italics refer to the year 2004

A16: Availability of computers in households (all households) and at the workplace

	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
Internet	49		50	19	:	62	39	22	:	:	:	39	32	42	16	77	:	:
Computer availability in households and at the workplace (% employees working with computers)																		
Households	58		:	30	:	70	43	33	:	:	:	46	46	30	32	87	:	:
Workplace	49		64	36	63	57	43	:	48	:	:	38	45	23	25	:	29	:

	NL	AT	PL	PT	SI	SK	FI	SE	UK	IS	LI	NO	BG	RO	HR	TR	JP	US
Computer availability in households and at the workplace (% employees working with computers)																		
Internet	78	47	30	31	48	23	54	73	60	84	:	:	:	:	:	:	:	:
Households	78	63	40	42	61	47	64	80	70	89	:	:	:	:	:	:	:	:
Workplace	59	53	:	:	48	37	:	65	49	:	:	60	:	:	:	:	:	:

Data source: Eurostat (ICT Household survey, ICT enterprise survey)

A17: Household-Availability of the Internet, Availability of computers in households and at the workplace

	EU25		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
Internet	49		50	19	:	62	39	22	:	:	:	39	32	42	16	77	:	:
Computer availability in households and at the workplace (% employees working with computers)																		
Households	58		:	30	:	70	43	33	:	:	:	46	46	30	32	87	:	:
Workplace	49		64	36	63	57	43	:	48	:	:	38	45	23	25	:	29	:

	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	HR	TR	IS	LI	NO	JP	US
Computer availability in households and at the workplace (% employees working with computers)																		
Internet	78	89	:	:	48	23	54	73	60	:	:	:	:	84	:	:	:	:
Households	78	:	:	60	61	47	64	80	70	:	:	:	:	89	:	:	:	:
Workplace	59	53	:	:	48	37	:	65	49	:	:	:	:	:	:	60	:	:

Data source: Eurostat (ICT Household survey, ICT enterprise survey)

A18: Rate of participation (%) in lifelong learning by sex and age group, 2003

	Males					Females					Total				
	25-34	35-44	45-54	55-64	Total	25-34	35-44	45-54	55-64	Total	25-34	35-44	45-54	55-64	Total
EU 25	50.5	45.4	41.2	31.3	42.8	49.9	44.5	39.5	27.7	41.1	50.2	45.0	40.3	29.5	42.0
AT	88.4	87.3	86.2	91.0	88.1	90.6	89.2	88.2	93.9	90.3	89.5	88.3	87.2	92.5	89.2
BE	51.4	47.2	43.8	30.2	44.1	50.4	43.0	38.4	23.8	39.8	50.9	45.1	41.2	26.9	41.9
CY	53.6	43.5	35.6	23.6	40.4	50.1	39.3	29.6	14.8	35.4	51.8	41.3	32.6	19.1	37.8
CZ	36.2	32.2	28.2	21.9	30.1	30.7	32.6	27.6	17.3	27.2	33.5	32.4	27.9	19.5	28.7
DE	51.9	45.7	42.2	33.2	43.3	48.3	43.8	39.7	30.1	40.5	50.1	44.8	40.9	31.6	41.9
DK	81.4	82.2	79.5	72.2	79	83.2	84.7	80.2	72.1	80.3	82.3	83.4	79.9	72.1	79.7
EE	41.5	31.1	25.9	17.4	30.0	40.8	40.1	32.8	14.7	32.6	41.1	35.8	29.6	15.8	31.4
EL	26.7	19.9	15.2	9.5	18.7	27.8	17.8	11.3	5.1	16.3	27.2	18.9	13.2	7.2	17.4
ES	31.7	25.9	20.1	13.7	24.3	35.1	26.0	19.1	13.6	24.8	33.4	26.0	19.6	13.7	24.5
FI	82.4	78.1	71.6	62.0	73.7	86.8	86.6	80.5	69.3	80.9	84.6	82.3	76.1	65.7	77.3
FR	63.4	59.2	55.3	36.3	54.8	58.8	51.3	46.7	28.3	47.4	61.1	55.1	50.9	32.2	51.0
HU	18.2	11.0	7.6	4.9	11.0	20.8	14.9	9.0	4.1	12.4	19.5	13.0	8.3	4.4	11.7
IE	46.7	47.1	42.2	37.7	44.1	55.2	56.3	52.0	46.5	53.2	50.9	51.8	47.1	42.1	48.7
IT	57.7	53.3	50.4	38.9	50.9	57.1	49.7	42.7	32.2	46.3	57.4	51.5	46.5	35.4	48.6
LT	30.0	23.9	22.5	13.9	23.5	38.3	38.8	27.8	18.1	31.6	34.2	31.6	25.3	16.3	27.8
LU	85.9	85.4	80.2	74.9	82.3	86.8	82.5	78.3	75.8	81.4	86.3	83.9	79.3	75.3	81.9
LV	49.1	44.8	37.9	34.0	42.2	63.4	52.3	45.9	36.8	49.8	56.3	48.6	42.2	35.6	46.2
MT	80.4	28.2	74.2	20.0	54.0	83.4	28.9	72.9	16.0	52.5	81.8	28.5	73.5	17.9	53.2
NL	53.2	47.0	40.0	33.1	44.0	47.9	40.3	38.8	26.7	39.1	50.6	43.7	39.4	29.9	41.6
PL	39.4	31.2	24.7	18.2	29.4	42.3	34.9	26.8	14.5	30.6	40.8	33.0	25.8	16.2	30.0
PT	52.5	46.4	40.3	36.0	44.7	55.8	46.1	38.2	29.7	43.5	54.2	46.3	39.2	32.6	44.1
SE	78.3	71.5	67.4	59.6	69.2	74.8	75.8	75.1	64.3	72.7	76.6	73.7	71.2	61.9	71.0
SI	84.8	80.7	79.5	77.7	80.9	87.8	84.9	80.8	78.6	83.2	86.2	82.8	80.1	78.2	82.0
SK	62.6	61.9	61.4	52.1	60.5	62.2	61.6	60.2	46.4	58.6	62.4	61.8	60.8	48.9	59.5
UK (*)	43.7	40.8	36.1	23.8	36.7	44.5	43.6	41.1	21.3	38.4	44.1	42.2	38.7	22.5	37.6
BG	20.3	17.0	14.0	7.0	15.0	22.9	21.9	17.6	6.1	17.3	21.6	19.4	15.9	6.5	16.1
CH	78.8	74.9	72.3	64.3	73.1	66.4	65.8	64.6	52.7	62.9	72.6	70.4	68.5	58.4	58.4
NO (*)	37.9	38.8	34.2	27.0	35.0	35.5	40.1	36.0	23.4	34.3	36.7	39.5	35.1	25.2	25.2
RO	13.5	9.5	8.4	6.9	10.0	15.1	10.0	8.2	4.9	10.0	14.3	9.7	8.3	5.8	5.8

(*) Informal learning not included
Data source: Eurostat LFS, ad-hoc module on Lifelong Learning 2003 Reference population: 25-64 years old

A19: Rate of participation (%) in fields of formal education by sex and age group , EU25, 2003

	Males					Females					Total				
	25-34	35-44	45-54	55-64	Total	25-34	35-44	45-54	55-64	Total	25-34	35-44	45-54	55-64	Total
Agriculture and veterinary	1.6	2.3	2.4	1.3	1.8	1.6	0.7	0.4	0.1	1.4	1.6	1.5	1.5	0.8	1.6
Computer science	6.0	5.4	4.5	2.8	5.7	1.9	2.1	1.5	2.3	1.8	4.0	3.5	2.9	2.9	3.7
Computer use	1.2	2.0	1.7	3.7	1.4	0.7	1.7	3.1	2.2	1.1	0.9	1.8	2.5	2.9	1.2
Engineering, manufacturing and construction	22.0	13.5	11.0	6.0	20.2	5.1	2.6	1.6	2.8	4.5	13.6	7.5	5.5	4.8	12.1
Foreign languages	1.8	1.4	2.1	2.2	1.8	3.5	2.4	3.0	3.7	3.4	2.6	2.0	2.6	2.7	2.6
General programmes	1.8	1	2.4	3.4	1.8	2.4	1.6	1.6	3.4	2.3	2.1	1.3	2.0	3.5	2.0
Health and welfare	6.6	8.8	7.7	4.3	6.9	12.6	17.1	16.6	8.8	13.5	9.6	13.5	13	6.9	10.3
Humanities, languages and arts	7.7	7.2	5.6	12.5	8.0	11.4	6.9	8.9	18.2	11.1	9.5	7.1	7.0	15.6	9.5
Life science (including biology and environmental science)	1.8	1.3	0.7	0.9	1.7	2.7	0.8	0.6	0.0	2.4	2.3	1.0	0.6	0.5	2.0
Mathematics and statistics	1.5	0.3	0.3	0.9	1.4	0.9	0.6	0.8	1.2	0.9	1.2	0.5	0.5	0.9	1.1
Physical science	3.2	0.7	2.0	4.1	2.8	1.9	1.0	0.5	1.2	1.7	2.5	0.9	1.2	2.5	2.2
Science, mathematics and computing	3.4	0.3	0.3	0.6	3.3	1.7	0.6	0.9	0.6	1.8	2.5	0.4	0.7	0.6	2.5
Services	4.3	4.6	6.7	5.2	4.6	3.2	3.8	2.0	1.7	3.2	3.7	4.1	4.2	3.6	3.9
Social sciences, business and law	27.4	27.2	24.1	16.6	27.4	34.1	23.3	25.9	15.3	32.8	30.8	25.0	25.3	17.9	30.2
Teacher training and education	3.2	4.1	7.2	7.5	3.7	9.4	14.7	10.7	6.1	10.4	6.3	10.0	9.1	9.4	7.2
Unknown	6.4	7.5	8.5	10.4	7.5	6.9	7.7	9.5	9.4	7.8	6.7	7.6	9.1	9.8	7.7
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

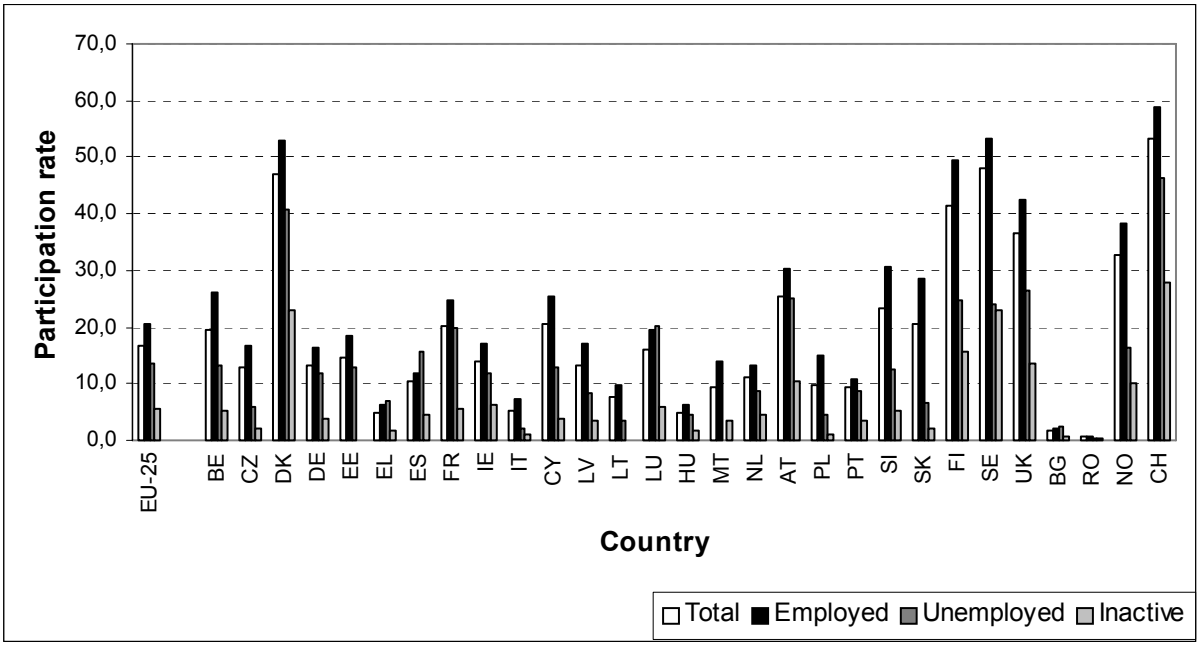
Data source: Eurostat LFS, ad-hoc module on Lifelong Learning 2003 , Reference population: 25-64 years old

A20: Rate of participation (%) in non-formal education by sex and age group , 2003

	Males					Females					Total				
	25-34	35-44	45-54	55-64	Total	25-34	35-44	45-54	55-64	Total	25-34	35-44	45-54	55-64	Total
EU-25	20.0	19.0	16.3	8.7	16.5	19.7	19.4	16.7	8.3	16.4	19.8	19.2	16.5	8.5	16.5
AT	32.4	31.4	25.1	12.4	26.2	29.6	29.5	23.8	12.1	24.4	31.0	30.4	24.5	12.3	25.3
BE	24.9	23.9	21.5	8.5	20.9	24.3	21.7	18.4	7.0	18.8	24.6	22.8	19.9	7.8	19.8
CY	26.8	24.0	17.0	8.6	20.0	28.9	24.7	19.3	6.6	21.2	27.9	24.4	18.1	7.6	20.6
CZ	16.7	16.6	13.2	8.5	14.0	13.0	16.6	13.0	4.2	11.8	14.9	16.6	13.1	6.3	12.9
DE	16.3	15.7	13.8	6.3	13.2	15.6	15.2	12.7	5.0	12.3	15.9	15.5	13.2	5.7	12.7
DK	48.0	50.8	47.1	35.8	45.7	46.5	53.7	53.3	39.6	48.5	47.3	52.2	50.2	37.7	47.1
EE	15.9	15.3	9.0	:	12.0	19.9	22.4	17.7	8.2	17.3	17.9	19.0	13.7	7.2	14.8
EL	7.9	4.9	3.1	1.3	4.6	10.5	5.2	2.6	0.7	5.1	9.2	5.0	2.9	1.0	4.9
ES	12.6	12.1	8.2	3.3	9.8	15.0	12.7	8.2	4.2	10.8	13.8	12.4	8.2	3.8	10.3
FI	40.2	43.7	37.8	24.5	37.0	43.4	52.3	50.7	34.2	45.7	41.8	47.9	44.2	29.4	41.3
FR	27.4	24.6	20.2	7.3	20.8	25.1	23.4	18.3	7.7	19.4	26.3	24.0	19.2	7.5	20.1
HU	6.4	5.0	3.2	1.3	4.2	8.1	7.6	4.2	1.4	5.4	7.2	6.3	3.7	1.4	4.8
IE	14.5	15.3	12.5	8.1	13.1	15.9	17.7	14.6	9.2	14.9	15.2	16.5	13.6	8.6	14.0
IT	5.8	6.3	6.1	2.4	5.3	6.0	6.0	5.4	1.8	4.9	5.9	6.2	5.7	2.1	5.1
LT	5.0	4.7	7.4	:	4.9	9.9	14.3	10.6	5.0	10.3	7.5	9.6	9.1	3.6	7.8
LU	16.7	20.9	16.9	7.3	16.4	20.1	18.5	13.4	5.4	15.4	18.4	19.7	15.2	6.4	15.9
LV	11.9	10.2	8.3	5.4	9.2	20.3	19.9	18.3	9.8	17.2	16.1	15.2	13.6	7.9	13.4
MT	15.3	12.9	10.5	:	11.1	12.5	9.3	5.8	:	7.8	13.9	11.1	8.2	:	9.4
NL	16.2	12.3	10.4	3.9	11.1	14.4	12.1	10.0	6.0	10.9	15.3	12.2	10.2	5.0	11.0
PL	13.6	12.1	8.5	3.6	10.0	13.0	12.9	8.6	2.2	9.6	13.3	12.5	8.5	2.8	9.8
PT	13.4	9.5	6.7	3.6	8.9	15.0	11.2	7.2	3.6	9.7	14.2	10.4	7.0	3.6	9.3
SE	47.2	46.3	46.4	39.1	44.8	44.9	53.0	57.4	49.7	51.3	46.0	49.6	51.8	44.3	48.0
SI	29.8	24.2	20.8	8.1	21.8	32.9	31.3	24.7	8.7	25.2	31.3	27.8	22.7	8.4	23.5
SK	25.6	25.2	24.0	11.4	22.9	21.0	21.4	21.1	4.2	18.1	23.4	23.3	22.5	7.5	20.5
UK	38.7	38.2	34.6	23.1	34.2	38.4	39.2	38.4	20.4	34.8	38.5	38.7	36.5	21.7	34.5
BG	2.3	1.8	:	:	1.4	3.2	2.4	1.6	:	1.9	2.7	2.1	1.3	:	1.7
CH	59.6	60.4	58.9	48.8	57.4	50.8	52.6	51.8	38.9	49.1	55.2	56.5	55.3	43.8	53.3
NO	35.1	37.1	33.0	26.4	33.3	32.2	37.8	34.5	23.0	32.3	33.7	37.4	33.7	24.7	32.9
RO	0.9	0.4	0.3	0.4	0.5	1.1	0.7	0.8	:	0.7	1.0	0.5	0.6	0.2	0.6

Data source: Eurostat LFS, ad-hoc module on Lifelong Learning 2003, *Reference population: 25-64 years old*

A21: Rate of participation (%) in non-formal education by working status , 2003



Data source: Eurostat LFS, ad-hoc module on Lifelong Learning
Reference population: 25-64 years old

A22: Rate of participation (%) in non-formal education by working status and educational attainment and country, 2003

	Employed				Unemployed				Inactive				Total			
Educ. attain. level	Low	Medium	High	Total	Low	Medium	High	Total	Low	Medium	High	Total	Low	Medium	High	Total
EU-25	9.0	18.9	33.7	20.6	7.6	14.8	22.7	13.5	2.8	6.7	13.0	5.6	6.5	16.4	30.9	16.8
AT	11.8	30.1	47.8	30.2	14.2	27.7	49.4	25.0	3.8	12.8	25.2	10.6	8.7	26.3	45.0	25.3
BE	14.0	22.7	39.3	26.1	8.3	16.7	18.5	13.4	3.0	7.3	11.9	5.4	8.7	19.1	34.9	19.5
CY	4.3	19.9	48.7	25.4	:	14.5	17.8u	13.0	2.0	4.8	10.6	3.9	3.6	17.0	44.7	20.6
CZ	7.5	15.0	30.0	16.6	2.2	6.8	14.0	6.0	0.7	1.9	8.6	2.1	3.9	12.1	27.2	12.9
DE	4.5	12.9	28.2	16.3	6.1	12.2	19.2	11.7	1.8	3.8	8.4	3.9	3.6	10.8	25.3	13.1
DK	37.4	48.8	65.6	53.0	33.8	41.6	44.5	40.9	18.5	21.1	35.2	22.9	30.9	43.9	61.4	47.1
EE	:	12.6	31.8	18.5	:	14.0		12.9	:	:	:	:	:	10.8	26.8	14.8
EL	1.0	6.0	14.7	6.1	:	8.1	13.3	6.9	0.4	2.9	5.0	1.6	0.8	5.3	13.4	4.9
ES	5.9	13.0	21.2	12.0	8.0	18.8	31.9	15.5	2.7	8.3	13.7	4.7	4.9	12.5	21.0	10.3
FI	32.8	43.7	64.8	49.5	20.8	22.6	36.5	24.8	9.5	15.1	30.1	15.6	23.9	37.0	59.8	41.3
FR	14.7	23.1	39.0	24.9	13.9	21.5	30.6	19.8	2.8	6.6	13.9	5.5	10.5	19.9	35.4	20.1
HU	2.9	5.6	11.4	6.3	:	5.7	:	4.7	0.5	2.7	3.3	1.7	1.5	4.9	10.1	4.8
IE	9.0	15.5	26.1	17.0	:	:	:	12.0	3.6	9.0	13.0	6.3	6.8	14.0	24.4	14.1
IT	3.0	9.2	15.9	7.4	0.7	3.1	7.7	2.2	0.5	2.3	6.0	1.2	1.8	7.3	14.1	5.1
LT	:	5.9	22.7	9.9	:	:	:	3.6	:	:	:	:	:	4.8	20.2	7.8
LU	7.0	19.5	38.7	19.6	:	19.6	41.7u	20.3	:	7.9	15.7	6.0	5.0	16.4	35.6	15.9
LV	4.3	12.9	38.3	17.2	:	8.6		8.2	:	3.5	10.7	3.6	2.9	10.7	33.3	13.4
MT	8.8	26.0	26.2	13.9	:	:	:	:	2.9	:	:	3.5	5.8	22.6	25.0	9.4
NL	8.3	13.8	16.3	13.2	:	15.3	10.1	8.7	3.3	5.7	6.1	4.5	6.2	12.2	15.0	11.0
PL	3.2	10.9	36.4	14.9	1.3	4.5	13.5	4.4	:	1.0	5.3	1.0	1.5	7.6	31.5	9.8
PT	6.0	19.2	32.3	10.9	6.2	:	:	8.8	2.5	11.3	:	3.5	5.2	17.8	30.4	9.3
SE	33.4	50.0	69.9	53.2	16.4	25.8	25.3	23.9	18.4	20.9	32.0	22.9	30.1	45.1	64.4	48.1
SI	10.8	27.5	54.3	30.5	:	16.2	19.5	12.6	1.9	6.2	13.8	5.2	6.7	22.1	48.6	23.5
SK	20.9	25.8	45.2	28.5	:	7.8	:	6.5	:	2.4	11.1	2.2	6.7	19.7	41.2	20.5
UK	15.4	37.6	59.8	42.4	14.0	27.0	38.2	26.4	5.4	15.2	29.4	13.7	11.2	33.7	56.3	36.6
BG	:	1.2	4.8	2.0	:	3.1	:	2.6	:	1.4	:	0.8	:	1.4	4.3	1.7
CH	20.4	55.0	80.0	58.7	28.0	44.3	64.9	46.2	8.5	31.7	45.8	27.8	17.2	50.8	77.0	53.3
NO	19.9	34.1	50.7	38.4	9.1u	17.0	19.1	16.5	4.6	9.4	20.2	10.1	14.4	29.2	47.0	32.9
RO	0.1	0.6	3.9	0.8	:	:	:	0.4	:	0.2	:	0.2	0.1	0.5	3.2	0.6

Data source: Eurostat LFS, ad-hoc module on Lifelong Learning 2003, Reference population: 25-64 years old

A23: Rate of participation (%) in non-formal education courses on computer science and foreign languages by sex , 2003

	Males			Females			Total		
	Computer science*	Foreign languages	Other	Computer science*	Foreign languages	Other	Computer science*	Foreign languages	Other
EU25	16.3	6.0	77.6	17.9	8.4	73.7	17.1	7.2	75.7
AT	22.0	8.3	69.6	20.3	13	66.7	21.2	10.6	68.2
BE	22.8	5.1	71.5	22.5	9.8	67.0	22.7	7.3	69.4
CY	11.9	2.6	85.5	14.9	8.5	76.6	13.5	5.7	80.8
CZ	7.3	16.8	75.9	10.5	29.3	60.2	8.8	22.5	68.7
DE	16.0	5.7	78.2	16.1	10.3	73.5	16.1	7.9	76.0
DK	20.5	3.7	75.3	20.1	7.2	72.3	20.3	5.5	73.8
EE	11.7	6.9	81.4	17.4	11.1	71.4	15.2	9.5	75.2
EL	18.8	6.7	74.5	21.7	11.7	66.6	20.3	9.3	70.4
ES	22.4	8.7	68.8	25	10.4	64.6	23.7	9.6	66.6
FI	19.5	4.8	75.7	19.1	7.1	73.8	19.3	6.0	74.6
FR	18.7	3.9	77.4	21.7	4.9	74.1	19.8	4.4	75.8
HU	14.6	14.7	70.7	17.3	19.1	63.5	16.2	17.3	66.5
IE	18.6	2.2	79.1	23.9	3.2	72.8	21.4	2.7	75.8
IT	18.6	8.4	73.0	21.6	7.4	71.0	20.1	7.9	72.0
LT	11.0	6.8	82.2	13.9	8.1	77.9	13.1	7.7	79.2
LU	24.4	12.1	63.4	23.1	21.5	55.5	23.8	16.6	59.6
LV	6.7	9.2	84.1	9.7	12.6	77.8	8.7	11.5	79.8
MT	16.1	1.1	82.8	23.0	4.3	72.7	18.9	2.5	78.6
NL	15.8	3.5	80.7	16.4	7.5	76.1	16.1	5.4	78.5
PL	7.3	6.6	86.1	12.5	8.4	79.0	9.9	7.5	82.6
PT	20.8	3.1	76.2	18.8	3.2	78.0	19.7	3.1	77.2
SE	15.1	2.5	82.3	12.7	4.0	83.3	13.8	3.3	82.8
SI	12.1	6.6	80.9	12.5	9.3	78.0	12.3	8.1	79.3
SK	6.6	6.7	86.7	9.2	11.9	79.0	7.8	9.0	83.2
UK	13.3	2.4	84.3	13.5	3.0	83.5	13.4	2.7	83.9
BG	11.4	7.8	80.7	25.4	20.9	53.7	19.6	15.4	65.0
RO	19.8	4.4	75.8	17.6	4.1	78.4	18.5	4.2	77.3

* Including Computer use

Source: Eurostat LFS, ad-hoc module on Lifelong Learning 2003, Reference population: 25-64 years old with participation in non-formal education

A24: Mean volume (hours) of participation in non-formal education per participant by sex and age, 2003

	Males					Females					Total				
	25-34	35-44	45-54	55-64	Total	25-34	35-44	45-54	55-64	Total	25-34	35-44	45-54	55-64	Total
EU-25	106	75	61	59	80	106	83	73	69	87	106	79	67	64	84
AT	96	91	76	64	87	103	86	80	54	86	99	88	78	59	86
BE	92	94	66	58	83	104	77	65	79	83	98	86	66	68	83
CY	72	54	43	38u	57	63	42	45	57u	52	67	48	44	46	54
CZ	51	46	34	29	43	79	57	43	42	58	63	51	38	34	50
DE	158	108	81	69	110	120	98	93	67	100	140	103	87	68	105
DK	70	76	69	58	69	63	84	68	72	73	67	80	68	65	71
EE	91u	38	:	:	65	65	54	49	:	56	77	48	54	58u	59
EL	89	68	85	78	82	91	90	76	86u	88	90	80	81	81	85
ES	156	97	90	72	118	176	116	124	93	141	166	107	107	84	130
FI	65	56	53	45	56	63	61	55	48	57	64	59	54	47	57
FR	146	80	58	90	98	174	126	96	123	134	159	103	76	107	115
HU	168	131	110	72	139	204	171	125	80	169	187	156	119	76	156
IE	40	39	34	33	37	44	41	39	36	41	42	40	37	34	39
IT	84	60	52	54	65	73	59	50	63	62	78	60	51	58	63
LT	74u	47u	64u	40	60	77	51	59	34u	58	76	50	61	36u	58
LU	68	45	40	41	49	45	56	60	46u	52	55	50	48	43	51
LV	57u	36u	55u	56	50	71	52	87	68u	69	66	47	78	64	63
MT	93	85	88	68	88	61u	65u	60u	58	62	79	77	78	63u	77
NL	99	80	65	47	81	99	106	65	86	92	99	93	65	71	86
PL	47	43	37	42	43	48	41	35	39	42	47	42	36	40	42
PT	130	98	79	55	105	158	145	118	119	143	144	124	99	89	126
SE	58	63	51	54	57	57	52	47	44	50	58	57	49	49	53
SI	53	44	41	47	47	50	45	38	51	45	51	45	39	49	46
SK	39	34	28	28	33	58	41	31	43	44	47	37	29	33	38
UK	53	43	33	34	42	53	38	35	29	41	53	41	34	32	41
BG	74	70u	92	47	74	88	93	68u	31	83	82	83	77	40	79
CH	80	57	51	42	60	65	53	50	44	54	72	55	50	43	57
NO	61	53	50	34	52	50	50	37	31	44	56	51	44	33	48
RO	80u	107	64	192	98	73u	76	59u	137	71	76	87u	61u	180	82

Source: Eurostat LFS, ad-hoc module on Lifelong Learning 2003, Reference population: 25-64 years old with participation in non-formal education

Additional note: u = unreliable or uncertain data

A25: Rate of participation (%) in informal learning by working status andeducational attainment, 2003

Educ. attaint. level	Employed				Unemployed				Inactive				Total			
	Low	Medium	High	Total	Low	Medium	High	Total	Low	Medium	High	Total	Low	Medium	High	Total
EU-24*	21.0	35.9	57.3	36.9	19.9	35.3	54.9	31.8	14.8	27.5	41.4	22.2	18.4	34.1	55.2	32.8
AT	77.6	80.7	91.6	82.2	87.4	92.3	94.0	90.8	95.3	95.3	96.6	95.4	85.2	84.2	92.3	85.6
BE	20.9	32.0	54.7	36.8	23.2	41.4	65.0	37.8	13.8	27.8	40.1	20.9	17.8	31.6	53.0	32.3
CY	5.8	25.7	68.0	34.6	:	21.6	47.7u	22.6	6.1	19.4	41.9	14.6	5.8	24.4	65.3	30.2
CZ	8.1	20.4	56.2	24.6	4.6	14.4	43.2	13.2	6.7	12.6	32.3	12.5	7.1	18.6	53.2	21.4
DE	17.6	38.4	62.5	42.8	18.2	37.4	55.8	35.4	14.5	29.9	46.2	27.7	16.5	36.4	60.2	38.8
DK	45.6	62.2	84.6	67.6	42.0	62.4	79.0	63.7	44.3	58.8	75.9	57.1	45.0	61.6	83.4	65.5
EE	11.0	21.7	50.8	30.6	:	15.9	:	17.3	:	6.8	16.8	8.3	7.7	18.4	44.5	25.1
EL	5.8	16.0	37.9	17.1	6.2	16.2	33.2	15.8	3.2	9.5	25.3	7.2	4.9	14.3	36.1	14.2
ES	8.0	18.8	33.6	18.0	8.3	23.6	42.3	19.0	5.8	18.1	30.4	10.2	7.2	19.0	33.7	16.0
FI	57.5	68.9	84.5	72.6	57.9	70.7	83.7	69.5	46.3	63.0	74.9	58.2	53.7	68.0	83.4	69.5
FR	32.0	51.1	82.7	53.8	29.6	50.7	83.1	47.1	11.4	26.3	52.1	21.4	24.6	46.4	78.8	45.9
HU	3.5	5.8	18.5	7.9	:	3.2	:	3.0	1.3	2.9	7.4	2.5	2.1	5.0	16.7	6.0
IE	31.6	45.9	62.4	46.9	29.7	44.5	72.4	42.8	32.2	51.1	58.9	41.1	31.8	47.1	62.2	45.3
IT	37.7	60.7	78.6	53.2	33.4	57.9	76.3	46.3	27.8	49.8	61.9	34.8	33.2	58.1	76.2	46.8
LT	7.0	20.5	59.7	29.8	:	10.1	55.5	14.7	:	11.2	22.7	10.1	5.0	18.1	56.1	25.1
LU	68.0	87.7	94.3	83.7	68.4u	81.0	94.5u	80.7	63.9	79.8	89.8	74.2	66.5	85.5	93.7	81.0
LV	38.0	43.1	68.6	47.9	13.1u	37.4	50.4u	33.8	22.4	30.5	41.1	29.1	29.4	40.2	63.9	42.6
MT	53.4	65.8	70.0	57.7	59.4u	:	:	61.3u	42.9	56.1u	:	43.6	48.6	64.2	66.6	52.0
NL	15.4	33.7	58.1	36.7	22.0	40.7	57.7	36.9	9.5	23.0	40.6	18.1	13.4	31.8	56.2	32.4
PL	11.7	27.5	73.4	34.5	8.3	20.4	63.3	20.6	5.2	13.5	34.4	12.1	8.1	23.0	68.3	26.6
PT	36.2	67.1	77.2	45.2	35.7	65.6	81.5	44.2	25.3	64.3	70.7	30.1	33.7	66.6	76.9	42.1
SE	30.9	48.3	75.4	53.5	35.0	49.2	65.7	50.0	25.6	48.0	67.0	47.6	30.3	48.3	74.2	52.6
SI	64.9	79.6	93.2	80.1	67.5	76.2	87.2	75.1	64.3	76.1	84.8	72.6	64.8	78.7	92.0	78.1
SK	51.1	61.0	83.3	63.8	30.8	44.3	68.4	41.4	35.6	46.1	68.6	44.0	39.0	56.5	81.5	57.1
UK	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
BG	2.7	13.3	50.7	21.5		8.4	34.4	9.1	0.9u	6.6	16.7	5.0	1.6	11.3	44.1	15.4
CH	18.9	49.3	75.0	53.6	27.5	46.4	68.5	48.2	12.8	34.4	54.5	31.7	17.4	46.7	73.3	49.9
NO	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
RO	2.4	9.0	35.8	10.5	5.4u	6.2	27.5u	7.2	3.9	6.8	12.8	5.9	3.1	8.3	32.0	9.1

Data source: Eurostat LFS, ad-hoc module on Lifelong Learning 2003? Reference population: 25-64 years old

Additional notes:
* UK not included
u = unreliable or uncertain data

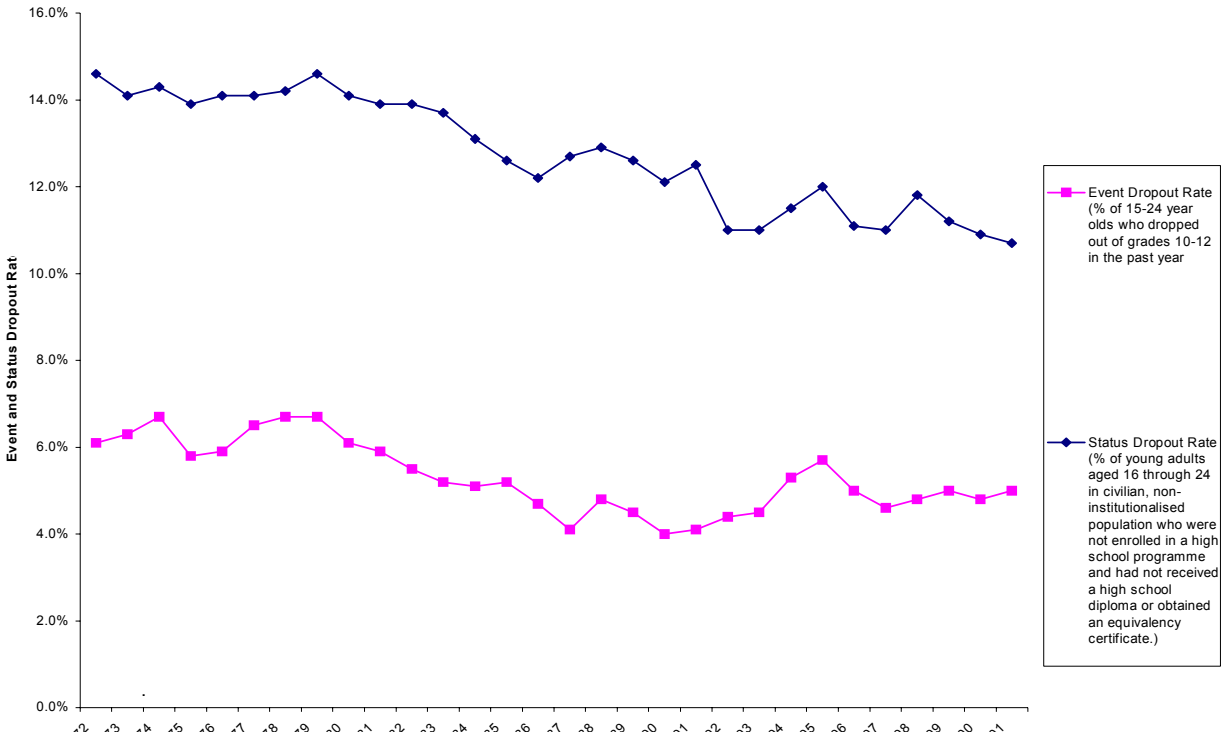
A26: Participation in formal adult education for work-related reasons in the USA, by type of educational activity and adult characteristics: 2002-2003.

Adult characteristic	Number of adults (thousands)	Any formal adult education for work-related reasons[1]		Specific type of formal educational activity							
				College degree program for work-related reasons		Vocational degree/diploma program for work-related reasons		Apprenticeship		Work-related courses	
		Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
Total	206,533	40	0.5	9	0.3	2	0.1	1	0.1	33	0.5
Age											
24 years or younger	24,053	59	2.1	37	1.9	3	0.6	2	0.5	31	1.9
25 to 44 years	82,223	48	1.0	10	0.5	3	0.3	1	0.2	41	1.0
45 to 64 years	66,447	39	1.0	2	0.2	1	0.2	#	#	37	1.0
65 years or older	33,810	7	0.4	#	#	#	#	#	#	7	0.4
Sex											
Male	98,793	40	0.8	8	0.4	2	0.2	1	0.2	33	0.9
Female	107,740	40	0.7	10	0.4	2	0.2	#	#	33	0.6
Race/ethnicity											
White, non-Hispanic	149,135	41	0.6	9	0.3	2	0.2	1	0.1	35	0.6
Black, non-Hispanic	23,145	39	1.8	10	1.0	3	0.5	1	0.2	31	1.6
Hispanic	24,248	31	2.0	6	0.8	2	0.4	1	0.3	25	1.7
Asian or Pacific Islander, non-Hispanic	6,330	49	3.4	16	2.6	1	0.4	#	#	38	3.2
Other race, non-Hispanic	3,675	43	5.0	15	3.2	3	1.0	2	1.2	31	3.9
Highest education completed											
Less than a high school diploma/equivalent	32,357	10	1.1	#	#	#	#	1	0.4	9	1.1
High school diploma/ equivalent	61,194	28	0.9	5	0.4	2	0.3	1	0.2	23	0.9
Some college/vocational/ associate's degree	58,055	49	1.1	16	0.8	3	0.3	1	0.2	36	1.1
Bachelor's degree	32,122	58	1.2	10	0.6	2	0.4	#	#	52	1.3
Graduate or professional degree	22,804	62	1.6	13	1.0	1	0.3	#	#	58	1.6
Household income											
$25,000 or less	53,796	21	1.0	8	0.6	1	0.2	1	0.1	14	0.8
$25,001 to $50,000	55,435	38	1.0	9	0.6	3	0.3	1	0.2	31	1.0
$50,001 to $75,000	43,189	48	1.3	10	0.7	2	0.3	1	0.3	40	1.3
$75,001 to $100,000	24,286	54	2.0	9	0.8	2	0.4	#	#	49	1.8
$100,001 or more	29,826	54	1.6	9	0.8	1	0.3	1	0.4	49	1.6

Estimate rounds to zero.

Source: US Department of Education, National Center for Education Statistics, Adult Education for Work-Related Reasons Survey of the 2003 National Household Education Surveys Program

A27: Trends in ESL rate in the USA according to event drop out rate and status dropout rates, 1972- 2001.



Source: Study on Access to Education and Training,, Basic Skills and Early School Leavers (Ref. DG EAC 38/04), Lot 3:Early School Leavers, Final report prepared by GHK, September, 2005

A28: Gender, age and educational attainment of early school leavers in the EU, 2004

	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	IS	NO
Gender																													
Female	42%	57%	49%	50%	30%	36%	39%	44%	30%	43%	40%	37%	30%	42%	47%	47%	45%	50%	37%	41%	26%	47%	41%	44%	40%	40%	47%	39%	41%
Male	58%	43%	51%	50%	70%	64%	61%	56%	62%	57%	60%	63%	62%	58%	53%	53%	55%	42%	63%	59%	74%	53%	59%	56%	52%	52%	53%	61%	59%
Age																													
18 yrs	7%	17%	6%	10%	11%	10%	9%	10%	12%	9%	3%	10%	9%	6%	10%	15%	10%	13%	9%	9%	3%	15%	14%	18%	12%	11%	14%	18%	24%
19 yrs	11%	16%	14%	14%	15%	10%	12%	16%	14%	11%	8%	11%	11%	12%	12%	13%	14%	13%	10%	12%	12%	14%	17%	15%	15%	14%	11%	9%	25%
20 yrs	16%	12%	13%	14%	10%	13%	14%	15%	13%	14%	12%	15%	15%	12%	12%	10%	16%	14%	17%	14%	13%	12%	15%	15%	13%	14%	12%	12%	19%
21 yrs	18%	11%	18%	16%	19%	14%	15%	14%	14%	16%	17%	16%	12%	18%	16%	17%	17%	16%	16%	16%	11%	18%	15%	15%	14%	13%	18%	12%	12%
22 yrs	14%	11%	11%	16%	16%	19%	16%	16%	16%	16%	23%	12%	19%	13%	15%	16%	15%	16%	15%	15%	25%	9%	12%	11%	15%	15%	12%	16%	9%
23 yrs	15%	19%	23%	16%	16%	16%	17%	13%	15%	15%	21%	22%	16%	11%	17%	15%	13%	14%	14%	16%	22%	17%	14%	11%	16%	16%	17%	18%	7%
24 yrs	20%	14%	15%	14%	12%	18%	17%	15%	15%	19%	15%	13%	19%	28%	19%	15%	15%	15%	19%	18%	14%	15%	12%	15%	15%	17%	16%	14%	6%
ISCED Level																													
No formal education or less than ISCED1	0%	6%	3%	0%	4%	3%	1%	3%	3%	3%	2%	0%	0%	3%	0%	0%	2%	0%	4%	4%	6%	5%	0%	0%	0%	11%	6%	0%	1%
ISCED 1	28%	1%	1%	16%	22%	43%	19%	11%	22%	7%	31%	13%	21%	62%	11%	10%	19%	0%	18%	49%	14%	6%	3%	1%	0%	25%	15%	1%	0%
ISCED 2	72%	93%	96%	84%	73%	54%	80%	86%	75%	90%	67%	87%	79%	35%	89%	90%	79%	100%	78%	47%	81%	89%	97%	99%	37%	65%	79%	99%	99%
ISCED3C	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	63%	0%	0%	0%	0%

Source: Study on Access to Education and Training,, Basic Skills and Early School Leavers (Ref. DG EAC 38/04), Lot 3:Early School Leavers, Final report prepared by GHK, September, 2005.

A29: Participation rate (%) in tertiary education (ISCED 5-6)

	Participation rate (%) in tertiary education (ISCED 5-6) of							
	18 year olds	20 year olds	22 year olds	24 year olds	26 year olds	28 year olds	30 to 34 year olds	35 to 39 year olds
EU25	14,8	33,5	27,9	18,7	11,5	7,1	4,1	1,8
BE	35,1	47,2	30,4	13,6	7,1	4,5	2,4	1,2
CZ	2,0	32,0	23,0	14,0	6,8	3,8	2,2	1,0
DK	0,4	12,2	29,0	30,9	23,3	15,0	6,0	2,7
DE	2,6	17,3	22,0	21,1	16,6	10,4	4,2	1,6
EE	17,9	37,7	29,3	18,1	13,3	10,6	6,1	7,1
GR	51,4	54,6	33,5	21,7	16,7	10,2	0,8	0,1
ES	27,7	38,1	32,0	20,2	11,9	6,8	3,0	1,7
FR	26,9	41,4	30,4	16,4	8,0	4,3	4,4	(incl in 30-34)
IE	35,0	40,6	21,1	8,7	5,3	3,4	5,1	(incl in 30-34)
IT	5,2	34,5	28,7	20,3	11,8	7,0	2,7	2,2
CY	16,3	36,4	18,1	10,7	4,0	1,8	0,7	0,2
LV	21,3	37,0	30,2	18,6	12,9	10,4	9,3	4,7
LT	15,4	44,9	34,8	20,0	13,0	10,1	5,2	2,3
LU	:	:	:	:	:	:	:	:
HU	12,7	32,1	27,3	16,6	10,6	7,5	4,3	2,6
MT	11,3	21,8	14,4	6,2	3,9	3,1	6,3	(incl in 30-34)
NL	18,6	32,2	30,7	19,7	9,7	5,0	2,1	1,3
AT	5,0	20,3	21,5	17,6	12,2	7,9	3,7	1,3
PL	0,7	39,5	39,2	23,0	9,7	5,3	7,6	(incl in 30-34)
PT	18,4	29,9	28,6	18,3	10,6	6,9	3,5	2,0
SI	4,6	47,4	41,2	27,2	12,7	8,0	4,2	2,8
SK	11,7	24,4	21,9	11,0	5,2	3,4	1,7	1,1
FI	0,4	32,1	44,9	37,7	25,3	17,3	8,9	5,2
SE	0,4	24,2	34,0	29,4	19,6	13,0	8,1	5,6
UK	24,5	35,5	17,0	10,2	8,0	6,7	5,0	4,1
IS	0,2	17,0	29,5	25,3	17,3	12,7	7,5	4,8
LI	:	:	:	:	:	:	:	:
NO	0,4	28,0	34,2	27,5	18,8	12,7	6,8	4,9
BG	8,2	29,5	25,0	16,1	8,1	4,4	2,3	1,0
HR	:	:	:	:	:	:	:	:
RO	13,5	28,8	20,9	12,3	7,1	4,9	1,5	1,8
TR	11,4	15,8	10,1	4,3	2,3	1,3	0,4	0,2

Source: Eurostat (UOE)

A30: Flow of tertiary students within the UOE data collection

	EU25	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU	HU	MT
Outgoing	468	12	7	7	64	4	51	28	58	16	43	17	4	6	7	8	1
EU25	352	10	5	4	43	2	43	22	41	14	35	15	2	4	6	6	1
EEA/ cand	9,5	0	0	0,9	0,8	0,1	4,3	0,1	0,2	0	0,1	0	0,1	0,1	0	0,1	0
US	52,5	0,8	1,2	0,9	9,3	0,3	2,3	3,6	7,2	1,1	3,3	0	0,4	0,6	0,1	1,2	0
other	54	1	0	1	11	1	1	2	9	1	5	2	1	2	0	0	0
Incoming	1039	42	10	18	241	1	12	54	222	10	36	5	2	1	0	12	0
EU25	352	21	8	4	72	1	10	29	37	4	13	0	1	0	0	4	0
EEA/ cand	85,9	0,9	0,2	3	47,2	0	0,4	1,3	9,4	0,3	2,8	0,1	0	0	0	4	0,1
US	26,4	0,2	0,1	0,3	3,5	0	0	0,6	3,1	2	0,3	0	0	0	0	0,2	0
other	575	19	2	11	118	0	2	23	172	4	20	5	2	0	0	4	0

	NL	AT	PL	PT	SI	SK	FI	SE	UK	IS	LI	NO		BG	HR	RO	TR
Outgoing	13	13	26	12	2	14	11	16	30	3	1	16		10	22	19	51
EU25	10	10	23	10	2	13	9	8	13	2	0	10		17	9	14	35
EEA/ cand	0,2	0,1	0,1	0	0,2	0	0,3	1,2	0,5	0,3	0	0		1,2	0,1	0,2	0,8
US	1,7	1,1	2,7	0,9	0,2	0,6	0,7	3,7	8,3	0,5	0	1,6		0.7	3.7	3.4	11.6
other	1	1	1	1	0	0	1	3	8	0	0	4		0	1	2	4
Incoming	21	31	8	15	1	2	7	32	255	1	:	11		1	8	10	13
EU25	11	19	2	3	0	1	2	15	97	0		4		2	0	2	3
EEA/ cand	1,3	4,9	0,6	0,1	0,4	0,1	0,3	2,4	6,3	0,1	0	0,4		0,8	0	0,2	0
US	0,3	0,3	0,4	0,5	0	0	0,2	1	13,6	0	:	0,3		0	0	0.1	0
other	8	7	5	12	0	1	4	14	139	0	0	6		0	5	8	10

(x 1000)

Source: **For EU, EEA and acceding countries: The UOE data collection. For the rest of the countries: UNESCO Institute of Statistics**

Additional notes:

* Total number of students independent of age, as percentage of 20-24 years old
BE: Data exclude independent private institutions, but these institutions are attended only by a very limited number of students.
DE, SI: Data exclude ISCED level 6
LU, Most tertiary students study abroad and are not included
CY: Most students in tertiary education study abroad and are not included in the enrolment data, but they are included in the corresponding population data. The participation rates are thus underestimated.
LU, JP: Data by age not available
IT, PL: Data by age in ISCED 6 not available, all ISCED 6 included in age above 24 years
DE, SI: Students in advanced research programmes (ISCED level 6) in these countries are excluded.
RO 2000/01-2001/02 Data excludes ISCED 6

A31: Inward and outward mobility of Erasmus teachers. Total number of TEACHERS by country, 2004/05

Country of home institution	Host Country																												
	BE	DK	DE	EL	ES	FR	IE	IT	LU	NL	AT	PT	FI	SE	UK	IS	LI	NO	BG	CZ	EE	CY	LV	LT	HU	MT	PL	RO	SI	SK
BE	0	19	33	37	106	97	16	44	0	61	26	60	89	28	21	2	0	13	14	28	7	1	10	13	22	4	52	53	6	6
DK	21	0	26	8	24	15	4	17	0	9	3	6	20	10	67	4	0	15	2	6	2	2	4	16	13	1	16	3	2	0
DE	34	30	0	67	256	298	35	195	1	36	111	66	187	67	183	1	1	40	61	165	24	2	40	59	149	5	230	120	16	33
GR	24	4	55	0	22	74	2	30	0	9	18	13	16	5	37	0	0	3	10	11	3	14	4	3	7	0	15	26	4	4
ES	73	18	232	37	0	345	33	524	6	56	56	248	61	42	154	2	0	14	13	31	5	1	2	6	28	4	76	28	6	10
FR	82	22	189	69	255	0	33	272	1	22	30	70	55	33	126	6	1	22	46	87	3	6	5	27	97	11	176	312	8	18
IE	6	3	37	5	25	27	0	9	0	3	8	5	10	5	10	1	0	5	1	7	0	0	0	4	3	1	9	3	1	0
IT	29	6	116	26	271	182	5	0	0	9	24	49	34	21	56	7	0	8	8	28	9	3	1	10	46	6	54	45	5	15
LU	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NL	63	19	79	8	28	47	9	21	0	0	18	30	52	28	53	0	0	21	5	34	2	0	7	7	26	1	44	16	2	11
AT	19	14	82	24	48	32	12	46	1	18	0	28	49	12	32	3	1	22	9	40	5	1	10	18	31	2	25	24	19	5
PT	40	10	45	8	142	60	5	53	0	17	5	0	26	6	29	0	0	6	4	19	2	2	1	11	16	1	30	20	7	4
FI	60	14	135	23	70	58	11	45	0	53	48	27	0	15	107	11	0	7	5	35	61	10	19	41	64	3	38	14	4	12
SE	21	9	53	20	43	35	6	27	0	17	11	16	22	0	53	5	0	9	2	16	8	0	8	29	20	0	35	8	4	1
UK	36	40	185	37	158	146	7	92	0	53	35	40	117	53	0	2	0	28	24	63	8	9	16	12	20	16	59	30	8	8
IS	0	2	12	0	4	5	0	6	0	1	3	1	5	3	6	0	0	0	0	0	1	0	0	3	1	0	0	0	1	0
LI	0	0	1	0	1	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
NO	17	23	42	3	26	10	1	11	0	20	9	11	13	19	37	0	0	0	0	13	3	0	7	6	5	0	17	0	0	2
EUR18	525	233	1323	372	1479	1433	179	1392	9	384	407	670	756	347	975	44	3	213	204	583	143	51	134	265	548	55	876	702	95	129
BG	29	4	85	33	13	47	3	27	0	9	12	17	13	7	28	0	0	0	0	6	0	0	0	4	1	0	7	0	1	2
CY	2	3	3	15	1	2	0	0	0	0	0	0	7	1	4	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
CZ	28	7	275	28	77	136	13	71	0	35	73	55	82	34	115	0	0	10	5	0	3	0	0	9	14	3	36	4	17	68
EE	10	8	30	7	6	6	3	13	0	4	8	5	96	6	17	1	0	5	1	1	0	0	4	7	5	0	0	0	0	0
HU	24	9	126	14	21	71	2	64	0	24	23	9	50	16	27	0	0	21	0	5	2	0	1	2	0	1	9	1	1	5
LV	10	4	41	2	9	12	1	0	0	3	13	4	29	5	2	0	0	7	0	3	8	0	0	28	0	0	16	0	7	1
LT	31	37	113	3	29	29	2	27	0	13	15	33	70	41	35	2	0	14	4	13	6	1	17	0	3	0	27	1	1	1
MT	1	0	6	0	1	5	0	17	0	4	1	1	0	5	12	0	0	0	0	2	0	0	0	0	0	0	2	0	0	0
PL	66	27	338	43	132	176	13	121	0	31	40	88	62	28	82	0	0	14	7	26	2	1	11	18	11	0	0	5	24	19
RO	58	5	103	65	57	302	1	102	0	15	18	32	9	2	15	0	0	0	0	1	0	0	0	1	2	0	8	0	0	0
SI	1	2	22	2	6	10	0	15	0	4	18	9	16	1	10	0	0	0	0	7	0	1	0	0	4	0	9	0	0	0
SK	9	3	59	8	11	20	4	23	0	12	9	14	22	7	15	0	0	6	1	38	0	0	3	6	3	0	16	0	0	0
TR	24	7	99	21	12	13	0	25	0	20	13	8	4	3	6	0	0	0	0	35	1	0	0	7	4	0	20	0	8	9
NMS/ CC	293	116	1300	241	375	829	42	505	0	174	243	275	460	156	368	3	0	77	19	137	22	3	36	82	47	4	150	11	59	105
TOTAL	818	349	2623	613	1854	2262	221	1897	9	558	650	945	1216	503	1343	47	3	290	223	720	165	54	170	347	595	59	1026	713	154	234

Source: DG Education and Culture (Erasmus programme)

A32: Inward and outward mobility of Erasmus students. Total number of STUDENTS by country, 2004/05

		Host Country																												
		BE	DK	DE	EL	ES	FR	IE	IT	LU	NL	AT	PT	FI	SE	UK	IS	LI	NO	BG	CZ	EE	CY	LV	LT	HU	MT	PL	RO	SI	SK
Country of home institution	BE	0	123	308	65	1325	740	122	420	0	335	137	198	219	176	308	7	0	40	16	65	5	3	2	9	39	12	104	23	18	5
	DK	58	0	326	16	296	285	34	95	0	117	56	12	16	29	326	11	0	30	0	20	1	3	1	4	14	4	25	0	1	5
	DE	319	477	0	175	4710	4306	861	1796	5	905	429	345	1028	1762	3087	70	12	529	39	310	49	18	36	78	259	46	566	41	45	28
	GR	151	43	380	0	413	427	24	245	0	110	79	93	114	88	114	5	0	24	3	90	5	3	0	5	25	0	26	14	6	0
	ES	1151	599	2509	173	0	3362	545	4631	0	1198	331	1130	547	769	2844	19	0	231	27	222	14	10	5	19	87	17	246	76	31	25
	FR	364	603	2863	211	5167	0	1071	1574	5	850	403	279	772	1179	4564	33	0	273	17	264	42	12	14	38	233	65	378	172	48	30
	IE	35	27	259	16	271	482	0	87	0	81	49	15	64	60	52	0	1	9	6	28	0	1	0	0	3	19	6	1	0	0
	IT	598	329	1772	162	6005	2651	255	0	0	519	301	796	324	377	1341	34	0	154	10	87	35	10	10	29	134	67	212	167	31	21
	LU	1	2	39	0	14	27	0	9	0	0	17	6	1	3	15	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0
	NL	205	183	409	46	926	536	103	306	0	0	115	96	309	425	617	11	0	123	5	59	17	1	2	5	79	14	62	12	14	3
	AT	73	101	231	46	646	510	140	443	0	205	0	87	220	344	374	17	0	93	3	68	15	4	8	17	38	14	52	6	34	16
	PT	194	71	261	44	989	306	21	668	0	228	55	0	99	95	164	3	0	26	6	151	7	3	7	47	76	1	194	66	37	17
	FI	125	30	613	77	508	422	99	194	0	378	231	79	0	96	502	17	0	13	10	158	44	10	4	27	148	19	75	8	23	14
	SE	81	24	411	30	314	465	80	160	0	226	156	38	15	0	513	13	0	13	0	41	3	1	7	5	39	7	41	2	9	1
	UK	115	137	986	34	1651	2144	31	668	0	381	130	93	213	251	0	3	0	80	7	133	9	12	2	5	29	19	56	7	5	12
	IS	3	42	31	4	26	18	2	10	0	6	12	0	6	12	16	0	0	0	0	1	0	0	8	1	0	0	1	0	0	0
	LI	0	5	0	0	4	0	3	2	0	0	0	2	4	1	3	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
	NO	27	57	199	12	220	171	17	99	0	106	50	26	13	36	164	0	0	0	0	34	5	0	0	2	16	3	19	0	2	1
	EUR 18	3500	2853	11598	1111	2348	16852	3408	1140	10	5645	2551	3295	3964	5704	1500	243	13	1638	149	1734	251	91	106	291	1221	307	2064	595	304	178
	BG	72	9	216	47	48	135	4	48	0	28	43	32	26	9	34	0	0	0	0	9	0	0	0	1	0	0	13	0	3	2
	CY	6	3	5	34	5	7	0	1	0	0	0	3	14	2	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	CZ	143	138	1008	69	354	553	66	188	0	226	244	194	269	181	367	2	0	42	6	0	1	0	2	15	11	0	49	2	15	21
	EE	11	24	67	6	43	40	2	36	0	26	20	10	85	33	20	0	0	1	0	2	0	0	6	1	2	0	2	0	2	3
	HU	125	69	610	43	157	282	8	238	0	162	120	44	205	63	108	0	4	33	2	5	1	0	0	0	0	0	17	0	9	1
	LV	40	23	157	6	21	39	9	21	0	27	29	14	83	46	22	1	0	12	0	2	4	3	0	29	0	0	14	0	1	4
	LT	79	156	294	21	81	102	18	85	0	35	46	54	190	131	32	4	0	31	2	24	3	0	22	0	8	0	42	1	5	4
	MT	6	6	1	0	17	9	3	56	0	2	0	2	4	3	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	PL	436	480	2237	167	764	1086	98	628	1	405	229	298	376	336	475	2	0	73	18	84	14	0	11	42	35	3	0	2	28	41
	RO	163	43	421	75	316	1116	16	442	0	73	38	114	27	28	76	0	0	0	0	2	0	0	0	0	1	0	10	0	1	0
	SI	34	27	142	6	94	65	4	68	0	40	89	38	33	31	33	0	0	0	2	13	0	0	2	1	1	0	17	0	0	0
	SK	62	20	202	29	96	130	6	71	5	34	73	41	57	28	37	0	0	9	0	36	1	0	1	4	3	0	31	2	1	0
	TR	50	31	326	44	32	104	5	83	0	135	57	32	17	33	27	0	0	0	0	35	0	1	0	4	15	0	72	0	9	30
	NMS/ CC	1227	1029	5686	547	2028	3668	239	1965	6	1193	988	876	1386	924	1265	9	4	201	30	212	24	4	44	97	76	3	267	7	74	106
	TOT AL	4727	3882	17284	1658	2551	20520	3647	13372	16	6838	3539	4171	5350	6628	16271	252	17	1839	179	1946	275	95	150	388	1297	310	2331	602	378	284

Source: DG Education and Culture (Erasmus programme)

ANNEX 3

STANDING GROUP ON INDICATORS AND BENCHMARKS

Country	Name			Position	Organisation
Austria	Mr	Harald	**TITZ**		Bundesministerium für Bildung, Wissenschaft und Kultur
Belgium (DE)	Mr	Georges	**KUPPENS**	Inspecteur pédagogique	Ministère de la Communauté Germanophone
Belgium (FR)	Ms	Nathalie	**JAUNIAUX**		Communauté française de Belgique
Belgium (NL)	Ms	Liselotte	**VAN DE PERRE**	Adjunct van de directeur	Departement Onderwijs - Secretariaat-Generaal
Bulgaria	Mr	Chavdar	**ZDRAVCHEV**	Senior expert	Ministry of Education and Science
Cyprus	Ms	Danae	**KASPARI**	Chief Education Officer	Ministry of Education and Culture
Czech Republic	Mr	Vladimir	**HULIK**	Analyst	Institute for Information on Education
Denmark	Mr	Ken	**THOMASSEN**	Special Adviser	Ministry of Education
Estonia	Ms	Silja	**KIMMEL**	Head of Analyses Department	Ministry of Education and Research
France	Mr	Gérard	**BONNET**		Ministère de l'éducation nationale (DEP)
Germany (Bund)	Ms	Melanie	**LEIDEL**		Statistisches Bundesamt
Germany (Bund)	Mr	Alexander	**RENNER**		Bundesministerium für Bildung und Forshung
Germany (Länder)	Mr	Jens	**FISCHER-KOTTENSTEDE**	Regierungsdirektor	Hessisches Kultusministerium
Greece	Ms	Evanthia	**BOTSARI**	University Professor	Pedagogical Institute
Hungary	Ms	Judit	**KÁDÁR-FÜLÖP**		Department for EU Coordination and Planning
Hungary	Ms	Tünde	**PETER**	Analyst	Statistics Department
Iceland	Ms	Margret	**HARDARDOTTIR**	Head of Division of Evaluation ans Supervision	Ministry of Education, Science and Culture
Iceland	Ms	Thóra	**MAGNÚSDÓTTIR**		Icelandic Mission to the EU
Ireland	Mr	Muiris	**O'CONNOR**		Department of Education and Science
Italy	Ms	Gianna	**BARBIERI**	Head of Statistical Office	Ministero dell'Istruzione, dell'Università e della Ricerca
Italy	Ms	Aurea	**MICALI**	Director	Ministero dell'Istruzione, dell'Università e della Ricerca
Italy	Ms	Angela	**VEGLIANTE**	Responsible International Relations	INVALSI
Lithuania	Mr.	Ričardas	**ALIŠAUSKAS**	Head of Strategic Planning & Analysis Division	Ministry of Education and Science
Luxembourg	Mr	Jean-Claude	**FANDEL**	Professeur chargé de mission	Ministère de l'Education nationale et de la Formation professionnelle
Malta	Mr	Joseph	**MAGRO**	Director (Planning Development)	Ministry of Education, Youth and Employment
Netherlands	Mr	Jacob	**VAN RIJN**	Senior Policy Advisor	Ministry of Education, Culture and Science
Norway	Mr	Ole-Jacob	**SKODVIN**	Deputy Director General	Ministry of Education and Research
Poland	Ms	Anna	**NOWOZYNSKA**	Chief specialist	Ministry of Education and Science
Portugal	Mr	Alexandre	**PAREDES**	Head of Statistics	Ministry of Education
Portugal	Ms	Maria João	**VALENTE ROSA**	Director	Ministry of Education
Romania	Mr	Romulus	**POP**	Expert	Ministry of Education and Research
Slovakia	Ms	Eva	**FRAYOVÁ**		Ministry of Education
Slovakia	Mr	Peter	**PLAVČAN**	Director	Ministry of Education
Slovenia	Ms	Zvonka	**PANGERC PAHERNIK**	Head of Information Unit	Slovenian Institute for Adult Education
Spain	Mr	Jesús	**DOMÍNGUEZ**	Senior Advisor	Ministry of Education, Institute of Evaluation
Spain	Mr	Jesús	**IBAÑEZ MILLA**	Deputy Director	Ministry of Education, Statistics Unit
Spain	Ms	Carmen	**MAESTRO MARTÍN**	Directora	Ministry of Education, Institute of Evaluation
Suomi/Finland	Ms	Kirsi	**KANGASPUNTA**	Planning Director	Ministry of Education
Sweden	Ms	Annelie	**STRÅTH**	Head of Statistics and Analysis Unit	Ministry of Culture, Education and Science
United Kingdom	Mr	Steve	**LEMAN**	Principal Research Officer	Department for Education and Skills, England
United Kingdom (Scotland)	Mr	Peter	**WHITEHOUSE**	Head of Education and Children Statistics	Scottish Executive