

## I

*(Information)*

## COUNCIL

## 'EDUCATION &amp; TRAINING 2010'

## THE SUCCESS OF THE LISBON STRATEGY HINGES ON URGENT REFORMS

**Joint interim report of the Council and the Commission on the implementation of the detailed work programme on the follow-up of the objectives of education and training systems in Europe**

(2004/C 104/01)

**EDUCATION & TRAINING 2010: KEY MESSAGES FROM THE COUNCIL AND THE COMMISSION TO THE EUROPEAN COUNCIL**

1. Human resources are the European Union's main asset. They are central to the creation and transmission of knowledge and a determining factor in each society's potential for innovation. Investment in education and training is a key factor of the Union's competitiveness, sustainable growth, and employment and therefore a prerequisite for achieving the economic, social and environmental goals set in Lisbon for the European Union. Equally, it is essential to strengthen synergies and complementarity between education and other policy areas, such as employment, research and innovation, and macroeconomic policy.

2. The Council and the Commission re-state their determination to work at Member State and EU levels towards reaching the agreed goal of making education and training systems in Europe a world-wide quality reference by 2010. The adoption at European-level of benchmarks in five key areas is a further proof of Education Ministers' intentions. In order to support the efforts of the Member States, the following three priority areas should be acted upon simultaneously and without delay:

*Focus reform and investment on the key areas for the knowledge-based society*

In order to make the European Union the leading knowledge-based economy in the world, there is an urgent need to invest more, and more efficiently and effectively in human resources. This involves a higher level of public sector investment in key areas for the knowledge society and, where appropriate, a higher level of private investment, particularly in higher education, adult education and continuing vocational training. Community funding, including the structural funds and the education and training programmes, should have an increasing role to play in supporting the development of human capital.

*Make lifelong learning a concrete reality*

There is a need for coherent and comprehensive national lifelong learning strategies. In this context, it is necessary to promote more effective partnerships between key actors including business, the social partners and education institutions at all levels. These strategies should include the validation of prior learning, and the creation of learning environments that are open, attractive and accessible to everyone, especially to disadvantaged groups. Common European references and principles should be developed as a matter of priority and implemented according to national situations, and within Member States competences.

*Establish a Europe of Education and Training*

There is a need to develop a European framework, based on national frameworks, to stand as a common reference for the recognition of qualifications and competences. The recognition of diplomas and certificates everywhere in Europe is essential to the development of a European labour market and of European citizenship. Member States should also take the appropriate measures to remove obstacles to mobility and provide the necessary financial support, in the context of and beyond the Community programmes.

3. Progress has been achieved such as the adoption of the 'Erasmus Mundus' and 'eLearning' programmes and the enhancement of European cooperation in the area of Vocational Education and Training and Higher Education. Although progress has also been achieved at national level, there are deficits in important areas such as the limited participation in lifelong learning. The transition to the knowledge-based society represents both a challenge and an opportunity for the new Member States. Their commitment and experience in reforms represent a contribution to the progress of the EU as a whole.

4. In the light of the above considerations and as a contribution to the Lisbon objectives, the pace of reforms of education and training systems should be accelerated. Similarly, 'Education and Training 2010' should be duly taken into account in the formulation of national policies. In this overall context, the Council and the Commission underline the importance they attach to the role of the next generation of education and training programmes. The Council and the Commission will report every two years to the European Council on progress in the implementation of the 'Education & Training 2010' work programme.

#### INTRODUCTION: A DETERMINING ROLE IN THE LISBON STRATEGY

At the Lisbon European Council held in March 2000, the Heads of State and Government acknowledged that 'the European Union is confronted with a quantum shift resulting from globalisation and the challenges of a new knowledge-driven economy' and set the EU a major strategic goal for 2010 'to become 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'. It stressed that this would require not only a 'radical transformation of the European economy', but also a 'challenging programme for modernising social welfare and education systems'.

Education and training policies are central to the creation and transmission of knowledge and are a determining factor in each society's potential for innovation. They are therefore central to this new dynamic situation, complementing and acting in synergy with other areas of Community action, including employment, social inclusion, research and innovation, culture and youth policy, enterprise policy, the information society, economic policy and the internal market. Education and training benefit from developments in these domains and in return contribute to strengthening their impact. This implies a recognition of the role of education and training systems, which goes hand in hand with greater responsibility and an increasingly pressing need to modernise and transform, particularly in view of the enlargement of the EU.

Human resources are the Union's main asset and it is now acknowledged that investment in this area is a determining factor of growth and productivity, in the same way as investment in capital and equipment. It has been calculated that raising the average educational attainment of the popu-

lation by one year represents a 5 % increase in growth in the short term and a further 2,5 % in the long term<sup>(1)</sup>. In addition, the positive impact of education on employment<sup>(2)</sup>, health, social inclusion and active citizenship has already been extensively shown.

For the Union to perform better than its competitors in the knowledge-based economy, investing more and more effectively in education and training is of paramount importance. This observation is all the more relevant as the new challenges stemming from the knowledge-based society and economy are set to further intensify in the years ahead. Confronted with a likely extension of the average length of working life and ever more rapidly occurring economic and technological changes, people will have to continue to update their competences and qualifications increasingly often. The promotion of employability and mobility within an open European labour market, as a complement to the single market for goods and services, must be a priority, thereby placing new demands on education and training. In this context, it is essential to build stronger relationships between the education and training world and employers so that each has a better understanding of the needs of the other. At the same time, the knowledge-based society generates new needs in terms of social cohesion, active citizenship and personal fulfilment to which education and training can make a significant contribution.

Against this background, the Stockholm European Council of March 2001 adopted three strategic goals for education and training systems (and 13 associated concrete objectives), focusing on quality, access and openness to the wider world<sup>(3)</sup>. In March 2002, the Barcelona European Council approved the programme of work to implement these goals<sup>(4)</sup>, and called for closer co-operation in the fields of higher education and vocational training. The work programme constitutes the strategic reference framework for the development of education and training policies at the Community level in order to make education and training systems in Europe 'a world reference for quality by 2010'.

<sup>(1)</sup> Commission Communication 'Investing efficiently in education and training: an imperative for Europe'. COM(2002) 779 of 10 January 2003 (doc. 5269/03).

<sup>(2)</sup> Unemployment rates decrease with higher levels of education. This results in a reduction of the related economic and social costs. Equally, the higher the levels of education, the higher employment rates of the working population are.

<sup>(3)</sup> 'Education' Council report to the European Council on the 'concrete future objectives of education and training systems' (doc. 5980/01)  
<http://register.consilium.eu.int/pdf/en/01/st05/05980f1.pdf>

<sup>(4)</sup> Detailed work programme on the follow-up of the objectives of education and training systems in Europe (OJ C 142, 14.6.2002)  
<http://ue.eu.int/newsroom/related.asp?BID=75&GRP=4280&LANG=1>

This joint document from the Council and the Commission responds to the Barcelona European Council's request for a report on the implementation of the work programme on the objectives in March 2004<sup>(5)</sup>. The report takes stock of progress made to date, pinpoints the challenges to be faced and proposes measures to be taken if the objectives set are to be attained.

Given the need to integrate education and training policies contributing to the Lisbon objectives, this joint report also deals with the implementation of the Recommendation and the Action Plan on mobility<sup>(6)</sup>, the Council Resolution on lifelong learning<sup>(7)</sup> and the Copenhagen Ministerial Declaration on 'enhanced European co-operation in vocational education and training'<sup>(8)</sup>. It is also informed by the follow-up of a number of Commission Communications, particularly those relating to the urgent need to invest more and more effectively in human resources<sup>(9)</sup>, the role of the universities in the Europe of knowledge<sup>(10)</sup>, the necessity to raise the profile of the researcher in Europe<sup>(11)</sup>, and the comparison of performance in education across the Union with the rest of the world.

#### SECTION I: FURTHER ACTION REQUIRED AS TIME IS RUNNING OUT

As highlighted recently by the Brussels European Council in October 2003<sup>(12)</sup>, the development of human capital is a prerequisite for the promotion of growth in the EU, notably through increased investment in education and a better integration with social policies and employment. Similarly, the employment guidelines adopted by the European Council in

<sup>(5)</sup> Point 43 of the conclusions of the Barcelona European Council held on 15 and 16 March 2002 (doc. SN 100/1/02 REV 1).

<sup>(6)</sup> Recommendation of 10 July 2001 of the European Parliament and of the Council 'on the mobility within the Community of students, people in training, volunteers, teachers and trainers' (OJ L 215, 9.8.2001) and the Action plan for mobility (OJ C 371, 23.12.2000).

<sup>(7)</sup> Council Resolution of 27 June 2003 on lifelong learning (OJ C 163, 9.7.2002).

<sup>(8)</sup> Declaration of the Ministers with responsibility for vocational education and training and of the Commission meeting in Copenhagen on 29-30 November 2002 and concerning enhanced European co-operation in the area of vocational education and training ([http://europa.eu.int/comm/education/copenhagen/index\\_en.html](http://europa.eu.int/comm/education/copenhagen/index_en.html)). It is based on a Resolution of the (Education) Council of 19 December 2002 on the same subject (OJ C 13, 18.1.2003).

<sup>(9)</sup> Commission Communication 'Investing efficiently in education and training: an imperative for Europe'. COM(2002) 779 of 10 January 2003 (doc. 5269/03).

<sup>(10)</sup> Commission Communication on 'The role of the universities in Europe of Knowledge' COM(2003) 58 final of 5 February 2003 (doc. 5355/03).

<sup>(11)</sup> Commission Communication on 'Researchers in the European Research Area: one profession, multiple careers'. COM(2003) 436 of 18 July 2003 (doc. 12420/03).

<sup>(12)</sup> Point 19 of the conclusions of the Brussels European Council, 16-17 October 2003 (doc. SN 300/03).

June 2003<sup>(13)</sup> place emphasis on the development of human capital and lifelong learning. More recently, the report of the Employment Taskforce chaired by Mr Wim Kok underlined that the European Union is at risk of failing in its ambitious goal set at Lisbon in 2010 and emphasised the necessity of investing more and more efficiently in human capital.

Transforming education and training systems is a medium or even a long-term process. The debates and the reforms already launched in the (current and future) Member States of the European Union show that those in charge of education and training, including the social partners, are getting organised to tackle the problems facing them. They have set about adjusting their systems and provisions to the challenges of the knowledge-based society and economy. In this context, it must be borne in mind that (current and future) Member States have different starting points and that the reforms undertaken reflect different national realities and priorities.

It is only two years since the work programme was adopted and that is too short a period to measure exactly how much progress has been made. On the other hand, it is possible and very important at this stage to assess how much remains to be done in order to reach the ambitious but realistic objectives which were established jointly. The available reports and indicators point to the same conclusion that is, if the education and training objectives are to be attained, the pace of reforms should be accelerated. There are still too many shortcomings which restrict the potential for development in the Union. This is all the more important as the impact of reforms on education and training systems takes time to filter through, and the target date of 2010 is not all that far away. Furthermore, the future Member States have in many cases a lot of progress to make in terms of developing a knowledge-based economy and society. Their full participation in the work programme is essential and they need to be supported in this endeavour.

### 1.1. Progress has been made in European co-operation

#### 1.1.1. First steps in the implementation of the work programme

The work programme on the objectives of the education and training systems sets up, in a way which is more structured than hitherto, an area of co-operation between 31 European countries<sup>(14)</sup> and involves the actors concerned (representatives of civil society and European social partners) and international organisations (such as the OECD, Unesco and the Council of Europe).

<sup>(13)</sup> Council Decision of 22 July 2003 on the guidelines for employment policy in the Member States (OJ L 197, 5.8.2003).

<sup>(14)</sup> The 15 Member States, and, in the wake of the Bratislava ministerial declaration of June 2002, the 10 acceding countries, the three candidate countries and three EFTA/EEA countries (Iceland, Liechtenstein and Norway).

It covers all systems and levels of education and training and takes account of new policy initiatives, particularly the recently adopted the Erasmus Mundus<sup>(15)</sup> and eLearning<sup>(16)</sup> programmes and the promotion of foreign language learning and language diversity<sup>(17)</sup>.

Working groups have been set up in successive waves since the second half of 2001 in order to support the implementation of the common objectives. This was necessary in order to identify the priority themes, make an inventory of existing experience, define a preliminary list of indicators for monitoring progress and to secure the consensus needed between all the interested parties. On this basis, most of the working groups have collected and selected examples of good practice with regard to policy and strategy implemented in the different countries. These will be examined at a later stage with a view to identifying factors of success. Such examples will be widely disseminated and serve as a support tool for policy development at national level.

Indicators and European reference levels ('benchmarks') are among the instruments of the open method of co-ordination which are important for the 'Education & Training 2010' work programme<sup>(18)</sup>. The Ministers of Education took a decisive step in May 2003 by agreeing on five European benchmarks to be attained by 2010, while stressing they do not define national targets nor prescribe decisions to be taken by national governments<sup>(19)</sup>. Some countries have translated these into national objectives as a contribution to attaining the European reference levels.

The Council and the Commission stress the need to step up national action in the key areas of 'Education & Training 2010'

<sup>(15)</sup> Decision of the European Parliament and Council of 5 December 2003 establishing a programme for the enhancement of quality in higher education and the promotion of intercultural understanding through co-operation with third countries (Erasmus Mundus) (2004-2008) (OJ L 345, 31.12.2003).

<sup>(16)</sup> Decision of the European Parliament and of the Council of 5 December 2003 adopting a multi-annual programme (2004-2006) for the effective integration of information and communication technologies (ICT) in education and training systems in Europe (eLearning programme) (OJ L 345, 31.12.2003).

<sup>(17)</sup> Promoting language learning and linguistic diversity. An action plan 2004-2006. COM(2003) 449 of 24 July 2003 (doc. 11834/03).

<sup>(18)</sup> The March 2003 Brussels European Council stressed the relevance of 'benchmarks to identify best practice and to ensure efficient and effective investment in human resources'.

<sup>(19)</sup> Council Conclusions of 5 May 2003 on reference levels of European average performance in education and training (benchmarks) (OJ C 134, 7.6.2003).

and for stronger Community action, and in particular through the exchange of good practice, to support national efforts.

#### 1.1.2. Higher education is central to the Europe of Knowledge

Given that the higher education sector is situated at the crossroads of research, education and innovation, it is a central player in the knowledge economy and society and key to the competitiveness of the European Union. The European Higher Education Sector should therefore pursue excellence and become a world-wide quality reference to be in a position to compete against the best in the world.

There are a number of key points on which substantial progress has been made or is in preparation under the Bologna process. At their recent meeting in Berlin<sup>(20)</sup>, the Ministers from the participating countries identified a number of short-term priorities in order to step up the momentum towards the objective of creating a European Higher Education Area by 2010. First of all, Ministers from the participating countries:

- committed themselves to supporting further development of quality assurance at institutional, national and European level and stressed the need to develop mutually shared criteria and methodologies in this field,
- committed themselves to having started the implementation of the two-cycle degree structure by 2005. In this context, they also undertook to elaborate an overarching framework of qualifications for the European Higher Education Area,
- underlined the importance of the Lisbon Convention on the recognition of qualifications<sup>(21)</sup> which should be ratified by all countries participating in the Bologna process,
- set the objective that every student graduating as from 2005 should receive the Diploma Supplement automatically and free of charge.

Ministers also underlined the importance of strengthening synergies between the European higher education area and the European research area. Finally, they agreed to monitor progress in all the participating countries.

<sup>(20)</sup> 'Realising the European Higher Education Area'. Communiqué from the Conference of Ministers responsible for higher education in Berlin on 19 September 2003.

<sup>(21)</sup> Convention on the recognition of qualifications concerning higher education in the European region.

Although this progress is significant, it should be borne in mind that the role of higher education in the Lisbon strategy goes beyond the programme of reforms initiated by the Bologna Declaration. The role of the universities<sup>(22)</sup> covers areas as diverse and as vital as the training of teachers and that of future researchers; their mobility within the European Union; the place of culture, science and European values in the world; an outward-looking approach to the business sector, the regions and society in general; the incorporation of the social and citizen-focused dimensions in courses. With its Communication on 'The role of the universities in the Europe of knowledge'<sup>(23)</sup>, the Commission launched a consultation of all the players in the university community on the key issues of funding, the diversity of institutions in terms of functions and priorities, the setting up of centres of excellence, the attractiveness of careers, and work in networks. The Commission will communicate its conclusions and proposals for higher education in Europe in the first half of 2004.

#### 1.1.3. *First concrete results from the implementation of the Copenhagen declaration*

Vocational education and training have a vital role to play in reaching the Lisbon goals, in terms of providing people with the competences and qualifications, which respond to the rapidly evolving needs of the modern labour market. The diversity and specificity of vocational education and training systems and provisions in Europe present particular challenges in relation to transparency, quality and recognition of competences and qualifications. In particular, levels of mobility in vocational education and training remain low in relation to those in higher education.

The Copenhagen declaration, adopted by the Ministers of 31 European countries, the European social partners and the Commission, in November 2002, gave a new impetus to European co-operation in this field, in order to address these issues within the perspective of lifelong learning. The first year of intensive co-operation has yielded concrete preliminary results. A proposal for a single European framework for transparency of qualifications and competences (the new 'Europass'), which rationalises existing tools, was presented by the Commission in December 2003<sup>(24)</sup> and will be considered by the Council and the European Parliament in the coming months.

<sup>(22)</sup> 'University' means any type of higher education institution, according to national legislation or practice, which offers qualifications or diplomas at that level, whatever such establishments may be called in the Member States.

<sup>(23)</sup> Commission Communication: 'The role of the universities in Europe of knowledge', COM(2003) 58 final of 5 February 2003 (doc. 5355/03).

<sup>(24)</sup> Proposal for a Decision of the European Parliament and of the Council on a single framework for the transparency of qualifications and competences (Europass). COM(2003) 796 final of 17 December 2003 (doc. 5032/04).

A common quality assurance framework, including a common core of quality criteria and a coherent set of indicators has also been developed. The foundations of a European credit transfer system for vocational education and training have been laid, with a view to giving a boost to mobility. Lastly, a draft set of common European principles for the validation of non-formal and informal learning has also been developed.

Despite these important developments at European level, and the significant efforts which have been made at national level to improve the profile and status of the vocational route, the quality of vocational education and training remains very variable throughout Europe. At the same time, many sectors are faced with a shortage of skilled and qualified employees. An extra effort is required to make vocational education and training as attractive for young people as general education. The momentum that has already been built up needs to be sustained by actors at all levels, including the social partners, who share the responsibility for reaching the Lisbon goals in this field.

#### 1.1.4. *Need to increase the level and quality of mobility in education and training*

The national reports sent as part of the implementation of the Recommendation on mobility<sup>(25)</sup> illustrate the efforts undertaken by countries to promote mobility, including the removal of (administrative or legal) obstacles. However, only certain Member States have clearly defined strategies for mobility or co-ordination structures. These should provide examples of good practice for other Member States when developing their mobility measures.

In spite of steady improvement within and outside Community programmes, the number of persons participating in mobility continues to be very limited. According to figures covering Community programmes only, students participating in Erasmus amount to 120 000 per year (which represents less than 1 % of the student population).

The level of participation in VET and among teaching and training staff is proportionally even more inadequate: in 2002, only about 40 000 people took part in a mobility scheme financed by the Leonardo da Vinci programme and about 55 000 teachers — all levels included — benefited from Comenius mobility grants.

<sup>(25)</sup> Report from the Commission on the follow-up to the Recommendation of the European Parliament and the Council of 10 July 2001 on mobility within the Community of students, persons undergoing training, volunteers and teachers and trainers (COM(2004) 21 of 23 January 2004) (doc. 5780/04).

The causes for such inadequacy include the persistence — in spite of recent progress — of a number of legal and administrative barriers, in particular as regards social protection, taxation, and recognition of study periods, diplomas and qualifications for academic or professional purposes. Furthermore, the lack of funding and an inadequate organisational framework continue to obstruct the mobility of students and even more so that of young people in training and of teaching and training staff.

## 1.2. The European Union must catch up with its main competitors

According to recent analyses<sup>(26)</sup>, the European Union as a whole lags behind the United States and Japan as regards the level of investment<sup>(27)</sup> in the knowledge-based economy, although certain Member States have levels which are comparable or better than those two countries. As regards performance<sup>(28)</sup> in the knowledge-based economy, the EU also lags behind the US but is ahead of Japan. Things did improve in the second half of the 1990s, but the EU needs to step up its efforts to be in position to close the gap with the US by 2010.

### 1.2.1. A lack of investment in human resources

The Lisbon European Council called upon the Member States to bring about 'a substantial annual increase in the per capita investment in human resources'. In 2000, total public expenditure on education measured as a proportion of GDP was 4,9 % in the European Union, a figure comparable to that of the United States (5,0 %) and higher than that of Japan (3,6 %).

The EU is suffering from under-investment from the private sector, particularly in higher education and continuing training, which partly reflects differences in structures of the financing of education. In comparison with the EU, the private investment in educational institutions is four times higher in the United States (2,2 % of GDP compared with 0,6 %) and twice higher in Japan (1,2 %). In addition, the expenditure per student in the United States is higher than that of the vast majority of EU countries at all levels of the education system. The biggest difference is in higher education: the

United States spends between two and five times more per student than EU countries.

### 1.2.2. Not enough higher education graduates

If the EU is to be competitive in the knowledge-based economy, it also needs a sufficiently high number of higher education graduates with qualifications suitably adapted to the needs of the research Community and the labour market. The fact that secondary education is lagging behind has a knock-on effect at the higher education level. On average in the EU, 23 % of males and 20 % of females in the 25 to 64 age range hold a higher education qualification, a figure well below that for Japan (36 % of males and 32 % of females) and the United States (37 % for the overall population).

### 1.2.3. The EU attracts less talent than its competitors

The Ministers of Education set the objective of turning the EU into the 'the most-favoured destination of students, scholars and researchers from other world regions'<sup>(29)</sup>. Even if the EU, together with the United States, is the only region of the world to be a net beneficiary in terms of mobility, most Asian and South American students prefer to go to the United States. Up to recently, there were twice as many European students in the United States as American students coming to Europe for their studies. The former are generally seeking a full qualification at the host university, usually at advanced levels or in scientific and technological areas. The latter come to Europe generally for a short period as part of the course of their university of origin, usually at an early stage of their syllabus and more often than not for human or social sciences.

The EU 'produces' more university qualified persons and doctors in sciences and technology than the USA or Japan (25,7 % of the total number of higher education graduates for the EU compared with 21,9 % and 17,2 % respectively for Japan and the USA). At the same time, the percentage of researchers in the active population is much lower in the EU (5,4 researchers per 1 000 in 1999) than in the USA (8,7) or Japan (9,7), and particularly in private companies. This is due to researchers deciding to change profession<sup>(30)</sup> (which is the case for as much as 40 % new PhD holders). Furthermore, the European labour market is much more limited for researchers who leave the EU to pursue their careers elsewhere, mainly in the USA, where they have better career opportunities and working conditions.

<sup>(26)</sup> Towards a European Research Area, Key Figures 2003-2004. European Commission, Directorate General for Research.

<sup>(27)</sup> The composite indicator of investment includes sub-indicators relating to investment in R&D, number of researchers and science and technology, PhDs per capita, investment in education, participation in lifelong learning, e.government and gross fixed capital formation.

<sup>(28)</sup> The composite indicator of performance includes the following elements: overall labour productivity, scientific and technological performance, e-commerce and educational attainment levels.

<sup>(29)</sup> Detailed work programme on the follow-up of the objectives of Education and training systems in Europe (OJ C 142, 14.6.2002).

<sup>(30)</sup> Commission Communication to the Council and the European Parliament 'Researchers in the European research area: one profession, multiple careers'. COM(2003) 436 of 18 July 2003 (doc. 12420/03).

### 1.3. Many warning lights are still on

Although the EU as a whole has made good progress in a number of areas, an analysis of the situation highlights deficits in other areas which have to be addressed if the common objectives are to be attained <sup>(31)</sup>:

#### 1.3.1. Rates of early school leavers are still too high

The EU has made tackling the problem of early school leavers one of its priorities. In 2002, almost 20 % of young people aged 18 to 24 in the EU had prematurely dropped out of school and were on the fringes of the knowledge society (the corresponding figure for acceding countries amounted to 8,4 %). The Ministers of Education have agreed on a target to bring this rate down to 10 % by 2010. Although good progress has already taken place and there is ground for optimism, the majority of Member States need to maintain their efforts to reach the target in this area.

#### 1.3.2. Too few women in scientific and technological fields

The March 2001 Stockholm European Council pointed to the need to encourage young people, particularly young women, to become interested in scientific and technological fields and careers. A substantial part of the EU research and innovation capacity depends on this. The Council has set two objectives: to bring about a 15 % increase by 2010 in the number of students in these fields and redress the imbalance between women and men. While the first objective is more likely to be attained, the second will require considerable effort: in the EU countries there are currently 2 to 4 times more men than women in the scientific and technological disciplines.

#### 1.3.3. Completion of upper secondary education

Completing upper secondary education is increasingly important not just for successful entry into the labour market, but also to allow students access to the learning and training opportunities offered by higher and further education. Member States therefore agreed that by 2010, at least 85 % of 22 year olds in the European Union should have completed upper secondary education.

The current level of completion of upper secondary education in the EU reached 76 % in 2002. Inclusion of acceding countries, which have a completion rate of 90 %, slightly improves the EU average to 78,8 %. If present trends can be sustained, Member States should be on track to reach the objective in 2010.

<sup>(31)</sup> Based on the latest data available (2000, 2001, 2002). See the Statistical Annex and, for more comprehensive data, the Commission staff services paper doc. 5648/04 (SEC(2004) 73).

#### 1.3.4. Nearly 20 % of young people fail to acquire key competences

Everyone needs to acquire a minimum set of competences in order to learn, work and achieve fulfilment in a knowledge-based society and economy. However, in the fundamental domain of reading, the OECD calculated <sup>(32)</sup> that in 2000 17,2 % of young people under 15 in the current EU Member States only achieved the lowest level of proficiency. The EU has still a long way to go to be able to reach the objective set by the Member States of reducing this percentage by 20 % by 2010.

A slight increase has been observed in the number of foreign languages learned per pupil in general secondary education, the figure having risen from 1,2 foreign languages per pupil at the start of the 1990s to an average of 1,5 in 2000. Much remains to be done to reach the objective of guaranteeing that all pupils/students learn at least two foreign languages, as set by the Barcelona European Council in March 2002. This figure does however not provide indication as to the actual quality of language teaching and learning. To fill in this gap, the Commission, in co-operation with Member States, is in the process of developing a linguistic competence indicator, as required by the Barcelona European Council.

#### 1.3.5. Too few adults participating in lifelong learning

In a knowledge-based society, people must continue to update and improve their competences and qualifications, and make use of the widest possible range of learning settings. An analysis of the national contributions received in follow-up to the Council Resolution on lifelong learning <sup>(33)</sup> corroborates the progress and the shortcomings already observed in the context of the analysis of the national action plans for employment <sup>(34)</sup> and in the recent report of the Employment Task force. In many countries, certain links in the lifelong learning chain are insufficiently developed <sup>(35)</sup>.

The shortcomings to be addressed frequently stem from a vision overly concerned with the requirements of employability or an over-exclusive emphasis on rescuing those who slipped through the net of initial education. This is perfectly justifiable, but does not on its own constitute a lifelong learning strategy which is genuinely integrated, coherent and accessible to everyone.

<sup>(32)</sup> Results from the PISA survey (OECD, 2000).

<sup>(33)</sup> These are national reports on the implementation of the Resolution on lifelong learning. A summary is available at the following address  
[http://europa.eu.int/comm/education/policies/2010/et\\_2010\\_en.html](http://europa.eu.int/comm/education/policies/2010/et_2010_en.html)

<sup>(34)</sup> Communication from the Commission to the Council 'Draft Joint Employment Report 2003/2004' (COM(2004) 24 of 21 January 2004) (doc. 5620/04).

<sup>(35)</sup> This is the case in particular of: co-ordination between all the parties concerned; the development of flexible learning pathways and bridges between the different systems and learning frameworks; a permanent culture of learning from the earliest possible age; public-private partnerships; and learning at the place of work.

The objective of achieving a 12,5 % rate of adult participation in further education and training calls for special attention in most (current and future) Member States. The rate of participation in 2002 has been estimated at 8,5 % in the EU, i.e. a mere 0,1 % higher than in 2001 and at only 5,0 % in the acceding countries. What is more, that figure, which had been steadily rising since the mid-1990s, has been stable over the last years.

### 1.3.6. A shortage of qualified teachers and trainers is looming

On average, 27 % of primary school teachers and 34 % of secondary school teachers in the EU are over 50. By 2015, it is estimated that over a million primary and secondary school teachers will have to be recruited and therefore trained. This massive regeneration of teaching staff levels in a majority of countries is simultaneously a considerable challenge and an opportunity.

But people are not queuing up to join the profession and some countries could well be faced with a major shortage of qualified teachers and trainers, as was recently stressed by the OECD <sup>(36)</sup>. This situation prompts questions as regards the ability to attract and retain the best talent through supportive career structures and the need for high quality continuing training to prepare teachers for their changing roles.

## SECTION II: THE THREE LEVERS OF SUCCESS

The foregoing observations emphasise the urgent need for reforms and to carry forward the Lisbon strategy much more resolutely. The objectives set for education and training in the detailed work programme adopted in 2002 remain fully valid for the years ahead. They must naturally be flexible enough to adapt to changing needs. It is the responsibility of Member States to identify the areas most in need of action according to their national situations, and in view of the common objectives. However, in order to support the efforts of the Member States, the following three levers should be acted upon simultaneously and without delay:

— concentrate reforms and investment on the key areas,

— make lifelong learning a concrete reality,

<sup>(36)</sup> 'Education at a glance: OECD indicators' (2003 edition).

— establish at last a Europe of education and training.

### 2.1. Focus reform and investment on the key areas

In the Council Conclusions on the development of human capital <sup>(37)</sup>, Member States agreed to 'strengthen structured co-operation in support of the development of human capital and ensure a regular monitoring process as part of the work programme on the objectives of education and training systems'. The resources needed in education and training and their effectiveness should be a matter of priority in discussions between ministers at the Community level in the context of the implementation of the work programme on the objectives of education and training systems. Member States and the Commission should reflect upon the most urgent areas for co-operation.

The action taken under the project 'Economics of education' launched by the Commission will help to sustain this reflection, particularly as regards the identification of the areas and groups where investment will be most fruitful. There is also a useful body of studies and analyses from international organisations (such as the OECD) that should be fully exploited to enable the EU to draw inspiration from international best practice.

#### 2.1.1. Mobilise the necessary resources effectively

In the current economic and budgetary climate, the case for a 'substantial increase' in investment in human resources sought by the Lisbon European Council remains stronger than ever, particularly as it conditions future growth as well as social cohesion. In compliance with the Broad Economic Policy Guidelines for the period 2003 to 2005 <sup>(38)</sup> and the Guidelines for Employment Policies, active measures should be taken to promote investment in knowledge, including by improving the quality and efficiency of education and training systems. Furthermore, spending on human capital should not be considered as a cost but as an investment. The necessary increase in resources should come from both the public and the private sector and the roles and responsibilities between the various actors should be clearly defined taking account of the national systems and situations. The necessary increase should be combined with a more efficient use of resources, inter alia through focusing investment on areas which result in higher quality and relevance, better educational outcomes, and through targeting investment based on the needs of individuals.

<sup>(37)</sup> Council Conclusions of 25 November 2003 on the 'Development of human capital for social cohesion and competitiveness in the knowledge society' (OJ C 295, 5.12.2003).

<sup>(38)</sup> Council Recommendation of 26 June 2003 on the broad guidelines of the economic policies of the Member States and the Community (for the 2003-2005 period) (OJ L 195, 1.8.2003).

At national level

- A higher level of public sector investment in certain key areas: targeted increases in public investment can be achieved within the current budgetary constraints; this can be done by reducing pockets of inefficiency and by relevant rechanneling of existing resources towards education and training.
- A bigger contribution from the private sector, particularly in higher education, adult education and continuing vocational training. In these areas where public authorities must preserve their role, particularly in terms of ensuring equitable access to quality education and training, the private sector contribution should be encouraged, given the demands of the knowledge society and the constraints of public budgets, through incentive measures. In particular, enhanced private investment should reflect the shared responsibility between employers and employees for the development of competences.

At Community level

Community funding, including the Structural Funds and the European Investment Bank <sup>(39)</sup>, also has to play an increasing part in supporting the development of human capital. Member States should make greater use of them for investments in education and training, taking due account of the objectives set by the Lisbon strategy.

2.1.2. *Make the profession of teacher/trainer more attractive*

The success of the reforms undertaken hinges directly on the motivation and the quality of education and training staff. Member States should therefore, where necessary, and in accordance with national legislation and practices, implement measures to make the teacher/trainer profession more attractive. This includes steps to attract the best talents to the profession and to retain them, including through attractive working conditions and adequate career structure and development. They must also be prepared for their changing roles in the knowledge-based society and in transforming the education and training systems. In particular, Member States should, according to national legislation and practices, further consolidate continuing training for educational staff to enable them to meet these challenges.

**2.2. Make lifelong learning a concrete reality**2.2.1 *Put in place comprehensive, coherent and concerted strategies*

As stressed in the Council Resolution of June 2002 <sup>(40)</sup>, lifelong learning is the guiding principle of education and training

<sup>(39)</sup> The EIB's 'Innovation 2010' initiative.

<sup>(40)</sup> Council Resolution of 27 June 2002 on lifelong learning (OJ C 163, 9.7.2002).

policies. The new requirements of lifelong learning call for radical reform and the implementation of truly comprehensive, coherent and concerted national strategies, taking the European context into account.

In particular, efforts should focus on the following areas:

*Equipping all citizens with the key competences they need*

Individuals' personal development and fulfilment, their social and professional integration and any subsequent learning is largely dependent on the acquisition of a package of key competences by the end of obligatory schooling. This package, for which Member States are responsible, could include communication in the mother tongue and in foreign languages, mathematical literacy and basic competences in science and technology, ICT skills, learning-to-learn skills, inter-personal and civic competences, entrepreneurship and cultural awareness. In this context, Member States should in particular:

- develop coherent language policies, including relevant teacher training. Young people, their families, as well as private and public bodies, should also be made more aware of the advantages of learning several languages and preserving linguistic diversity; in this context, the Council recently invited Member States 'to take the measures they deem appropriate to offer pupils, as far as possible, the opportunity to learn two, or where appropriate, more languages in addition to their mother tongue' <sup>(41)</sup>;
- further encourage the development of a scientific and technical culture: this needs to be carried forward through reforms in teaching methods and practices. In particular, action should be taken to motivate young people, particularly girls, to undertake scientific and technical studies and careers;
- further promote entrepreneurship skills: this should result in the development of creativity and sense of initiative and be based on a cross-curricular approach. Schools should also be empowered to run activities promoting entrepreneurial attitudes and skills.

In this context, ICT-related services should further be developed, making fuller use of their potential in teaching methods and organisation and involving learners more closely.

<sup>(41)</sup> Council Resolution of 14 February 2002 on the promotion of linguistic diversity and language learning in the framework of the implementation of the objectives of the European Year of Languages 2001 (OJ C 50, 23.2.2002).

*Creating learning environments which are open, attractive and accessible to everyone*

- Teachers and trainers should be encouraged to adapt their learning and teaching methods to take account of their changing roles. In this context, the integration of ICT can play a useful role in terms of developing innovative and effective pedagogies adapted to the individual needs of learners.
- Flexible and open qualifications and competences frameworks should be developed. Such approaches should encourage lifelong learning and arrangements whereby people can have their competences acquired in non-formal and informal settings recognised.
- The role, quality and co-ordination of information and guidance services should be strengthened so that they support learning at all ages and in a range of settings, empower citizens to manage their learning and work, particularly making it easier for them to access and progress through diverse learning opportunities and career pathways. Due account should be taken of individual requirements and needs of the different target groups.
- Partnerships at all levels (national, regional, local and sectoral) should be strengthened in order to achieve, in the context of shared responsibility, full involvement of all partners (institutional, the social partners, learners, teachers, civil society, etc.) in the development of education and training systems which are flexible, effective and open to their environment.

In line with the Guidelines for Employment and as agreed in the Council Resolution on Lifelong Learning, Member States should step up their efforts towards developing and implementing coherent and comprehensive lifelong learning strategies. It would be desirable if such strategies were in place by 2006. This should cover all the levels and dimensions (be they formal or non-formal) of the systems and be done with the involvement of all the actors concerned, including the social partners. In this context, the Council and the Commission look forward to the European social partners' annual report on the implementation of their 'Framework of actions for the lifelong development of competences and qualifications' <sup>(42)</sup>.

#### 2.2.2. Target efforts at the disadvantaged groups

Young adults, highly qualified people and those in active employment are better placed with regard to lifelong

learning. They are aware of the advantages of updating their competences and are therefore more motivated.

Conversely, disadvantaged groups, such as people with low levels of literacy or qualifications, older workers, groups living in disadvantaged areas or outlying regions, and people with learning difficulties or with disabilities, are often comparatively unacquainted with the opportunities that exist through education and training. They consider institutions and programmes of low relevance in relation to their needs. Given the Lisbon objectives of competitiveness and social cohesion, it is important to pursue the contribution of education and training to social inclusion policies.

As mentioned in the Council Resolution on 'early school leaving and school disaffection' <sup>(43)</sup>, the prime task of school is to work, through education, to provide successful training for every young person, by supporting their aspirations and making the most of their abilities. Furthermore, it is essential to increase the awareness of the disadvantaged groups of the advantages of education and training and to make the systems more attractive, more accessible and tailored more closely to their needs. In this context, emphasis should be placed on prevention, early detection and individual follow-up of those at risk. The Community follow-up to the implementation of national lifelong learning strategies will pay particular attention to this aspect.

#### 2.2.3. Apply common European references and principles

The development of common European references and principles can usefully support national policies. Although such common references and principles do not create obligations for Member States, they contribute to developing mutual trust between the key players and encouraging reform. These common references and principles are being developed with regard to a number of major aspects of lifelong learning as part of the implementation of the work programme of the objectives of education and training systems and of the Copenhagen Declaration.

They relate to:

- the key competences everyone should be able to acquire and on which the successful outcome of any further learning depends;
- the competences and qualifications needed by teachers and trainers in order to fulfil their changing roles;
- good quality mobility;

<sup>(42)</sup> Framework of Actions for the lifelong development of competences and qualifications signed by ETUC, UNICE/UEAPME and CEEP of 28 February 2002.

<sup>(43)</sup> Council Resolution of 25 November 2003 on 'Making school an open learning environment to prevent and combat early school leaving and disaffection among young people and to encourage their social inclusion' (OJ C 295, 5.12.2003).

- the validation and recognition of non-formal and informal learning;
- the provision of guidance services;
- quality assurance for vocational education and training;
- and a European Credit Transfer System for vocational education and training.

These European common references and principles should be developed as a matter of priority and implemented at national level, taking account of national situations and respecting Member States' competences.

### 2.3. Establish a Europe of education and training

#### 2.3.1. *The need for a European qualifications framework*

The European labour market cannot function effectively and smoothly without a European framework to stand as a common reference for the recognition of qualifications. It is a matter which has also significant implications for every member of society and society itself: equal opportunities on the European labour market and the development of European citizenship also depend on the extent to which the EU citizens will really be able to have their diplomas and certificates recognised everywhere in Europe. Given the diversity across Europe in structures and organisation, learning outcomes and competences acquired through the programmes or training periods are important reference levels for the description of qualifications.

A framework of this kind in Europe should naturally be based on the national frameworks which themselves must be coherent and cover higher education and vocational education and training. The necessary mutual trust can only stem from quality assurance instruments which are appropriately compatible and credible so that they can be mutually validated.

In this connection, the common quality assurance framework for the vocational education and training (as part of the follow-up to the Copenhagen Declaration) and the 'development of an agreed set of standards, procedures and guidelines for quality assurance' <sup>(44)</sup> (in conjunction with the Bologna process and as part of the work programme on the objectives of education and training systems <sup>(45)</sup>) should be top priorities for Europe.

<sup>(44)</sup> 'Realising the European Higher Education Area'. Communiqué from the Conference of Ministers responsible for higher education in Berlin on 19 September 2003.

<sup>(45)</sup> Objective 3.5: Strengthening European co-operation.

#### 2.3.2. *Increase mobility through removing obstacles and active promotion*

Several actions mentioned in the previous sections will contribute to facilitating mobility, in particular the development of a European qualifications framework. Also in the context of the Bologna process, Ministers recently committed themselves to promoting mobility, in particular through steps enabling the portability of national loans and grants. However, administrative and legal obstacles to mobility persist, in particular in relation to the recognition of competences and qualifications.

Member States should take the appropriate measures to eliminate such obstacles. Furthermore, Member States should also provide the necessary financial support, in the context of and beyond the Community programmes, set an adequate organisational framework to improve the quality of mobility, and develop virtual mobility particularly in primary and secondary schools. Mobility for learning or teaching purposes should be increased at all levels, notably as part of the Community education and training programmes. Particular attention should be paid to mobility of teachers and trainers as part of their career development and of people in vocational education and training.

#### 2.3.3. *Consolidate the European dimension of education*

Fifty years after its launch, the European project still has not succeeded in attracting the appropriate level of interest and the full support of EU citizens. Progress has been made, particularly thanks to the impact of Community actions and programmes in the areas of education, training and youth, but despite that surveys regularly bring confirmation that there is an urgent need to strengthen the people-focused dimension of the European Union <sup>(46)</sup>.

This aspect was a focal point of the work of the Convention on the future of Europe, one of the central ambitions of which was to get the people of Europe more firmly behind the idea of European integration. School has a fundamental role to play allowing everyone to be informed and understand the meaning of European integration.

All education systems should ensure that their pupils have by the end of their secondary education the knowledge and competences they need to prepare them for their role as a future citizen in Europe. This entails amongst other things stepping up language teaching at all levels and strengthening the European dimension in the training of teachers and in the primary and secondary level curriculum.

<sup>(46)</sup> 'Public Opinion in the European Union'. Eurobarometer 59 (June 2003). European Commission, DG Press and Communication.

## SECTION III — RAISE THE PROFILE OF 'EDUCATION & TRAINING 2010'

### 3.1. Increase the visibility of the European work programme

'Education & Training 2010' will succeed at the national and Community levels only if it is given its rightful place in the overall Lisbon strategy. The experience of the first two years of its implementation shows the need to raise the profile and status of the European work programme at all levels. If education and training are to be a driving force for the Lisbon strategy, 'Education & Training 2010' should be duly taken into account in the formulation of national policies.

In the future, countries should better harness energies and overcome the current deficit as regards the involvement of all the stakeholders and civil society in general, in order to increase at the national level the visibility and impact of the European work programme. Ongoing campaigns to provide information and to make optimum use of it will be needed at both national and Community levels.

### 3.2. Implement the process more effectively

It is essential to make the best use of the open method of co-ordination adapted to the fields of education and training in order to maximise its effectiveness. 'Education & Training 2010' is a complex programme for which considerable human and financial resources have been assembled, making it possible to pave the way for co-operation. For the period ahead, steps will be taken to better define the mandates of the working groups, rationalise methods and enhance synergy. Appropriate forms of peer review could also be developed and applied in order to allow small groups of countries to work together on issues of common interest.

The impact and the visibility of the overall activity also depend on the consistency between the different initiatives taken in education and training. By 2006, the incorporation of actions at European level relating to vocational education and training (priorities and follow-up of the Copenhagen Declaration), lifelong learning (follow-up to the Council Resolution) and mobility (implementation of the Mobility Recommendation and Action Plan) should be a reality.

For the 31 countries involved in 'Education & Training 2010', there should also be closer co-ordination with the Bologna process. Generally speaking, the case for non integrated parallel action will be increasingly weaker in the future, be it in higher education or in vocational training, unless it is manifestly more ambitious and more effective.

The work carried out to date has pinpointed the key areas for which there is a lack of relevant and comparable data for monitoring progress in relation to the objectives set. The quality and comparability of the existing indicators need to be improved, particularly in the field of lifelong learning, and regularly reviewed. Priorities should be established for the development of a restricted number of new indicators, taking due account of the work carried out by other bodies active in this area. The Standing Group on Indicators and all the working groups in place are invited to propose by the end of 2004 a limited list of new indicators and their modalities of development. On that basis, the Commission will submit a list of new indicators for consideration to the Council. The following areas should come in for particular attention: key competences, and particularly learning to learn; investment efficiency; ICT; mobility; and adult education and vocational education and training.

### 3.3. Strengthen co-operation and monitoring of progress

In order to maintain the momentum, which has been built, the Council and the Commission consider that it is essential to establish a regular follow-up of progress made towards the common objectives of education and training systems. This represents an important step forward in terms of increasing the impact and efficiency of the open method of co-ordination in the field of education and training. At the same time, such a follow-up mechanism should avoid creating too much bureaucracy.

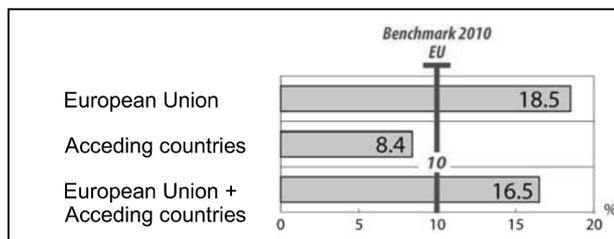
The Council and the Commission will submit every two years a joint report to the Spring European Council on the implementation of the work programme ('Education & Training 2010') on the objectives of education and training systems (i.e. in 2006, 2008 and 2010). In this context, Member States will provide the Commission with the necessary information on actions taken and progress made at national level towards the common objectives. Where possible, this should be articulated with the reporting process of the European employment and social inclusion policies.

Such information from Member States should reflect the priorities guiding reforms and actions at national level depending on the situation specific to each country. This would replace the specific reports currently asked for as part of the implementation of the Mobility Action Plan and of the follow-up to the Council Resolution on Lifelong Learning. Under the integrated approach, this information would also cover the implementation of the Copenhagen Declaration and could cover aspects related to the Bologna process.

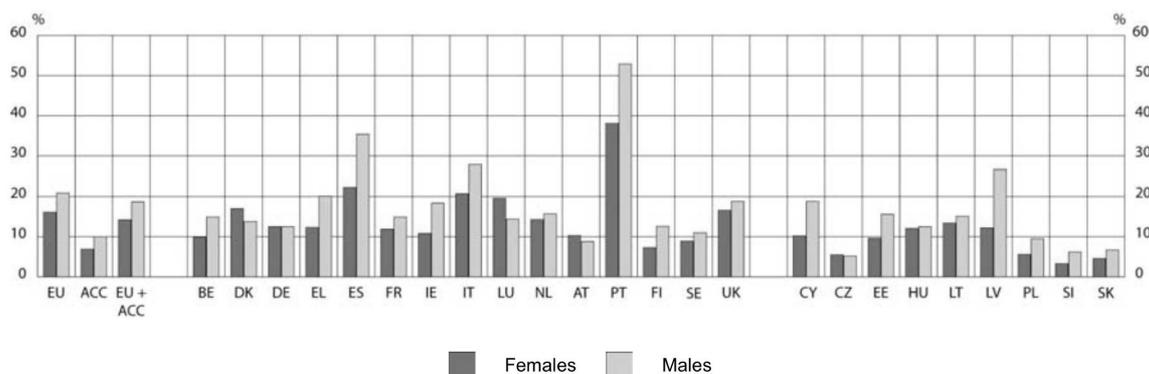
## STATISTICAL ANNEX

## EARLY SCHOOL LEAVERS

Share of the population aged 18-24 with only lower secondary education and not in education or training (2002)



Data source: Eurostat, Labour force survey.



	BE	DK	DE	EL	ES	FR	IE	IT	LU	NL	AT	PT	FI	SE	UK
Total	12,4	15,4	12,5	16,1	29,0	13,4	14,7	24,3	17,0	15,0	9,5	45,5	9,9	10,0	17,7
Females	9,9	17,0	12,5	12,3	22,3	11,9	10,8	20,7	19,6	14,3	10,3	38,1	7,3	8,9	16,6
Males	14,9	13,8	12,5	20,1	35,4	14,9	18,4	27,9	14,4	15,7	8,8	52,9	12,6	11,0	18,8

	EU	ACC	EU + ACC		CY	CZ	EE	HU	LT	LV	PL	SI	SK
Total	18,5	8,4	16,5		14,0	5,4	12,6	12,3	14,3	19,5	7,6	4,8	5,6
Females	16,1	6,9	14,2		10,2	5,5	9,6	12,1	13,4	12,2	5,6	3,3	4,6
Males	20,9	10,0	18,7		18,8	5,2	15,6	12,5	15,1	26,7	9,5	6,2	6,7

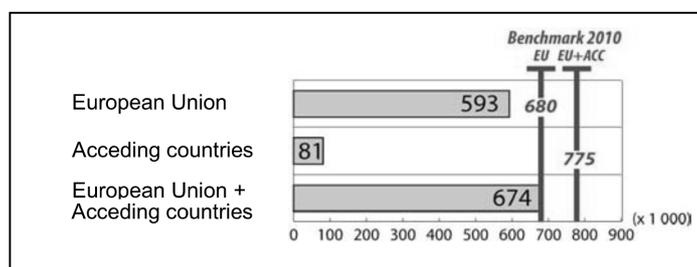
Data source: Eurostat, Labour Force Survey.

Note: Data for UK only provisional. Malta: Data not available.

The current EU average rate of early school leavers is 18,5%. In acceding countries, only around 8,4% of the population aged 18-24 leaves school with only lower secondary education. These countries thus perform better than EU-countries when it comes to the percentage of early school leavers. In a number of countries the percentage of early school leavers has been decreasing steadily since the early 1990's. This is the case for instance in Greece, France and Luxembourg. In Denmark and Portugal, however, a downward trend in the beginning of the 1990's has been reversed from the mid 1990's, so the rate of early school leavers is close to the level of the beginning of the 1990's.

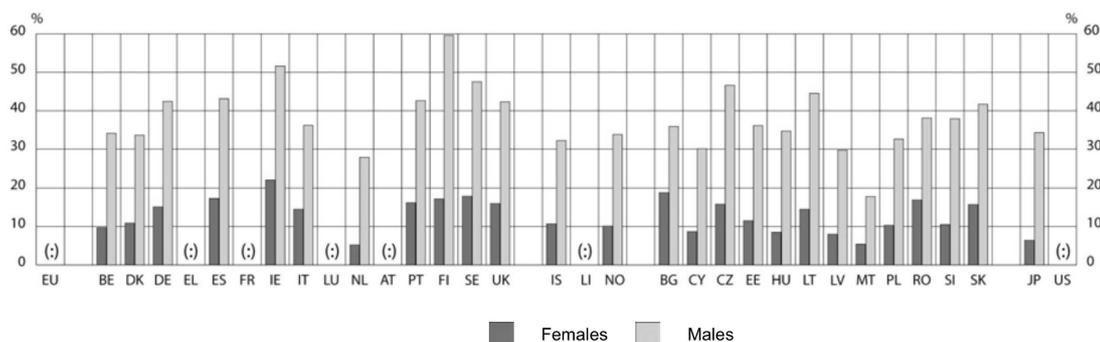
## GRADUATES IN MATHEMATICS, SCIENCE AND TECHNOLOGY

Total number of tertiary (ISCED 5A, 5B and 6) graduates from mathematic, science and technology fields (2001)



Data source: Eurostat, UOE.

Students enrolled in mathematics, science and technology as a proportion of all students in tertiary education (ISCED 5A, 5B and 6) (2001)



	EU	BE	DK	DE	EL	ES	FR	IE	IT	LU	NL	AT	PT	FI	SE	UK
Total	(:)	21,2	20,8	29,1	(:)	29,5	(:)	35,5	24,0	16,8	16,5	(:)	27,5	36,8	30,0	27,9
Females	(:)	9,7	10,9	15,1	(:)	17,3	(:)	22,1	14,5	(:)	5,2	(:)	16,2	17,2	17,9	16,0
Males	(:)	34,1	33,6	42,4	(:)	43,1	(:)	51,6	36,2	(:)	28,0	(:)	42,6	59,6	47,5	42,3

	IS	LI	NO	BG	CY	CZ	EE	HU	LT	LV	MT	PL	RO	SI	SK	JP	US
Total	18,7	(:)	19,8	26,2	17,7	31,3	21,3	20,4	26,6	16,3	11,0	19,9	26,9	22,5	28,3	21,9	(:)
Females	10,7	(:)	10,1	18,8	8,7	15,8	11,5	8,5	14,5	8,0	5,4	10,3	16,9	10,5	15,7	6,4	(:)
Males	32,2	(:)	33,8	35,9	30,1	46,6	36,1	34,7	44,5	29,7	17,8	32,6	38,1	37,9	41,7	34,3	(:)

Data source: Eurostat, UOE.

Additional notes: DK, FR, IT, L, FI, UK and CY: Data refer to 2000. Greece: Data not available. Data for UK only provisional.

The available data <sup>(1)</sup> indicate that EU-15 would need to increase the number of graduates in mathematics, science and technology by nearly 90 000 per year by 2010. Following the next enlargement of the Union, in 2004, the European benchmark is naturally higher and EU-25 will need to increase the total number of graduates in the fields by more than 100 000 per year.

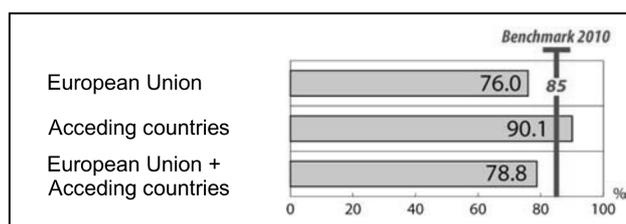
<sup>(1)</sup> Data on graduates, including by gender, presently suffer from a lack of comparability, linked to the double counting of graduates in some countries.

When studying enrolment rates in mathematics, science and technology at tertiary level, it is clear, as underlined in the Council Conclusions on European Benchmarks, that the gender imbalance is a highly relevant issue. In fact, Ireland is the only country where more than 20 % of the females are enrolled in these fields. By contrast, the Netherlands and Belgium have less than 10 %. The situation is similar in a number of acceding countries (Cyprus, Hungary, Latvia and Malta). Improving the gender balance of students in the area of mathematics, science and technology will contribute to the aim of increasing the overall number of graduates in these fields.

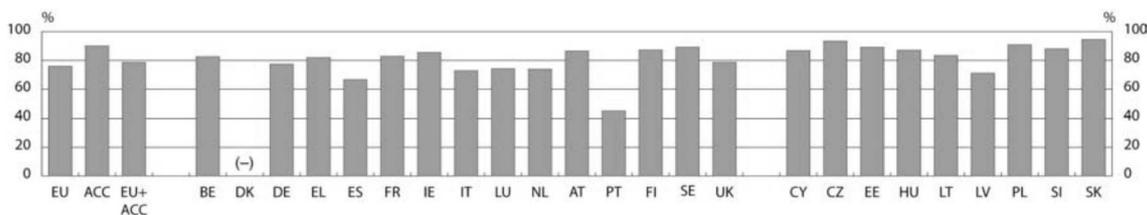
When analysing the proportion of males enrolled, it appears clearly that these fields of study are most popular among males in Ireland and Finland (more than 50 % of male students are enrolled). These differences in enrolment rates result in variations from one country to another in terms of the proportion of mathematics, science and technology graduates as a percentage of all graduates.

### COMPLETION OF UPPER SECONDARY EDUCATION

Percentage of those aged 22 who have successfully completed at least upper secondary education (ISCED 3), 2002 <sup>(1)</sup>



Data source: Eurostat, Labour force survey.



BE	DK	DE	EL	ES	FR	IE	IT	LU	NL	AT	PT	FI	SE	UK
82,6	(-)	77,4	82,1	66,6	82,9	85,6	72,9	74,2	73,9	86,5	44,9	87,3	89,3	78,7

EU	ACC	EU + ACC	CY	CZ	EE	HU	LT	LV	PL	SI	SK
76,0	90,1	78,8	86,9	93,4	89,2	87,2	83,5	71,2	91,0	88,1	94,6

Source: Eurostat, Labour force survey, 2002.

— Notes: (1) comparable data for Denmark on the completion rate of 22 year olds not available. However, the structural indicator on educational attainment shows that, in Denmark, 79,6 % of the 20 to 24 year olds had at least completed upper secondary education (2002),

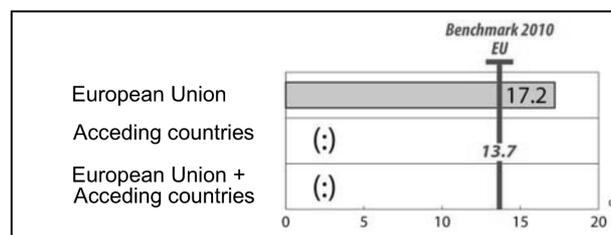
(2) data for UK only provisional. Malta: data not available.

<sup>(1)</sup> The indicator presented here was chosen in accordance with the benchmark adopted by the Council which refers to 22-year olds. This indicator is however considered of limited validity by Eurostat due to the relative small sample on which it is based as part of the Labour Force Survey. In monitoring this benchmark, this indicator will be used jointly with the structural indicator on educational attainment based on the % of the population aged 20 to 24 having completed at least upper secondary education.

The current average level in the European Union is 76 %. It should be kept in mind that while several countries have only increased these figures slightly in recent years, others have made significant progress, like, for instance, Portugal. On average, in the EU and the acceding countries, almost 79 % of 22-year-olds have successfully completed at least upper secondary education. Several EU countries are at present achieving completion rates beyond 80 % such as Belgium, France, Greece, Ireland, Austria, Finland and Sweden. Conversely, Portugal has the lowest percentage (45 %), a level that should however be seen in the context of its rapid growth during recent years. The average level of completion of upper secondary level education in the acceding countries is 90,1 %. In all the acceding countries, the completion rate for upper secondary education lies around the EU average figure or above. The cases of Slovakia (94,6 %), the Czech Republic (93,4 %) and Poland (91,0 %) are especially noteworthy.

### KEY COMPETENCIES

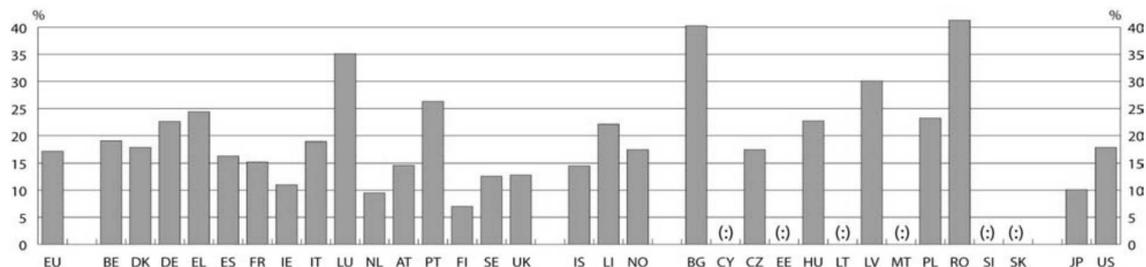
#### Percentage of pupils with reading literacy proficiency level 1 and lower (on the PISA reading literacy scale), 2000



Data source: OECD, PISA 2000 database <sup>(1)</sup>.

Explanatory note:

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. In 2000, the percentage of 15 year olds in level 1 or below in the European Union (15) is equal to 17,2. Therefore, the benchmark has been fixed at 13,7.



EU	BE	DK	DE	EL	ES	FR	IE	IT	LU	NL	AT	PT	FI	SE	UK
17,2	19,0	17,9	22,6	24,4	16,3	15,2	11,0	18,9	35,1	9,5	14,6	26,3	7,0	12,6	12,8

IS	LI	NO	BG	CY	CZ	EE	HU	LT	LV	MT	PL	RO	SI	SK	JP	US
14,5	22,1	17,5	40,3	(:)	17,5	(:)	22,7	(:)	30,1	(:)	23,2	41,3	(:)	(:)	10,1	17,9

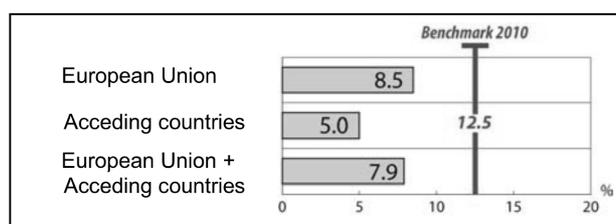
Data source: OECD, PISA 2000 database.

<sup>(1)</sup> The results from the Netherlands have been published only partially in the OECD PISA report because the Netherlands did not meet the required response rate of 80 %.

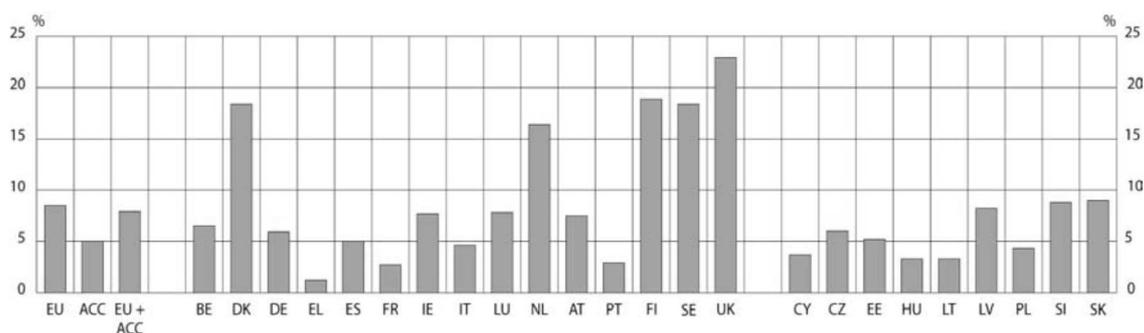
The table shows that, in average, 17,2 % of the 15 year-olds are low performers in the member countries. According to the European benchmark adopted by the Council, this proportion should decrease by 20 % and reach 13,7 % in 2010. Finland, the Netherlands, Ireland, Austria, Sweden and UK all have less than 15 % of their 15 year olds that are low-performers according to the definition of the PISA reading literacy survey. But other countries of the Union experience higher proportions of pupils in this category. In Germany, Greece, Luxembourg and Portugal, more than 20 % are low performers according to the survey. This figure exceeds 40 % in Bulgaria and Romania.

### PARTICIPATION IN LIFELONG LEARNING

Percentage of population aged 25-64 participating in education and training in 4 weeks prior to the survey (2002)



Data source: Eurostat, Labour force survey.



	BE	DK	DE	EL	ES	FR	IE	IT	LU	NL	AT	PT	FI	SE	UK
Total	6,5	18,4	5,9	1,2	5,0	2,7	7,7	4,6	7,8	16,4	7,5	2,9	18,9	18,4	22,9
Females	6,3	20,7	5,6	1,1	5,4	3,0	8,8	4,7	6,6	15,9	7,4	3,3	21,4	21,2	26,8
Males	6,8	16,1	6,2	1,2	4,5	2,4	6,5	4,5	9,1	16,9	7,6	2,4	16,5	15,6	19,3

	EU	ACC	EU + ACC		CY	CZ	EE	HU	LT	LV	PL	SI	SK
Total	8,5	5,0	7,9		3,7	6,0	5,2	3,3	3,3	8,2	4,3	8,8	9,0
Females	9,2	5,4	8,5		3,8	5,8	6,7	3,7	4,2	10,9	4,7	9,2	9,4
Males	7,9	4,5	7,3		3,6	6,2	3,6	2,9	2,3	5,2	3,9	8,4	8,7

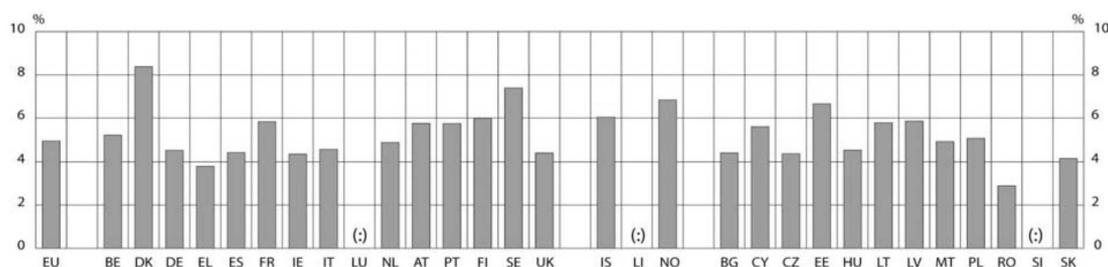
Data source: Eurostat, Labour Force Survey.

Note: FR: Information on education and training is collected if these are under way on the date of the survey, instead of the 4 weeks preceding the survey as in the other countries. Additional note: Malta: Data not available.

The average EU-15 percentage is 8,5 %, meaning that, for any period of a month, 8-9 out of 100 people will have participated in education and training activities <sup>(1)</sup>. The average trend across EU-15 has been steady for the last four years. It will, however, be lowered with the enlargement, as the estimated average for the acceding countries for 2002 is 5,0. There is a very high variation between countries. The four best performing countries are the UK, Sweden, Finland and Denmark, followed closely by the Netherlands. The average level of the best performing countries is above 20 % while much lower levels are registered in a number of Member States and of acceding countries.

## INVESTMENT IN HUMAN RESOURCES

### 1. Public expenditure on education as a percentage of GDP, 2000



EU-15	EU + ACC	BE	DK	DE	EL	ES	FR	IE	IT	LU	NL	AT	PT	FI	SE	UK
4,94	4,94	5,21	8,38	4,53	3,79	4,43	5,83	4,36	4,58	(:)	4,87	5,75	5,74	5,99	7,39	4,41

IS	LI	NO	ACC	BG	CY	CZ	EE	HU	LT	LV	MT	PL	RO	SI	SK
6,04	(:)	6,84	4,86	4,41	5,60	4,38	6,66	4,54	5,78	5,86	4,91	5,06	2,89	(:)	4,15

Data source: Eurostat, UOE.

The data shows clearly that public expenditure on education and training as a % of GDP differs greatly between individual countries. In Denmark and Sweden, it represents more than 7 % of GDP. In a number of countries (Belgium, France, Austria, Portugal, and Finland), expenditure on education accounts for between 5-6 % of GDP. In Germany, Greece, Spain, Italy, Ireland, the Netherlands and in the UK, this percentage is lower than 5 %. Education is also an important spending item in the acceding countries. In Estonia, public expenditure on education represents more than 6 % of GDP. It represents between 5 and 6 % in Cyprus, Latvia, Lithuania and Poland.

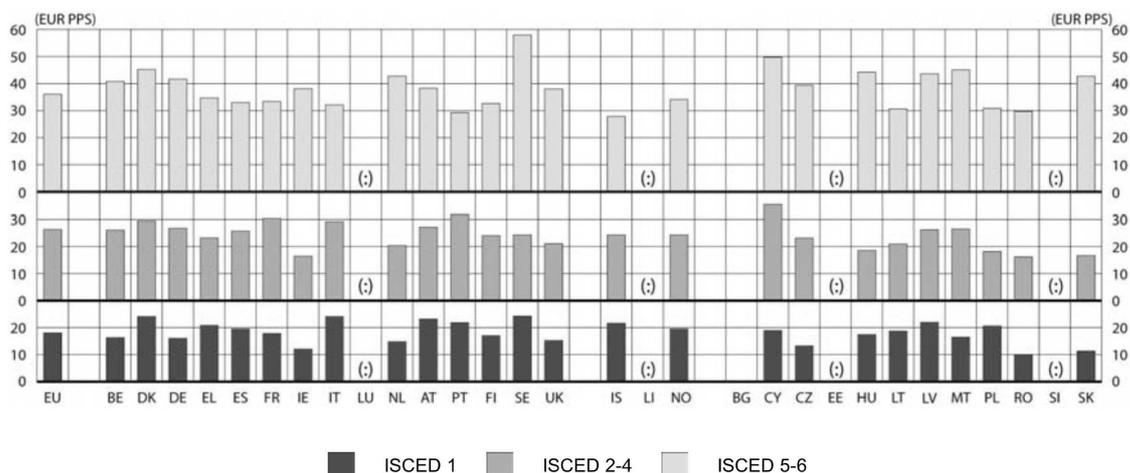
Between 1995 and 2000, public expenditure as a proportion of GDP tended to fall slightly, rising in only four countries. Only Greece recorded substantial increases; while Ireland, Finland and the UK saw significant reductions <sup>(2)</sup>. This must of course be seen in the context of demographic development, since the bulk of public expenditure on education is aimed at young people, and the share of the population aged under 25 in the EU declined by more than 1,5 percentage points between 1995 and 2000. At the same time, data show that the proportion of young people in education and the qualifications they achieve continued to grow.

<sup>(1)</sup> The Commission is currently preparing an Adult Education Survey (AES). The final proposal for the survey will be made by the end of 2004 and it will be based on the recommendations of the Task Force which is currently developing the related methodology. The AES is expected to yield a more comprehensive measure of participation in lifelong learning.

<sup>(2)</sup> This observation has to be qualified in the case of Ireland and Finland, because of fast growth in GDP. In Ireland, for example, total spending on education doubled between 1993 and 2000 while GDP grew by 140 % (both in nominal terms). The result is that the ratio fell notwithstanding the fast growth in absolute spending.

## 2. Total expenditure on educational institutions per pupil/student by level of education relative to GDP per capita (2000)

The indicator shows that the acceding countries, in terms of the total expenditure per pupil/student relative to GDP per capita, are performing at almost the same level as the current Member States. In Belgium, Denmark, Germany, the Netherlands and Sweden, total expenditure per pupil/student compared to GDP per capita accounts in tertiary education for more than 40 %. The same can be observed in Cyprus, Hungary, Latvia, Malta and Slovakia. France and Portugal (with 30 %) have the highest total expenditure per pupil/student compared to GDP per capita in secondary education. The same can be observed in Cyprus. The total expenditure per pupil/student compared to GDP per capita in primary education amount to more than 20 % in Denmark, Greece, Italy, Austria, Portugal, Sweden, Latvia and Poland.



	EU	BE	DK	DE	EL	ES	FR	IE	IT	LU	NL	AT	PT	FI	SE	UK
ISCED 1	36,1	40,8	45,3	41,7	34,7	33,0	33,3	38,1	32,2	(.)	42,8	38,3	29,3	32,6	57,8	38,0
ISCED 2-4	26,3	26,1	29,5	26,8	23,2	25,7	30,3	16,4	29,2	(.)	20,3	27,1	31,7	24,0	24,2	21,0
ISCED 5-6	18,0	16,3	24,2	16,1	20,9	19,5	17,8	12,1	24,2	(.)	14,8	23,1	21,9	17,1	24,2	15,2

	IS	LI	NO	EU + ACC	ACC	BG	CY	CZ	EE	HU	LT	LV	MT	PL	RO	SI	SK
ISCED 1	27,9	(.)	34,2	36,6	35,4	(.)	49,9	39,4	(.)	44,1	30,6	43,6	45,0	30,8	29,7	(.)	42,7
ISCED 2-4	24,3	(.)	24,3	26,1	20,1	(.)	35,5	23,1	(.)	18,5	20,9	26,2	26,4	18,1	16,2	(.)	16,6
ISCED 5-6	21,6	(.)	19,5	17,4	18,3	(.)	19,0	13,2	(.)	17,4	18,7	22,0	16,4	20,6	9,9	(.)	11,3

Data source: Eurostat, UOE.