



Towards a benchmark on the contribution of Education and Training to Employability: a discussion note

Elena Arjona Perez, Kornelia Kozovska and Christelle Garrouste



EUR 24147 EN 2010

Towards a benchmark on the contribution of Education and Training to Employability: a discussion note

Elena Arjona Perez, Christelle Garrouste and Kornelia Kozovska

The mission of the JRC-IPSC is to provide research results and to support EU policy-makers in their effort towards global security and towards protection of European citizens from accidents, deliberate attacks, fraud and illegal actions against EU policies.

European Commission
Joint Research Centre
Institute for the Protection and Security of the Citizen

Contact information

Address: Econometrics and Applied Statistics Unit, Via Enrico Fermi 2749 – Ispra (VA) - Italy

E-mail: elena.arjona-perez@jrc.ec.europa.eu
christelle.garrouste@jrc.ec.europa.eu
kornelia.kozovska@jrc.ec.europa.eu

Tel.: +39 0332 786448

Fax: +39 0332 785733

<http://ipsc.jrc.ec.europa.eu/>

<http://www.jrc.ec.europa.eu/>

Legal Notice

Neither the European Commission nor any person acting on behalf of the Commission is responsible for the use which might be made of this publication.

***Europe Direct is a service to help you find answers
to your questions about the European Union***

Freephone number (*):

00 800 6 7 8 9 10 11

(*) Certain mobile telephone operators do not allow access to 00 800 numbers or these calls may be billed.

A great deal of additional information on the European Union is available on the Internet. It can be accessed through the Europa server <http://europa.eu/>

JRC 57362

EUR 24147 EN
ISBN 978-92-79-15358-7
ISSN 1018-5593
doi:10.2788/81837

Luxembourg: Publications Office of the European Union

© European Union, 2010

Reproduction is authorised provided the source is acknowledged

Printed in Italy

TABLE OF CONTENTS

I.	INTRODUCTION.....	1
II.	EMPLOYABILITY IN THE CONTEXT OF CURRENT AND FUTURE CHALLENGES	2
III.	AN EMPLOYABILITY CONCEPT AND FRAMEWORK	6
IV.	ANALYSIS	10
IV.1	Preparation for employment	11
IV.2	Transition from education to work.....	18
IV.3	Staying in employment and progressing in career	23
V.	TYPE AND SCOPE OF THE BENCHMARK: METHODOLOGICAL CONSIDERATIONS	26
V.1	Benchmark type.....	26
V.2	Benchmark scope.....	27
	REFERENCES.....	29
	ANNEX 1 – SUMMARY TABLE OF POSSIBLE INDICATORS.....	32
	ANNEX 2 – NATIONAL AND INTERNATIONAL DATA SOURCES	34
	ANNEX 3 – STATISTICAL DATA	39

LIST OF FIGURES

Figure 1:	Changes in population and workforce size between 2010 and 2020.....	3
Figure 2:	Total and youth unemployment rates (%) 1st quarter 2009.....	5
Figure 3:	Total and youth unemployment rates (%) 2000-2009.....	5
Figure 4:	Changes in employment by level of education (in millions).....	6
Figure 5:	Key stages in employment.....	8
Figure 6:	Factors influencing labour market outcomes.....	9
Figure 7:	A framework for the analysis of the contribution of E&T.....	13
Figure 8:	Changing occupational structure (EU-27+).....	15
Figure 9:	Youth unemployment rates for Member States by gender, 2008.....	41
Figure 10:	Relative change in employment in the EU 2 nd quarter 2008 – 2 nd quarter 2009.....	44
Figure 11:	Unemployment rates in the EU according to educational attainment.....	45
Figure 12:	Incidence of long-term unemployment by education level (%).....	45
Figure 13:	Participation in formal & non-formal education of adults (25-64 years old).....	48

LIST OF TABLES

Table 1:	Common definitions of employability.....	6
Table 2:	Proposed objectives and indicators related with preparation for employment.....	14
Table 3:	Proposed objectives and indicators related with quantitative matching.....	20
Table 4:	Proposed objectives and indicators related with qualitative matching.....	21
Table 5:	Proposed objectives and indicators related with staying in employment.....	25
Table 6:	Educational attainment of the adult population aged 25-64.....	39
Table 7:	Share of low achievers in reading, mathematics and science.....	40
Table 8:	Number of persons in employment by highest level of education attained.....	41
Table 9:	Unemployment rates, by highest level of education attained.....	42
Table 10:	Unemployment rates, by highest level of education attained and age groups.....	42
Table 11:	Unemployment rates, by highest level of education attained and age groups.....	43
Table 12:	Activity rates, by highest level of education attained and age groups EU -27.....	44
Table 13:	Participation of older workers in lifelong learning.....	46
Table 14:	Participation in continuing vocational training and average hours spent on CVT....	46
Table 15:	Participation of adults in lifelong learning.....	47
Table 16:	Participation of adults in lifelong learning by age groups.....	47

OVERVIEW

1. The Council Conclusions on a Strategic Framework for European cooperation in Education and Training for the next decade ("ET 2020") of May 2009 stated that: **"Given the importance of enhancing employability through education and training in order to meet current and future labour market challenges, the Commission is invited to submit to the Council a proposal for a possible European benchmark in this area by the end of 2010."**
2. In view of this request, the Directorate-General for Education and Culture commissioned to the Centre for Research on Lifelong Learning (CRELL) the preparation of a discussion note on possible indicators for measuring the contribution of Education and Training systems (E&T) to employability and the potential for a benchmark in this field.
3. The following note analyses the importance of enhanced employability in relationship to current and future challenges (demographic, economic, etc.), proposes a working definition of employability, a framework for discussion and analyses the role of E&T systems at various stages of an individual's working life, suggesting possible related indicators. Furthermore, it discusses methodological issues related to the type and scope of the benchmark and provides a number of questions for reflection.
4. This note has been presented at the first meeting of the Commission Expert Group on Employability benchmarks on 3 March 2010 as a basis for discussion among educational experts from EU Member States. This is the first deliverable in a series of analyses related to the review of possible indicators in the field.

I. INTRODUCTION

5. According to the new Education and Training Strategy (ET 2020)¹, employability is one of the main goals of Education systems. All four strategic areas for the period 2010-2020 (lifelong learning, quality and efficiency of education, equity and social cohesion, creativity and innovation) are considered important for enhancing employability. Four out of the five benchmarks adopted by the Council to support the ET 2020 objectives are directly related to employability (*lifelong learning participation, low achievers in basic skills, tertiary level attainment and early leavers from education*).
6. The broader EU 2020 strategy² to be adopted by the European Council at the end of March 2010 is likely to have skills as a key element for Europe's economic and productivity growth. Ensuring that workers have the right skills to participate in the knowledge-based economy is deemed essential to respond to challenges such as global competition, demographic changes, sustainable development, etc.
7. Within the framework of the 2008 New Skills for New Jobs strategy³, the Council Conclusions emphasize the role of education and training for promoting employability⁴ and underline the importance of matching identified skills needs. The work of Cedefop on skills supply and demand is directly related to this initiative⁵.
8. The objective of this note is to discuss possible indicators to measure the contribution of Education and Training (E&T) to employability and the potential for a benchmark in this field. The note:

¹ Council conclusions of 12 May 2009 on a Strategic Framework for European Cooperation in Education and Training ('ET 2020') (2009/C 119/02)

² Europe 2020, A Strategy for Smart, Sustainable and Inclusive Growth. COM (2010) 2020 Final.

³ New Skills for New Jobs: Anticipating and Matching Labour Market and Skills Needs. COM (2008) 868.

⁴ Council Resolution of 15 November 2007 on the New Skills for New Jobs. (2007/C 290/01)

⁵ Cedefop (2010a, forthcoming). Skill Supply and Demand in Europe: Medium-term Forecast up to 2020.

- analyses the importance of enhanced employability in relationship to current and future challenges (demographic, economic, etc.) (Section II);
 - proposes a working definition of employability and a framework (Section III);
 - analyses the role of E&T systems at various stages of an individual's working life, suggests possible related indicators and proposes questions for discussion (Section IV);
 - discusses methodological issues related to the type and scope of the benchmark (Section V);
 - provides a list of questions for discussion and the end of each section.
9. The work on a benchmark on the contribution of E&T to employability should not be seen in isolation. Several other European policies target employability including Flexicurity⁶, the Social inclusion process and the Bologna⁷ and Copenhagen⁸ processes. Annex 2 includes an overview of national and international surveys which provide valuable information about the relationship between employment, education and skills.
10. Hence, the present note does not pretend to cover all possible aspects of the employability concept. In line with the Council Conclusions (ET 2020), it presents relevant dimensions of employability from an education and training perspective. It does not cover the role of labour market institutions, factors affecting demand and other barriers preventing workers from getting a job or from remaining in a job.

II. EMPLOYABILITY IN THE CONTEXT OF CURRENT AND FUTURE CHALLENGES

11. The ET 2020 states that an important objective of monitoring employability is meeting labour market “challenges” in “changing circumstances”. Such challenges can be described in a long-term (demographical change, global competition, migration, technological change) or in a short or medium-term perspective (e.g. the current economic crisis).

Demographic challenges

12. As underlined by the EU 2020 Strategy, the change in the demographic situation in the EU, resulting in lower proportion of young people in the overall population, is expected to lead to a substantially reduced potential growth by 2020. A 2010 report of the Expert Group on New Skills for New Jobs⁹ points out that the only growth of the labour force is expected to be amongst those aged over 50.

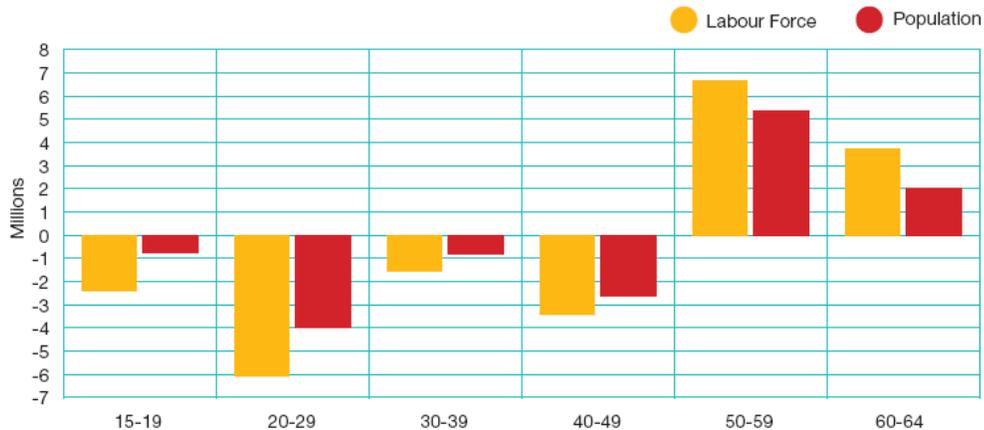
⁶ Towards Common Principles for Flexicurity: More and better jobs through flexibility and security. COM (2007) 359 Final.

⁷ http://ec.europa.eu/education/higher-education/doc1290_en.htm

⁸ http://ec.europa.eu/education/vocational-education/doc1143_en.htm

⁹ Cedefop (2010b) New Skills for New Jobs. A report by the Expert Group on New Skills for New Jobs prepared for the European Commission. January 2010.

Figure 1: Changes in population and workforce size between 2010 and 2020 by age category (EU 27 + Norway and Switzerland)



Source: *New Skills for New Jobs: Action Now (2010)*.

13. In fact, while the working age population (15-64) is expected to decline between 2008 and 2020 by only 0.2% in the EU27, the age distribution of the population will change significantly: the percentage of younger people (15-29) will fall from 28.2% in 2008 to 25.4% in 2020, while that of older people (50-64) will increase from 28.1% to 32.0%¹⁰. Figure 1 shows that the biggest increase among age groups will be seen in the 50-59 age cohort (+ nearly 6.5 million).
14. These changes in the structure of the population are significant, particularly given the short period considered. They have two important implications. On the one hand, it becomes essential to ensure that young people successfully and timely integrate into the labour market. E&T systems are an important factor in making this transition successful. On the other hand, E&T systems should ensure continuous re-training and learning opportunities for those already in the labour market to enhance their adaptability to the changing economic circumstances and maintain their employability.

Migration

15. As recognised in "Employment in Europe 2008" (European Commission, 2008c), third-country migrants make a significant contribution to labour input in the EU, accounting in 2007 for 6.7% of the labour force on average, compared with their share of 6% in the total adult population¹¹. The activity rate of migrants is slightly higher than the EU-born population rate (71% to 69%), but they suffer higher unemployment rates (10.9% vs 6.6%). On average, most third-country migrants to the EU (around 80%) tend to be low- or medium-skilled, while only 20% is high-skilled. A central issue for integration is that of the transferability of skills and qualifications acquired in the country of origin to the host country. Qualifications and work experience earned in countries of origin are not easily recognized by many employers, highlighting a need to establish common standards for the recognition of qualifications held by immigrants.
16. A related issue is the participation of children with migrant background in E&T. Data from the OECD Programme for International Student Assessment (PISA) (OECD, 2007a) show

¹⁰ Employment rate targets for 2020.

¹¹ Annual net inflows are projected to fall from about 1,680,000 people in 2008 to 1,253,000 by 2020, according to Eurostat EUROPOP2008 (see European Commission 2008b "2009 Ageing Report: underlying assumptions and projection methodologies").

that at least 10% of the school population at age 15 within the EU 15 countries was either born abroad or has both parents born in another country; the figure approaches 15% at the fourth grade of primary school. The Council Conclusions on the Education of Children with a Migrant Background¹² highlights that “there is clear and consistent evidence from both national indicators and international studies such as PISA that the educational attainment of most migrant pupils tends to be significantly lower than that of their peers. This results in a greater incidence among such pupils of early school-leaving, lower levels of qualification and smaller numbers in higher education”. All these elements may have a negative impact on the employability of migrants or of their offspring.

Global competition

17. The leitmotif of the original Lisbon strategy was making Europe the world's most "competitive knowledge based economy." This remains a must if the EU is to enhance its standard of living and sustain its unique social model in the face of ever fiercer global competition. In this context, the working population needs to be equipped with the right mix of knowledge and skills to meet the demands for an increased labour market participation, enhanced productivity and competitiveness.

Technological challenges

18. The ever increasing importance of innovation and technological advancement puts a strong pressure on the skills supplied by E&T systems. Studies on skill-biased technological change underline that increasing complexity of work leads to accelerating obsolescence of existing skills (van der Velden et al, 2008).

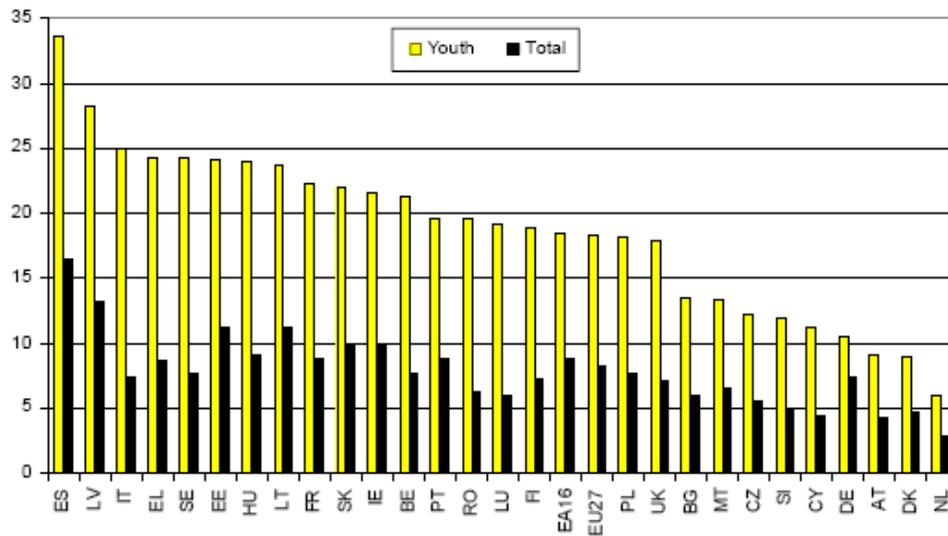
Economic crisis

19. Short-term challenges such as the recent economic crisis shed light on the excessive vulnerability of certain groups in the labour market. Unemployment rates have risen sharply across EU countries due to the crisis. An analysis by Eurostat on unemployment data shows that youth unemployment has increased at an even faster pace - by 3.7 percentage points between the first quarter of 2008 and the first quarter of 2009 (see Figure 2 and Figure 3 below), leading to a rate of 18.3 % in the first quarter of 2009 and up to 21.2% in November 2009. Country differences are significant – the youth unemployment rate ranges from 7.5 % in the Netherlands to 43.8% in Spain for the fourth quarter of 2009¹³.

¹² European Union (2009b). Adopted 26th November 2009 (2009/C 301/07).

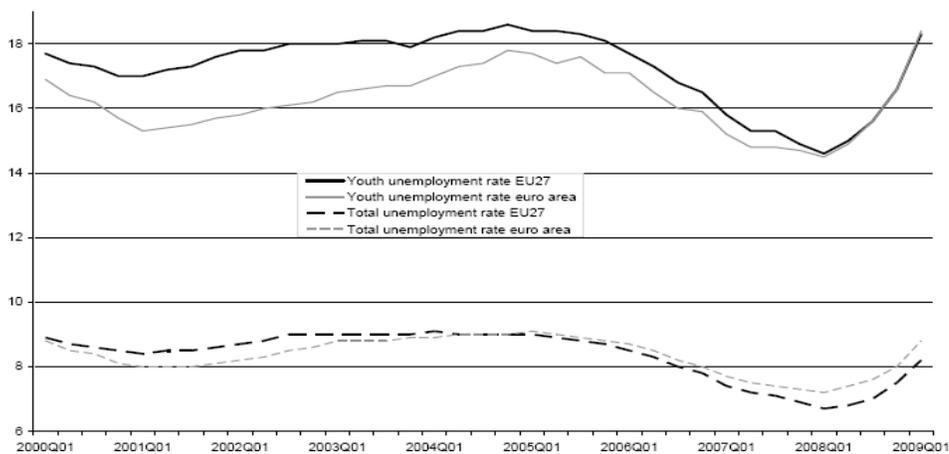
¹³ Eurostat News Release. “Euro area unemployment rate up to 10%.” 5/2010. 8 January 2010. See also Figure 9 in Annex 3.

Figure 2: Total and youth unemployment rates (%) 1st quarter 2009



Source: Eurostat, News Release 109/2009

Figure 3: Total and youth unemployment rates (%) 2000-2009 (by quarter, seasonally adjusted)



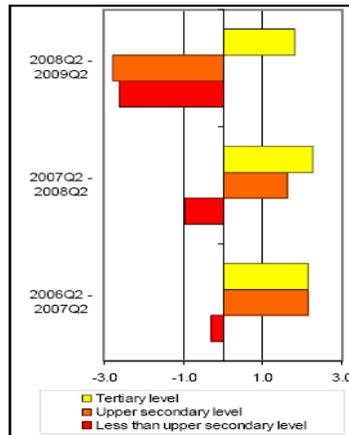
Source: Eurostat, News Release 109/2009

20. Furthermore, a recent Eurostat Statistics in Focus report on “The impact of the crisis on employment”¹⁴ underlines that employees have been affected differently depending on their level of education. A fall in employment rate was observed among persons with low and medium levels of education, while employment among highly educated persons continued to

¹⁴ Eurostat (2009b), “The impact of the crisis on employment.” Statistics in Focus 79/2009.

increase against the prevailing trend.¹⁵ The largest decline in employment in 2008 occurred in the manufacturing and construction sectors while services (including financial) still registered slight positive growth. By gender, low-skilled males were the ones experiencing the hardest job losses.¹⁶

Figure 4: Changes in employment by level of education (in millions)



Source: Eurostat (2009b)

III. AN EMPLOYABILITY CONCEPT AND FRAMEWORK

21. Employability is a complex and multi-faceted concept. The difficulty in applying a straight-forward definition has been recognized by various studies (see among others Gazier, 1999; McQuaid and Lindsay, 2005). Table 1 gives an overview of some common definitions of employability.

Table 1: Common definitions of employability

De Grip et al. (2004)	<i>"The capacity and the willingness to be and to remain attractive for the labour market, by anticipating changes in tasks and work environment and reacting on them."</i>
Harvey, L. (1999)	<i>"Employability of a graduate is the propensity of the graduate to exhibit attributes that employers anticipate will be necessary for the future effective functioning of their organization."</i>
Hillage, J. and Pollard, E. (1998)	<i>"In simple terms, employability is about being capable of getting and keeping fulfilling work. More comprehensively employability is the capability to move self-sufficiently within the labour market to realize potential through sustainable employment. For the individual, employability depends on the knowledge, skills and attitudes they possess, the way they use those assets and present them to employers and the context (e.g personal circumstances and labour market environment) within which they seek work."</i>
European Commission (2008d)	<i>"Employability refers to a person's capability of gaining employment."</i>

¹⁵ Potentially implying that crowding out/bumping down takes place.

¹⁶ For further analysis, see the section on Labour market outcomes in the 2009 Report on the "Progress towards the Lisbon objectives in education and training - Indicators and benchmarks" (European Commission, 2009). See also Tables 8-12 and Figures 10-12 in Annex 3.

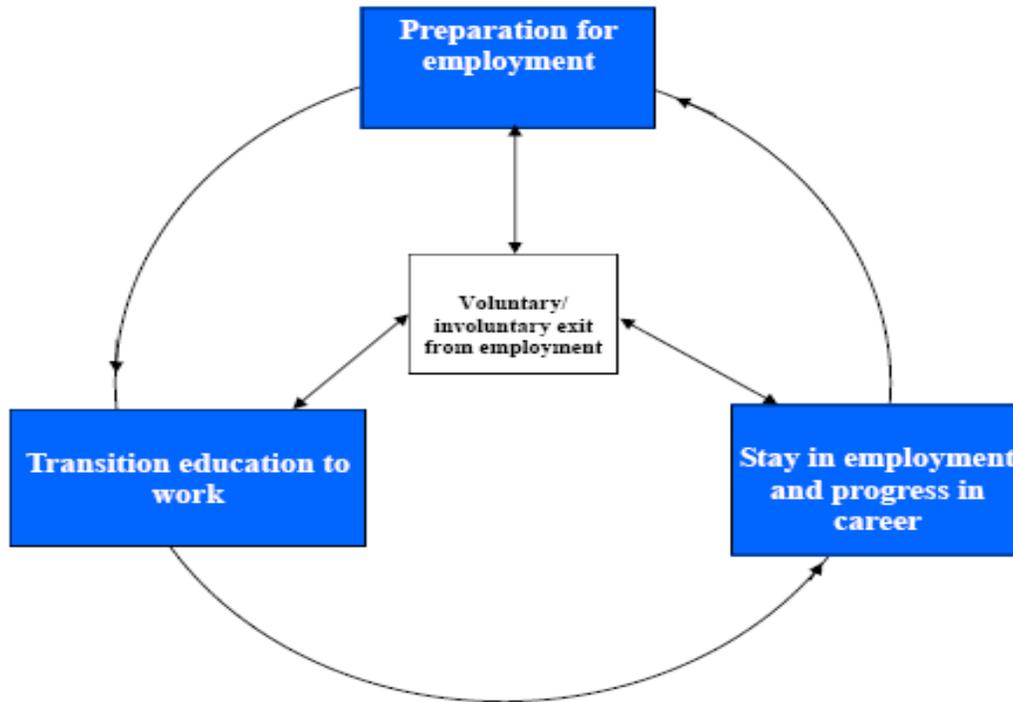
Bologna Follow-up group ¹⁷	<i>"The ability to gain initial employment, to maintain employment, and to be able to move around within the labour market."</i>
Cedefop (2008)	<i>"Employability is the combination of factors which enable individuals to progress towards or get into employment, to stay in employment and to progress during their career." Comment: From the education and training perspective, factors include learning outcomes (knowledge, skills and competences) and their relevance to the labour market, learning incentives and learning opportunities.</i>

22. McQuaid and Lindsay (2005) highlight the existence of two alternative perspectives in the employability debate: one focuses only on the individual's characteristics and skills, referring to the individual potential to obtain a job, while the other perspective takes into account also external factors (e.g. labour market institutions, socio-economic status) that influence a person getting into a job, moving in between jobs or improving their job. De Grip et al (2004) call these factors 'effectuation conditions', i.e. the conditions under which workers can effectuate their employability.
23. There are a number of additional aspects considered in the literature such as the time lag between leaving education and employment, the degree of skills match between one's educational background and his/her occupation as well as the type of contractual arrangement (full-time vs. part-time; permanent vs. temporary).
24. Any definition based only upon individual characteristics and skills would disregard the potential influence of the institutional settings¹⁸ that support personally or collectively the transition from school to work, and help the employed workers to stay in their job and the non-employed workers to find a job.
25. As our interest is in identifying ways in which policies impact and can further enhance employability, we adopt the definition given by Cedefop (2008) as our reference: "Employability is the combination of factors which enable individuals to progress towards or get into employment, to stay in employment and to progress during their career."
26. According to this definition, a successful realization of individuals in each stage of their working life (as shown in Figure 5) would require the presence of the right combination of employability factors. From the education and training perspective, such factors include learning outcomes (knowledge, skills and attitudes) and their relevance to the labour market, as well as learning incentives and learning opportunities. Jointly with these educational determinants, many other personal, economic and institutional features influence labour market outcomes throughout the working life of an individual (as shown in Figure 6).

¹⁷ <http://www.ond.vlaanderen.be/hogeronderwijs/bologna/actionlines/employability.htm>

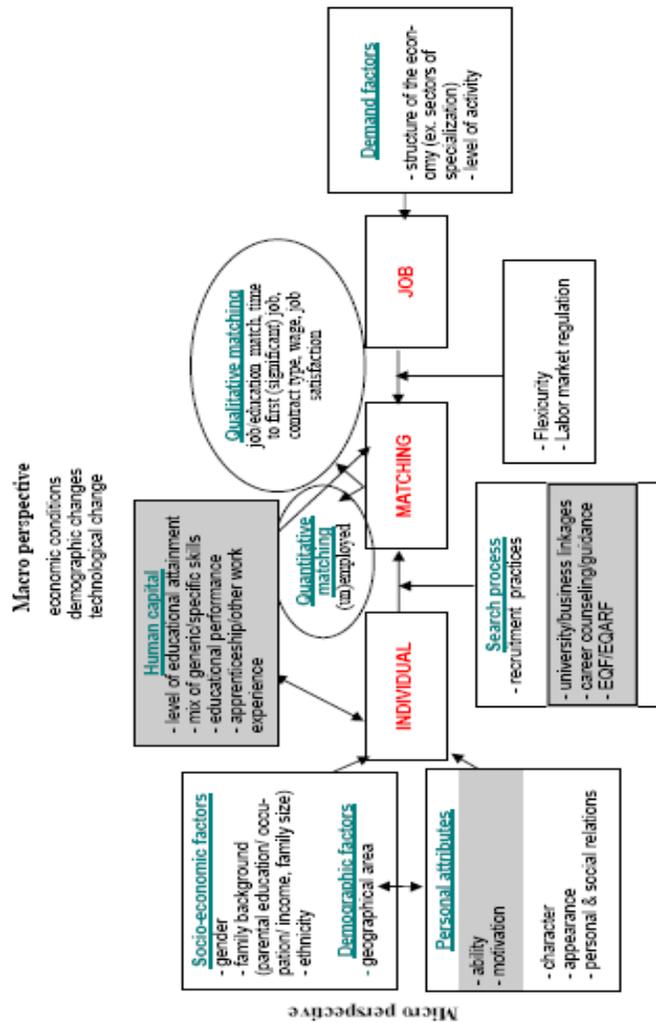
¹⁸ Two examples are public and private employment and education services and subsidized programmes.

Figure 5: Key stages in employment



27. It is important to note that there is not necessarily a linear transition through the different stages of employment. Going back to education and preparing for employment can occur at different stages of one's life and transition from education to work can mark both the first transition as well as subsequent ones. Thus, a more appropriate dynamic view on employment would include possible ways back and forth from the different stages, taking into account the possibility of unemployment/inactivity (Figure 5).
28. Figure 6 zooms into the factors that influence the individual transition to a job, taking into account both the micro and macro level perspectives. It highlights the fact that E&T systems are relevant in the creation of human capital, measured through learning outcomes in terms of formal qualification as well as actual skills acquisition. E&T systems also facilitate the job search process by providing concrete guidance and counselling and making qualification systems more understandable to employers across Europe.

Figure 6: Factors influencing labour market outcomes (adapted from Van der Velden et al, 2008)



29. The definition of a benchmark requires a consensus on a policy objective it would monitor and address. The frameworks presented above attempt to frame the employability concept into a context which can allow identifying stages/elements/groups which can become the focus of a potential policy objective.
30. In section IV, we describe in detail each stage presented in Figure 5 and use both frameworks (Figure 5 and Figure 6) to discuss relevant dimensions of the contribution of E&T systems in order to offer insight into critical issues and possible indicators to monitor them.

IV. ANALYSIS

31. What we pursue determines what we measure and, conversely, what we measure has an impact of the way policies are designed and implemented¹⁹. Therefore, in order to choose a benchmark, it is important to identify the specific challenge(s) to be addressed or the relevant policy goal(s).
32. The existing five benchmarks for monitoring EU Education and Training cover a number of specific policy objectives related to the contribution of E&T to employability.

Five EU benchmarks for 2020
<ul style="list-style-type: none">▪ At least 95% of children between 4 years old and the age for starting compulsory primary education should participate in early childhood education▪ The share of early leavers from education and training should be less than 10%▪ The share of low-achieving 15-years olds in reading, mathematics and science should be less than 15%.▪ The share of 30-34 year olds with tertiary educational attainment should be at least 40%▪ An average of at least 15 % of adults should participate in lifelong learning

33. In this section, we analyse the role of E&T across the stages presented in Figure 5. This approach has been adopted because the primary contribution of E&T is of a different nature at each stage even though overlaps are observed.
34. The frameworks presented in the preceding section are used to a) identify the educational factors that are influential at each stage and b) assess the potential indicators that are more suitable to measure the provision of those factors.
35. By doing this, we aim at facilitating the choice of one benchmark, possibly supported by a set of indicators or a scoreboard approach - whatever is considered more adequate to monitor performance in one, some, or all dimensions of the contribution of E&T to employability (methodological questions concerning the type of benchmark are discussed in Section V).
36. Information on the quality and availability of the data is given in each subsection for all indicators and in Annex 1 (summary table). Annex 3 includes tables with related statistics.

¹⁹ As recognised in the Report by the Commission on the Measurement of Economic Performance and Social Progress by J. Stiglitz, A. Sen and J.P. Fitoussi (<http://www.stiglitz-sen-fitoussi.fr>).

Questions for discussion regarding the contribution of E&T at all stages

- What *specific* contribution(s) should E&T make in order to increase the employability of individuals?
- Do the current five E&T benchmarks already cover the most relevant issues concerning the contribution of E&T to employability? What type of evidence should this benchmark provide that is not already conveyed by those benchmarks?
- Which of the following contributions of the E&T systems is (the most) important for enhancing the employability of the working population and should therefore be benchmarked:
 - effective and efficient provision of knowledge and skills?
 - facilitate the transition from education to work?
 - supply of adequate continuing education?
 - all of these?
 - others? Which ones?
- Should the focus be on the employability challenges faced by individuals in education? New entrants in the labour market? Those already in employment or searching a job? Or all of them? What would be an adequate age range for this benchmark?

IV.1 Preparation for employment

Description

37. This phase covers the whole period in which individuals stay in formal education and training *before* they access the labor market in search for a job in their main occupation. At this stage, E&T systems are seen as the main responsible for the skills attainment of the potential workforce²⁰.
38. The discussion in this section addresses the initial process of acquiring the essential knowledge and competences required for a given occupation. Typically, individuals go through the main part of that process in their youth while at formal E&T. However, many achieve that learning outcomes through informal education. Similarly, participation to E&T can occur at any time during the lifespan of individuals and as many times as desired or deemed necessary (Figure 5). Access to education of adults and the issues related with upgrading or further development of knowledge and skills are covered in depth in section IV.3.

²⁰ Research has shown that the socio-economic status and economic systems (e.g. family background) greatly affect learning outcomes. The discussion of this issue is out of the scope of the present note.

Important educational factors

39. Figure 7 provides an overview of the factors relating to the contribution of E&T systems at this stage²¹. This framework allows us to classify a variety of existing indicators into input, process, output and outcome indicators.
40. The category input is reserved to financial and other resources devoted to the provision and maintenance of learning opportunities. The decisions concerning the provision of E&T should build on an understanding of the external factors affecting the demand for such learning opportunities (e.g. skills forecasts), the identification of policy challenges and the formulation of a coherent policy response.
41. The category of *process* corresponds to the actors and setting of the learning environment, e.g. issues of quality, equity, mobility and responsiveness of E&T systems to changing demands.
42. *Output* indicators measure the concrete consequences of the measures taken and resources used. In practice, the later category refers to the 'output of educational institutions' in terms of graduation rates or attainment levels. However, E&T systems also provide credentials that are valued by employers. Therefore compatibility of recognition is also classified as an *output*.
43. The category *outcome* is viewed strictly in terms of the individual key competences acquired through learning such as knowledge, skills and attitudes that are valued by the labour market²². In some cases, E&T systems provide also the opportunity of gaining some professional experience through the provision of traineeships. Two main issues are relevant for policy making, namely 1) *which* skills should individuals acquire to be employable and 2) *how* E&T systems can best provide these skills.
44. Much research and policy attention has been devoted to the quantity, the quality and the mix of skills to be supplied. In particular, it is considered essential that E&T shall facilitate the development of a combination of (field) *specific* knowledge and skills and *transversal* or generic skills^{23, 24}. The Education Council has highlighted the importance of key competences for lifelong learning, which comprise learning to learn, digital competence, sense of initiative and entrepreneurship, cultural awareness and expression, communication in mother tongue and in a foreign language, mathematical competences, basic competences in science and technology and social and civic competences²⁵.
45. Whilst recognizing that education and training has much broader aims than employability (personal fulfillment, active citizenship, social cohesion etc.) and that these aims may be difficult to disentangle from employability, the following paragraphs discuss the E&T policy challenges related with the preparation of individuals for employment. The policy responses to those challenges would act upon or impact on the educational factors described above. We present several indicators that could be envisaged in order to measure the effectiveness of E&T systems in addressing those challenges. The actual indicators shown in Figure 7 are

²¹ Based on Desjardins et al. (2004) "Benchmarking Education and Training Systems in Europe: an international comparative study".

²² The framework developed for this section is restricted to the contribution of education to the acquisition of essential skills (which is therefore considered the outcome). The following sections complement this picture. The overall outcome of the process of preparation, transition and lifelong learning is achieving and staying in employment, which is commonly described as (one) labour market "outcome". Therefore, labour market outcomes have purposely not been included at this stage (with only learning- related outcomes).

²³ The Gallup 2007 Flash Eurobarometer on Young Europeans show that the most important quality they retain for finding a job is communication and teamwork skills. Entrepreneurial skills and good appearance are also mentioned.

²⁴ For a comprehensive description of generic skills, see NCVET, 2003.

²⁵ Recommendation of the European Parliament and of the Council of 18 December 2006 on Key Competences for Lifelong Learning (2006/962/EC)

some of the core indicators adopted by the Council in 2007²⁶,²⁷ as well as other indicators discussed in this section.

Figure 7: A framework for the analysis of the contribution of E&T to preparation for employment

Contribution of E&T to Preparation for employment							
	Inputs	Process	Outputs		Learning Outcomes		
			General	Qualification	Generic Skills	Field-specific / technical skills	Experience
Indicators	Investment in Education	Professional development of teachers and trainers	Early leavers from E&T	Comparable recognition (EQF, EQARF, etc)	MSR proficiency	Graduation rates in MST (proxy for field-specific skills)	Apprenticeships
	Skills forecast	Cross-national mobility of students	Educational attainment		Language competences	Graduation rates by field (proxy for field-specific skills)	
	Demographic forecasts	Use of ICT	Years of schooling		ICT skills		
	Strategic policy (e.g. E&T 2020)	Responsiveness of the system to changing demands			Learning to learn skills		
		Measures of the quality of education			Civic skills		
		Measures of equity in access			Adult skills (*)		

Colour code: blue = from the 16 core indicators ; red = from the five EU benchmarks; black: other examples
 Adult skills encompass many of the skills presented in the table
 (*) literacy & numeracy, ICT, Problem-solving, job-related generic skills, learning to learn, civic competences, entrepreneurship

What are possible policy objectives for this stage?

46. Policy at this stage aims at improving the effectiveness and the efficiency of E&T as a provider of skills valued by employers. In principle, the policy target group is the school-age cohort or young school-leavers or graduates; however, as shown in Figure 5, older workers are also concerned. The time horizon for policy goals is medium to long term. The main actors are those responsible for E&T systems.
47. A benchmark in this area could either address the overall policy objective of meeting future demand for skills or address additional specific challenges.

²⁶ Council conclusions of 25 May 2007 on a Coherent Framework of Indicators and Benchmarks for Monitoring Progress towards the Lisbon Objectives in Education and Training (2007/C 311/10).

²⁷ The indicators on special needs education and pre-school education have not been included as they are not considered as directly relevant for the purposes of this note.

Overall policy objectives:

- 1) Meet the future demand for skills.
- 2) Achieve high levels of competences among the population.

Possible specific policy objectives:

- High proportions of young people completing a full upper secondary education with recognised qualification for work, tertiary study or both;
- High proportion of young adults completing tertiary education;
- Low share of early leavers from education and training (less than 10%);
- Low share of low-achievers in reading, mathematics and science;
- Enhance the provision of job-related experience.

Indicators**Table 2: Proposed objectives and indicators related with preparation for employment**

<i>Possible policy objectives</i>	<i>Indicators</i>	<i>Source</i>
1 Meet the future demand for skills	A Comparison of the forecasted skills demand vs. actual and forecasted skills supply (by ISCED level)	Cedefop and Eurostat
2 Achieve high levels of competences among the population	C Percentage of the population (20-24, 25-29, etc.) having attained at least upper secondary education (ISCED level 3 long)	Eurostat
	D Share of 30-34 year-olds with tertiary educational attainment	Eurostat
	E Percentage of graduates (18-24, 20-24, 25-29, etc.) by ISCED level	Eurostat
	F Percentage of the population aged 18-24 with at most lower secondary education (ISCED level or 3c short) and not in further E&T	Eurostat
	G Percentage of low achievers in reading, science and math	OECD PISA
	H Percentage of students having finished their studies and who have benefited from apprenticeship (or traineeship)	EU SILC

Note: Indicators highlighted in blue are part of the five ET benchmarks for 2020.

Policy Objective 1: Meet the future demand for skills

48. The Cedefop initiative “New Skills for New Jobs” aims at mapping current and future demand for occupations and the corresponding skill requirement, while recognizing that the links between the two are complex²⁸. Cedefop has forecasted²⁹ an increase in the demand for skills, as the share of jobs requiring high-level qualifications will rise to 35% and the share of jobs for which low qualifications are required will fall to 15%. Overall, this demand would be

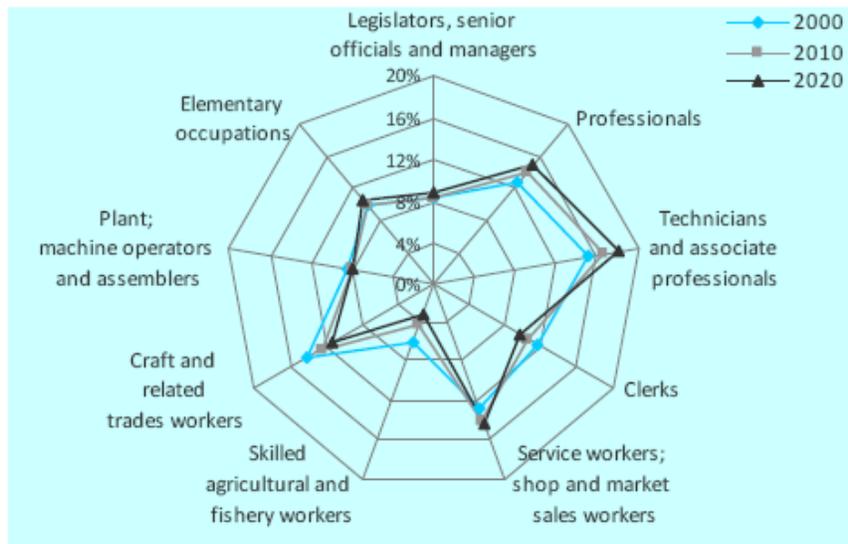
²⁸ Indeed, every job requires a different mix of knowledge, skills and abilities, acquired through different learning channels.

²⁹ Cedefop (2010a, forthcoming). “Skill supply and demand in Europe: medium-term forecast up to 2020”. Luxembourg: Publications Office. See also Table 6 in Annex 3.

satisfied by the supply of skills as the proportion of people with high level of qualifications is expected to rise (from 28% of the labor force 15+ in 2010 to 35% in 2020) and there will be a contraction of the labor force with low-level qualifications (from 22% to 15%).

49. The trend versus a higher demand for qualifications is due to future changes in the occupational structure, with more new jobs being open for professionals and technicians (see Figure 8). Most new jobs by 2020 are expected to be in knowledge and skill-intensive occupations (around 8.5 millions). On the other hand, the demand for elementary occupations is also expected to increase.

Figure 8: Changing occupational structure (EU-27+)



Source: "New Skills for New Jobs: Action Now"(2010)

Indicator on overall skill (mis)match

- Comparison of the forecasted skills demand vs. actual and forecasted skills supply (by ISCED level, at country or EU level).

Source: Cedefop forecast of skills demand and skills supply and Eurostat data on current skill supply

50. This indicator could give information on the desirable skills mix of the population. On the other hand, a depiction of the skills mix at broad level (low, medium, high) would be of little operational significance from policy perspective, and would need to be complemented with detailed information (for example, company surveys).
51. Countries have different labour demands and supply characteristics, which present a challenge for measuring employability in a cross-country perspective. Instead of choosing a benchmark on the global (mis)match between supply and demand of skills, wouldn't it be more appropriate to design a benchmark that measures the capacity of educational systems to respond in time to specific new skills demands?

Policy Objective 2: Achieve high levels of competences among the population

Educational outputs

Indicators on educational attainment level

- Percentage of the population (20-24, 25-29, etc.) having attained at least upper secondary education (ISCED level 3 long) - *currently monitoring indicator M2 (Guideline 23) of the Employment Guidelines 2009*³⁰.
- Share of 30-34 years old with tertiary educational attainment – *currently one of the 5 E&T 2020 benchmarks*.
- Percentage of graduates (18-24, 20-24, 25-29, etc.) by ISCED level.

Source all indicators above: Eurostat

52. Educational attainment is the most used indicator for skills supply and is commonly used as a proxy for qualification levels. Detailed analysis usually involves gender and age disaggregation. A specific indicator on youth educational attainment could be chosen as benchmark (as the corresponding indicator for the total population also reflects the cohort effect).
53. Such an indicator is readily available but it gives a very raw and over-generalized idea of skills supply.

Indicator on early leavers from education and training

- Percentage of the population aged 18-24 with at most lower secondary education (ISCED level 2 or 3c short) and not in further education and training – *currently monitoring indicator M3 (Guideline 23) of the Employment Guidelines 2009, part of the 16 core indicators in Education and Training and one of 5 benchmarks for monitoring EU Education and Training systems*.

Source: Eurostat

Learning outcomes

Indicator on Mathematics, Science and Reading literacy

- Percentage of low achievers in reading, science and math – *currently one of the five benchmarks ET 2010 and ET 2020*³¹.

Source: OECD PISA

54. Learning outcomes that are highly contextualized (sector or work specific skills) are not well measured by general competences surveys as PISA. There is an increasing need to conduct surveys which focus on the assessment of vocational and/or professional skills and competences.

Indicator on apprenticeships and traineeships

- Percentage of students having finished their studies, who have benefited from apprenticeship or traineeship

³⁰ Employment Guidelines 2009, see European Commission, 2008e.

³¹ See Table 7 in Annex 3.

Source: Eurostat Survey on Income and Living Conditions (EU-SILC, only micro-data on apprenticeships)

55. Choosing this indicator implies promoting an increasing role of E&T systems as providers of work experience during schooling. Some EU educational systems extensively facilitate acquisition of experience during formal training (those with dual systems such as Austria, Denmark, Germany and Switzerland).
56. Data on this indicator is not readily available, although it could be proxied by participation of students to programmes, classified by their orientation (professional or vocational versus general programmes). The Task Force on Educational Variables in Household Surveys set up by Eurostat covers the improvement of the LFS variables on education and training. The Task Force has discussed the possible inclusion of a new variable to identify apprenticeships and traineeships (in relation to their labour status, i.e. for both employed and not employed) and provide information on the characteristics of the educational programme.

Further considerations

57. Research has shown that schooling can shape personal characteristics such as values, attitudes and beliefs which directly or indirectly influence employability. The most important impediment to benchmarking these contributions is the difficulty of measuring individual performance in terms of non-cognitive skills.
58. It could be considered relevant to attract special policy attention to disadvantaged groups (migrants, special needs groups, etc). In order to benchmark the performance of E&T systems in preparing individuals for work (in the terms discussed in this section) it could be considered using the same indicators mentioned above applied to those special groups only³².
59. Alternatively, it could be argued that some educational tracks are preferred by socially disadvantaged groups or, de facto, provide them with better employability outcomes (e.g. Vocational Education and Training (VET), as argued by Psacharopoulos and Schlotter, 2010). In that case, it would be appropriate to envisage a (set of) benchmark(s) measuring the performance (as supplier of relevant skills) of *that* educational sub-system only.

Questions for discussion regarding the preparation for employment

- Should the benchmark address the degree by which labour market demands in terms of occupations are met? in terms of skills? or in terms of qualifications?
- Which E&T factors should be monitored: educational inputs, educational outputs, learning outcomes or labour market outcomes?
- Should the performance of any specific subsystem be the object of particular attention in the context of this benchmark? Which one (VET, formal secondary education, higher education...)? Should the contribution of informal education be also considered?
- Regarding the effective and efficient provision of knowledge and skills, are there any additional essential issues that have not been covered by this section?

³² As does the OECD, which currently measures for example the “Proportion of 20-24 year-olds who are not in education and have not attained upper secondary education by migrant status”, “Proportion of 25-29 year-olds who either have a tertiary education qualification or are currently in tertiary education programme by migrant status”, “ Proportion of employed 25-29 year olds non-students with a tertiary education, working as technicians and associate professional (ISCO 3) or as professionals (ISCO 2) by migrant status.”

IV.2 Transition from education to work

Description

60. Education-to-work transition is defined as the transition from the education system to the employment system through the attainment of permanent employment. (e.g. OECD, 2000). There is a debate on what is the best way to define work understood as a first significant job. Possible options are part-time/full-time work, temporary or fixed-term contract. Research literature refers to permanent employment as the most accurate proxy for significant job, recognizing it is not an optimal solution.
61. Conceptualizing the 'outcomes' of the transition process is a challenging task. Countries vary in the structure and pace of their transition processes. Consequently, transition outcomes may appear quite different when young adults from different countries are compared one year after leaving school, but may become quite similar five years after leaving school (van der Velden et al., 2008).
62. It is important to underline that transition from education to work can also occur at later stages in life due to returns to education for a change of career paths, higher degree attainment, etc. The challenges could be very similar to the ones faced by young adults, sometimes alleviated, however, by the fact that older people most probably already have work experience and better knowledge of the job market, factors which should facilitate the transition process.
63. As shown in Figure 6, the transition process depends upon a variety of micro and macro level factors (ex. gender, socio-economic background, macroeconomic conditions, etc.). Education is an important factor and research illustrates that higher level of education increases employment possibilities.
64. At the individual's level, research has shown that:
 - a transition from education to first job associated with a long period of unemployment could have significant implications for future labour market outcomes. It can adversely affect future earnings and work experience;
 - entry to unskilled occupations as a first job (over-education or over-skilling) is likely to reduce lifetime earnings and increase the risk of experiencing periodic spells of unemployment (e.g. Arulampalam et al., 2000). The 'scarring' theory of unemployment suggests that possible reasons are depreciation of human capital through atrophy (i.e. not using skills leads to losing them), or the fact that employers use an individual's previous labour market experience as a screening mechanism.
65. Frequent problems at this stage are high unemployment, excessive job turnover and weak links between educational institutions and the labour market. The impact of the economic crisis on young people, as mentioned in Section II, illustrates this vulnerability of youth in the transition period.

Important educational factors

66. Human capital theory, the most widely adopted framework for investigating school-to-work transitions, shows that one of the main mechanisms through which education has an impact on labour market outcomes is by increasing the productive skills of students (Becker, 1964)³³. The level of educational attainment and quality of education discussed in the previous section are essential in facilitating transition to the labour market.

³³ As evident from Figure 6, there are other important factors, ranging from macro-factors, such as general economic conditions, demographic changes or technology developments, to more micro-factors – individual socio-economic background, personal characteristics, any previous work experience. Furthermore, contextual factors such as career guidance and counseling, or labour market regulation play an important role.

67. From a macro-perspective, the OECD Thematic Review on the Transition from Initial Education to Working Life (OECD, 2000) underlines three key ingredients for successful transition which are related to E&T - well organized pathways that connect initial education with work and further activity, widespread opportunities to combine workplace experience with education, and good information and guidance.
68. The presence of apprenticeships in the curriculum or work experience while studying leads to the acquisition of job and/or sector-specific skills and higher probability of entering into skilled occupations. Some research has concentrated on the effects of vocational training and apprenticeship on the transition to first job and has shown evidence of faster transition to work for students which have undertaken apprenticeships (e.g. Bonnal et al, 2000).
69. E&T systems which develop good interaction with enterprises and have effective career counselling and job finding assistance facilitate greatly the transition process. They ensure more equity in the access to the labour market by compensating for some socio-economic factors which impact negatively on the transition process for certain groups.

What are possible policy objectives for this stage?

Overall policy objective:

Ensure smooth and effective transition from education to work.

Possible specific policy objectives³⁴:

Quantitative matching

- 1) Low proportion of young people being unemployed;
- 2) Low proportion of young people not in education and not in work (NEETs);
- 3) Low proportion of young people remaining unemployed for X months/lengthy periods after leaving formal education;
- 4) High proportion of young adults who have left education having a job;

Qualitative matching

- 5) Low proportion of young people having work that does not match their educational qualifications and/or in which they have insufficient opportunities to utilise their competences;
- 6) Low time interval between education and first significant (permanent) job.

Indicators

70. Indicators of labour market outcomes can be used as proxies for the efficiency of the transition process and the effectiveness of the E&T system in imparting individuals with the right mix of skills and competences.
71. Such indicators could concentrate exclusively on the state of being employed but could also take into account other dimensions such as the skills match of one's occupation with one's educational background, the time interval of the school-to-work transition, or even potentially the wage.
72. Employability, in fact, is related not only to the state of being employed, but also to the quality of employment and the time interval for finding a proper employment. In this context we can distinguish between quantitative and qualitative indicators of labour market outcomes.

³⁴ A number of these possible policy objectives have been inspired by van der Velden and Wolbers (2008).

73. It is important to underline that such outcome indicators measure the interaction of education with the labour market. Hence, this interaction implies that a positive/ negative performance can not be attributed completely to either the quality and efficiency of E&T systems or to the underlying functioning of the labour market.
74. Factors such as the level of collaboration between E&T systems (universities, schools, etc.) and businesses, career counselling and guidance offered to graduates could facilitate the process of transiting from education to work. However, data on these aspects is not readily available. The role of employment services and labour market policies are as important but are out of the scope of this note and have only been mentioned in Figure 6.

Quantitative matching

Table 3: Proposed objectives and indicators related with quantitative matching

<i>Possible policy objectives</i>		<i>Indicators</i>	<i>Source</i>	
1	Low proportion of young people being unemployed;	A, B, C, D	A Ratio of active persons (by age group) wanting to work by corresponding working age population	LFS
2	Low proportion of young people not in education and not in work (NEETs);	E, F	B Unemployment rate (15-24, 20-24, 25-29), by ISCED level	LFS
3	Low proportion of young people remaining unemployed for X months/lengthy periods after leaving formal education	B, C, D	C Long-term unemployment rate (15-24, 20-24, 25-29), by ISCED level	LFS
4	High proportion of young adults who have left education having a job;	G, H	D Duration of unemployment spells for young people (15-24, 20-24, 25-29), by ISCED level	LFS, EU SILC
			E Percentage of the cohort population not in education and unemployed (15-24, 20-24, 25-29), by ISCED level	LFS
			F Frequency of periods in NEET	LFS
			G Employment rate (15-24, 20-24, 25-29), by ISCED level	LFS
			H Percentage of workers (20-24, 25-29) working involuntarily part-time	LFS

Indicator on labour reserve – Objective 1

- Proportion of active persons (by age groups) wanting to work as a proportion of the corresponding working age population - *currently indicator for analysis A7 (Guideline 19) of the Employment Guidelines 2009.*

Source: Eurostat LFS

Indicators on unemployment incidence and duration (young people) – Objectives 1& 3

- Unemployment rate (15-24/20-24/25-29), by ISCED level – *15-24 age cohort currently monitoring indicator M3 (Guideline 17) of the Employment Guidelines 2009 and M.1 (Guideline 18).*
 - Long-term unemployment rate (15-24/20-24/25-29), by ISCED level.
- Source for both indicators: Eurostat LFS
- Duration of unemployment spells for young people, (15-24/20-24/25-29), by ISCED level.

Source: Eurostat LFS and EU-SILC

75. Data for these indicators is readily available but it is highly sensitive to the age cohorts. It could have limited relevance due to the fact that a high number of young people is not in the labour force because still attending school, training or university.

Indicators on youth neither in employment nor in education and training (NEET) – Objective 2

- Percentage of the cohort population not in education and unemployed (by ISCED level, age brackets 15-19, 20-24, 25-29).
 - Frequency of periods in NEET.
- Source both: Eurostat LFS

76. The policy objective of such indicators will focus on addressing youth disengaged from both the labour market and E&T, arguably at a high risk of labour market and social exclusion. There are currently discussions regarding the inclusion of this indicator as an employment indicator under EU 2020.

Indicators on labour force participation of young people – Objective 4

- Employment rate (15-24/20-24/25-29), by ISCED level- 15-24 age cohort currently monitored through indicator M1 (Guideline 17) of the Employment Guidelines 2009.
 - Percentage of workers (20-24, 25-29) working involuntarily part-time.
- Source both indicators: Eurostat LFS

Qualitative matching

Table 4: Proposed objectives and indicators related with qualitative matching

<i>Possible policy objectives</i>		<i>Indicators</i>	<i>Source</i>
5	Low proportion of young people having work that does not match their educational qualifications and/or in which they have insufficient opportunities to utilise their competencies K, L, M	I Number of months before finding a job after leaving education by ISCED level, ISCO, for relevant age cohorts	LFS, EU SILC
6	Low time interval between education and first significant (permanent) job I, J, N	J Number of months before finding a permanent job by ISCED level for relevant age cohorts K Percentage of young people (by age cohort and ISCED level) employed at a relevant skill-level (ISCO) L Incidence of job mismatches (by ISCED level, ISCO level, type of contract and age cohort) M Proportion of young people who have an occupation relevant to their educational level X years after leaving education N Transition between non-employment and employment and within employment by type of contract (permanent, fixed-term, E&T (e.g., paid apprenticeship), self-employed) from year n to year n+1	LFS, EU SILC LFS LFS LFS EU-SILC 2007 add-on module, Eurostat LMP data

Indicators on time interval to (a significant) job after leaving education – Objective 6

- Number of months before finding a job after leaving education by ISCED level, type of education, type of job, for relevant age cohorts.

Source: Eurostat EU-SILC

- Number of months before finding a permanent job by level/type of education for relevant age cohorts

Source: Eurostat LFS

Indicators on education/job (mis)match – Objective 5

- Percentage of young people (20-24, 25-29, 25-34 age brackets) by level of educational attainment (ISCED) employed at a relevant skills level (ISCO³⁵).
- Incidence of job mismatches by level/type of education, field, type of contract and relevant age brackets.

Source both indicators: Eurostat LFS

Indicator on job (mis)match within a time interval after leaving education – Objective 5, 6

- Proportion of young people (25-29) who have an occupation relevant to their educational level X years after leaving education.

Source: Eurostat LFS

77. It is important to underline that, as Psacharopoulos and Schlotter (2010) point out, such an indicator could be normative. Graduates in humanities could find a job in another area. This is not a problem in itself as it is a sign of the fact that employers value their skills. The problem rises when employers do not use the skills produced by education and training.

Indicator on transition by type of contract

- Transition between non-employment and employment and within employment by type of contract (permanent, fixed-term, education and training (e.g. paid apprenticeship), self-employed) from year n to year n+1 – *currently monitored through indicator M1 (Guideline 21) of the Employment Guidelines 2009.*

Source: Eurostat EU SILC

Questions for discussion regarding the transition from education to work

- Do the suggested policy objectives address policy concerns as regards the transition phase? Are there any additional issues that are (more) relevant?
- Is a focus on matching educational background and occupation an important objective?
- Should any specific age cohort be the focus of indicators at this stage?

³⁵ The ILO's International Standard Classification of Occupations (ISCO) is a "tool for organizing jobs into a clearly defined set of groups according to the tasks and duties undertaken in the job".
<http://www.ilo.org/public/english/bureau/stat/isco/index.htm>

IV.3 Staying in employment and progressing in career (Continuous learning)

Description

78. Staying in employment and progressing in career constitute the two main employability challenges of experienced workers. In particular, increasing the capacity of individuals to remain attractive for the labour market throughout their working life is vital for the employees themselves and the economy as a whole.
79. Factors influencing the employability of experienced workers include demographic trends, technological change, macroeconomic conditions, labour market structure, sector specific trends, contractual arrangements, etc. As a result of long term factors or short term shocks (for example, technological changes or changes in the occupational career) skills may become obsolete (Van Loo et al., 2001), leading to a decline in productivity. To avoid unemployment, workers should be aware of and adapt to changes in the demand for skills.
80. Active Labour Market policies in the context of Flexicurity comprehensively address employability factors of adult workers, including training and lifelong learning initiatives that provide individuals with opportunities to upgrade and develop their skills.
81. The high incidence of temporality in the current labour market makes multiple transitions a very common situation. Easy access to adequate forms of education can facilitate a smooth transition from one position to another, avoiding long unemployment spells. This applies in particular to those with low qualifications, who typically work in occupations where short-term contracts are frequent.
82. Transition rates from employment to unemployment and from employment to inactivity are both lower for the EU-born (2% and 3.1% respectively, in 2007) than for the non-EU-born (4.3% and 3.6%). In particular, recent non-EU migrants face the highest risks of dropping out of employment: 5.5% of the previously employed become unemployed and another 4.2% become inactive within a year³⁶.
83. Ensuring flexible learning pathways so that people can transit from employment to education and vice versa smoothly is essential to respond to the competitive challenges of the future.

Important educational factors

84. Important ways in which E&T systems enhance employability at this stage are related to lifelong learning opportunities and vocational training. Policies should be targeted at promoting and facilitating access to education throughout individuals' lifespan. In fact, educational systems that are open and offer good opportunities for adult learning are better equipped to deal with the changes mentioned above (ibid.). Policies can also promote training opportunities provided by actors other than educational systems, such as on-the-job training.
85. Close to one third of Europe's population aged 25-64 have no or low formal qualifications and they are the ones which are much less likely to upgrade their skills and undertake lifelong learning. This group could be specifically targeted by related educational policies. In addition, individuals with higher level of qualifications are also assumed to possess generic skills (such as learning to learn skills) that allow them to successfully remain attractive for the labour market.
86. In 2008 almost 10% of 25-64 year-olds participated in education and training³⁷. The inactive or unemployed, as well as adults in the age group 55-64 have much lower lifelong

³⁶ European Commission (2008c). "Employment in Europe 2008", data source: Eurostat EU-SILC.

³⁷ European Commission (2009). "Progress towards the Lisbon Objectives in Education and Training: Indicators and benchmarks 2009", data source Eurostat LFS. See also Tables 13-16 and Figure 13 in Annex 3.

participation rate³⁸. In the future, this age group is expected to increase (as discussed in Section II) and include a larger percentage of people with higher levels of educational attainment. Although this could lead to an increased participation in lifelong learning activities, this group remains the object of policy concern.

87. The following specific policy goals have been identified as being relevant in this stage and could make the object of benchmarking:

What are possible policy objectives for this stage?

Overall policy objective

- 1) Facilitate the smooth transition from one job to another, reducing the time in unemployment.
- 2) Ensure that adults are able to develop and update their key competences throughout their life.

Specific policy objectives

- Provide more opportunities for young adults outside the education system to return to education to study towards a formal upper secondary education degree or higher;
- Improve the capacity of E&T systems of retraining adult workers;
- High proportion of adults outside the education system having good opportunities to develop their competences.

Indicators

88. The data on continuing education remain scarce, with only three surveys providing this kind of information: the Labour Force Survey (on a yearly basis), the Adult Education Survey (AES, in the pilot phase, to be undertaken every five years covering 26 EU countries) and the Continuing Vocational Training Survey on enterprises (CVTS, also every five years, covering 27 Member States).
89. The LFS informs on the participation of adults in lifelong learning with breakdowns by employment status. The Adult Education Survey offers data on participation in formal and non-formal learning, as well as the reasons, costs, and obstacles for doing so. Finally, the CVTS reports participation to training courses offered by the enterprises as well as type and costs of those learning activities. It is expected that the new round of the CVTS planned for 2011 will explore the skills that the enterprises seek to develop through the training they offer.
90. Similarly, the OECD Programme for the International Assessment of Adult Competences (PIAAC), currently under preparation, intends to measure key cognitive and generic skills and their actual use in the workplace. The PIAAC survey is expected to take place in 2011, with results being released in early 2013 and should cover 18 EU countries.
91. Improving the validation of non-formal learning or enhancing the recognition of skills and qualifications by employers are additional important policy objectives relevant to this phase. However, there is no data available concerning these two issues.

³⁸ European Commission (2009) also includes data from the Adult Education Survey showing that the rate of participation in adult learning of 55-64 years olds attained 21,7% 2007 (EU-22 average participation rate of 25-65 years olds is 36%).

Table 5: Proposed objectives and indicators related with staying in employment

<i>Possible policy objectives</i>	<i>Indicators</i>	<i>Source</i>
1 Facilitate the smooth transition from one job to another, reducing the time in unemployment	A Rate of inflow into employment 3 or 6 months after participation in a regular activation measure (LMP category 2 – training)	National sources
2 Ensure that adults are able to develop and update their key competences throughout their life	B Participation in CVT courses in enterprises	CVTS
	C Participants to other forms of CVT by type of training	CVTS
	D Number of participants in regular activation measures (LMP category 2 – training) divided by the number of persons wanting to work (ILO unemployed + labour reserve)	LMP and LFS
	E Percentage of adults (by employment status) who have participated in E&T in the four weeks preceding the survey	LFS

Note: Indicators highlighted in blue are part of the five ET benchmarks for 2020.

Indicators on smooth transition from one job to another – Objective 1

- Rate of inflow into employment 3 or 6 months after participation in a regular activation measure (Labour Market Policy (LMP) category 2 – training) - *currently indicator for analysis A4 (Guideline 19) of the Employment Guidelines 2009.*

Source: National sources

Indicators on skills upgrading and adult participation in lifelong learning – Objective 2

- Participation in CVT courses in enterprises.
 - Participants in other forms of CVT by type of training.
- Source both indicators: Eurostat CVTS
- Number of participants in regular activation measures (LMP category 2- training) divided by the number of persons wanting to work (ILO unemployed + labour reserve) - *currently monitoring indicator M2 (Guideline 19) of the Employment Guidelines 2009.*

Source: Eurostat Labour Market Policy (LMP) Database and LFS

- Percentage of adults (25-64) who have participated in education and training in the four weeks preceding the survey (by employment status) - *currently one of the five E&T benchmarks (objective set at 15% by 2020).*

Source: Eurostat LFS

Questions for discussion regarding staying in employment

- Do the suggested policy objectives address the main policy concerns?
- Should the performance of any specific subsystem be the object of particular attention in the context of this benchmark? Which one (VET, formal secondary education, higher education...)?
- Should the contribution of informal education also be considered?
- Should the benchmark apply to groups that are more at risk of labour exclusion? Which groups? young people, older workers, long-term unemployed, low-skilled, migrants...?
- Are there any additional issues that are (more) relevant?

V. TYPE AND SCOPE OF THE BENCHMARK: METHODOLOGICAL CONSIDERATIONS

92. This section discusses possible types of benchmark for the monitoring of the role of E&T on employability and its scope in terms of target groups.

V.1 Benchmark type

93. A benchmark is a standard, or point of reference, against which things can be compared, assessed, measured or judged (OECD, 2007b). Benchmarking is useful for many reasons, not merely to establish better or worse performance, but also to identify differences, similarities or uniqueness among various education and training systems. When supplemented with further analyses, the exercise can contribute to a better awareness of different systems and an appreciation of alternate approaches to achieving similar outcomes (Desjardins et al., 2004).
94. However, setting targets is a delicate exercise. Targets should be credible, challenging, send a strong policy message while remaining consistent with other policies, and serve as a good communication tool.
95. Keeping these objectives in mind, benchmarks can be defined following two main approaches: aggregative and non-aggregative frameworks (Sharpe, 2004).
96. Among the non-aggregative methods is the identification of one single indicator as representative benchmark or the use of scorecards, which consist in tallying the number of indicators³⁹ hierarchically in descending order or use the top performers as benchmarks and rank other countries in relation to the benchmark performer.
97. Among the aggregative methods, a frequently used one is the aggregation of indicators, on the basis of an underlying theoretical model, by assigning weights to individual variables to create a composite index.
98. These options present pros and cons. The pros of aggregative frameworks are their ability to respond to the cons of non-aggregative frameworks and vice versa⁴⁰.
99. Concerning non-aggregative methods, the identification of one single indicator as a benchmark implies assuming that the concept under monitoring can be resumed to a single determinant. When evaluating employability, this assumption could be considered too

³⁹ An indicator is a quantitative or qualitative measure derived from a series of observed facts that can reveal relative positions (e.g., of a country) in a given area (OECD, 2008).

⁴⁰ For a detailed discussion of the advantages and disadvantages of each framework, please refer to OECD (2008) and Sharpe (2004).

restrictive. The scorecards method allows for the accountability of all dimensions of the concept of employability.

100. Conversely, a composite indicator is especially appealing when measuring multi-dimensional concepts which cannot be captured by a single indicator (OECD, 2008), such as employability. Hence, it constitutes an interesting option for cross-country and long-term monitoring of the contribution of E&T to employability.
101. However, it should be kept in mind that any weighting process is driven by subjective values and the interpretation of indexes may be misleading if their construct is not well known and understood (Sharpe, 2004). Moreover, the ranking of countries induced by this approach is often debated as of little value for policy analysis (see for instance the ILO discussion on the measurement of decent work, 2008).
102. An alternative non-aggregative method would consist in collecting a core set of indicators. It would involve differentiating among indicators that are considered essential (“main” indicators); indicators that could be included as “additional” indicators whenever deemed appropriate and where data is available; “context” indicators; and, if the timeframe is large enough, indicators which could be “candidate” for future inclusion (as data is expected to become available more widely) (ibid.).
103. Scorecards have so far been the main method adopted at the EU level (European Commission, 2002). While their main strength is their account of country-specific circumstances, their main drawback is also their limitation for inter-country comparability and ranking.
104. The purpose of this paper is not to argue in favour of one or another of benchmark. Rather, it aims at providing the minimum information on the availability and reliability of the data necessary to the construct of a benchmark (whatever its type). The construct of a benchmark depends mainly on its coverage for all Member States and on its conceptual clarity, regularity, validity, reliability, comparability and objectivity. Furthermore, given the 2010 deadline for the adoption of the employability benchmark, data should already exist or at least be easily introduced into existing international surveys (e.g., the Labour Force Survey, LFS).

V.2 Benchmark scope

105. Given the lifelong dimensions of this benchmark (Figure 6), it is essential to focus on indicators that can be disaggregated at the gender, age, labour status, ISCED and ISCO (occupations), and immigration status levels.
106. Gender is a cross-cutting concern in all EU countries, with the persistence of inequalities in a wide range of aspects, including access to employment opportunities, working conditions (ILO, 2008) and participation and completion rates by type of E&T (European Commission, 2009).
107. Moreover, as already mentioned in section II, the EU population is currently undergoing an accelerated process of ageing which will bring with it a considerable shift in the age distribution of the working age population. Thus, ageing is likely to have significant effects on overall employability indicators, although the sign and magnitude of composition effects will depend on the choice of the age range used for the working age population. As highlighted by the Cedefop (2010b) the composition effects will be more significant for the 20 to 64 age band than for the group aged 15 to 64. It is therefore important to disaggregate all indicators by age groups to control for this demographic effect.
108. In addition, it is equally important to monitor closely those at greater distance from the labour market (e.g. the low-skilled, migrants etc.), which may be achieved by a disaggregation by ISCED level (including all types of E&T), labour status and immigration status. Last but not least, an ISCO disaggregation may improve the country mapping of the

efforts achieved or to be made towards the employability benchmark by sector and type of activity.

109. Unless specified, all the indicators discussed in this note can be disaggregated at each of the above mentioned levels.

Questions for discussion regarding the type and scope of the benchmark

- Given the multidimensionality of the concept of employability, what option would be preferable for its measurement:
 - a single indicator (as the other five core indicators ET2020)?
 - a scoreboard approach (as in Bologna)?
 - a composite indicator?
 - a combination of indicators for monitoring and indicators for analysis (as in for the Employment guidelines)
 - a combination of “main” indicators, “context” indicators and “future” indicators (as in ILO’s quality of employment framework)
 - qualitative indicators?
- Is the current availability of data a key determinant of the choice of indicator (s)? Or, on the contrary, is this benchmark intended to promote the collection of additional statistical data?
- With which periodicity will it be advisable to monitor progress towards enhancing employability through E&T?

REFERENCES

- Arulampalam, W., Booth, A. and Taylor, M. (2000). Unemployment Persistence. *Oxford Economic Papers*, 52: 24-50.
- Becker, G.S. (1964). *Human Capital*. New York: National Bureau of Economic Research.
- Bonnal, L. Mendes, S. and Sofer, C. (2000). Access to the First Job: A Comparison Between Apprenticeship and Vocational School in France, University of Orleans.
- Cedefop (2010a, forthcoming). Skill supply and demand in Europe: medium-term forecast up to 2020. Luxembourg: Publications Office.
- Cedefop (2010b). *New Skills for New Jobs: Action Now*. A report by the Expert Group on New Skills for New Jobs prepared for the European Commission. Luxembourg: Publications Office.
- Cedefop (2008). *Terminology of European Education and Training Policy*. Luxembourg: Publications Office.
- De Grip, A., van Loo, J. and Sanders, J. (2004). The Industry Employability Index: Taking Account of Supply and Demand Characteristics. *International Labour Review*, 143 (3): 211-233.
- Desjardins, R., Garrouste-Norelius C. and Mendes, S. (2004). Benchmarking Education and Training Systems in Europe: An international comparative study. Stockholm: *Studies in Comparative and International Education*, 67.
- European Commission (2010). *Europe 2020, A Strategy for Smart, Sustainable and Inclusive Growth*. Brussels: Communication from the Commission, COM 2020 Final.
- European Commission (2009). *Progress towards the Lisbon Objectives in Education and Training: Indicators and benchmarks 2009*. Brussels: Commission staff Working Document.
- European Commission (2008a). *New Skills for New Jobs: Anticipating and Matching Labour Market and Skills Needs*. Brussels: Communication from the Commission, COM 868.
- European Commission (2008b). *2009 Ageing Report: Underlying Assumptions and Projection Methodologies*. European Economy, No 7. Brussels.
- European Commission (2008c). *Employment in Europe 2008*. Brussels: Commission staff Working Document.
- European Commission (2008d). *Progress towards the Lisbon Objectives in Education and Training: Indicators and benchmarks 2008*. Brussels: Commission staff Working Document.
- European Commission (2008e). *Proposal for a Council Decision on guidelines for the employment policies of the Member States*. COM 869 final.
- European Commission (2007). *Towards Common Principles for Flexicurity: More and Better Jobs Through Flexibility and Security*. Brussels: Communication from the Commission, COM 359 Final.
- European Commission (2002). *European Benchmarks in Education and Training: Follow-up to the Lisbon European Council*. Brussels: Communication from the Commission, COM 629 final.

European Union (2009a). Council Conclusions of 12 May 2009 on a Strategic Framework for European Cooperation in Education and Training ('ET 2020'). Official Journal of the European Union C 119 of 28 May 2009.

European Union (2009b). Council Conclusions of 26 November 2009 on the Education of Children with a Migrant Background. Official Journal of the European Union C 301 of 11 December 2009.

European Union (2007a). Council Resolution of 15 November 2007 on the New Skills for New Jobs. Official Journal of the European Union C 290 of 4 December 2007.

European Union (2007b). Council Conclusions of 25 May 2007 on a Coherent Framework of indicators and benchmarks for monitoring progress towards the Lisbon objectives in education and training. Official Journal of the European Union C 311 of 21 December 2007.

European Union (2006). Recommendation of the European Parliament and of the Council of 18 December 2006 on key competences for lifelong learning. Official Journal of the European Union L 962.

Eurostat (2010). Euro area Unemployment Rate up to 10%. News Release 5/2010, 8 January 2010. Luxembourg

Eurostat (2009a). Five million young people were unemployed in the EU27 in the first quarter 2009, NewsRelease 109/2009, 23 July 2009. Luxembourg

Eurostat (2009b). The Impact of the Crisis on Employment. Statistics in Focus No 79, Luxembourg.

Gallup (2007). Young Europeans. A survey among young people aged between 15-30 in the European Union. Analytical Report. Flash Eurobarometer Series, No 202.

Gazier, B. ed (1999). Employability: Concepts and Policies. European Employment Observatory Research Network. Brussels: European Commission.

Harvey, L. (1999). Employability: Developing the Relationship Between Higher Education and Employment. Birmingham: Centre for Research into Quality, University of Central England.

Hillage, J. and Pollard, E. (1998). Employability: Developing a framework for policy analysis. London: UK Department for Education and Employment, Research Brief No.85.

International Labour Organisation (2008). Measurement of Decent Work. Discussion Paper for the Tripartite Meeting of Experts on the Measurement of Decent Work. Geneva: ILO, TMEMDW/2008.

McQuaid, R., and Lindsay, C. (2005). The Concept of Employability. *Urban Studies*, 42 (2): 197-219.

NCVER (2003). Defining Generic Skills. At a Glance. Adelaide.

OECD (2009). Education at a Glance. Paris: OECD Publications.

OECD (2008). Handbook on Constructing Composite Indicators: Methodology and User Guide. Paris: OECD Publications.

OECD (2007a). PISA 2006: Science Competencies for Tomorrow's World. Paris: OECD Publications.

OECD (2007b). Glossary of Statistical Terms. Paris: OECD Publications.

OECD (2000). From Initial Education to Working Life. Making Transitions Work. Paris: OECD Publications.

Psacharopoulos, G and Schlotter, M (2010). Skills for Employability, Economic Growth and Innovation: Monitoring the Relevance of Education and Training Systems". Analytical report for the European commission prepared by the European Expert Network on Economics of Education (EENEE).

Sharpe, A. (2004). Literature Review of Frameworks for Macro-Indicators. Ottawa: CSLS Research Report 2004-03.

Stiglitz, J., Sen A. and Fitoussi, J.P. (2009). Report by the Commission on the Measurement of Economic Performance and Social Progress. <http://www.stiglitz-sen-fitoussi.fr>

van der Velden, R. K. and Wolbers, M. H. (2008). A Framework for Monitoring Transition Systems. Paris: OECD Education Working Papers, No. 20.

Van Loo, J., De Grip, A. and de Steur, M. (2001). Skills obsolescence: causes and cures. *International Journal of Manpower*, 22(1/2):121-137.

ANNEX 1 – SUMMARY TABLE OF POSSIBLE INDICATORS

Indicator by Employability Stage and Policy Objective	Coverage ^a	Disaggregation Level ^b	Availability ^c	Comparability ^d	Source
Stage 1. Preparation for work					
Indicators on overall skill (mis)match					
Comparison of the forecasted skills demand vs. actual and forecasted skills supply (by ISCED level)	+++	+++	++	+	Cedefop and Eurostat
Indicators on educational attainment level					
Percentage of the population (20-24, 25-29, etc.) having attained at least upper secondary education (ISCED level 3 long)	+++	+++	+++	+++	Eurostat
Share of 30-34 year-olds with tertiary educational attainment	+++	+++	+++	+++	Eurostat
Percentage of graduates (18-24, 20-24, 25-29, etc.) by ISCED level	+++	+++	+++	+++	Eurostat
Indicator on early leavers from E&T					
Percentage of the population aged 18-24 with at most lower secondary education (ISCED level 2 or 3c short) and not in further E&T	+++	+++	+++	+++	Eurostat
Indicator on learning outcomes					
Percentage of low achievers in reading, science and math	+	+++	+++	+++	OECD Pisa
Indicator on apprenticeship or traineeship					
Percentage of students having finished their studies and who have benefited from apprenticeship or traineeship	+++	+++	++	+++	EU-SILC*
Stage 2. Transition from education to work					
Quantitative matching					
Indicator on labour reserve					
Ratio of active persons (by age group) wanting to work by corresponding working age population	+++	+++	++	++	LFS
Indicators on unemployment incidence and duration for young people					
Unemployment rate (15-24, 20-24, 25-29), by ISCED level	+++	+++	++	+++	LFS
Long-term unemployment rate (15-24, 20-24, 25-29), by ISCED level	+++	+++	++	+++	LFS
Duration of unemployment spells for young people (15-24, 20-24, 25-29), by ISCED level	+++	+++	++	++	LFS and EU-SILC
Indicators on youth NEET					
Percentage of the cohort population not in education and unemployed (15-24, 20-24, 25-29), by ISCED level	+++	++	++	++	LFS
Frequency of periods in NEET	+++	++	+	+++	LFS
Indicators on labour force participation of young people					
Employment rate (15-24, 20-24, 25-29), by ISCED level	+++	+++	++	+	LFS
Percentage of workers (20-24, 25-29) working involuntarily part-time	+++	+++	+	+	LFS
Qualitative matching					

Indicator by Employability Stage and Policy Objective	Coverage ^a	Disaggregation Level ^b	Availability ^c	Comparability ^d	Source
Indicators on time interval to (a significant) job after leaving education					
Number of months before finding a job after leaving education by ISCED level, ISCO, for relevant age cohorts	+++	+++	++	+++	EU-SILC
Number of months before finding a permanent job by ISCED level for relevant age cohorts	+++	+++	++	+++	LFS
Indicator on education/job (mis)match					
Percentage of young people (by age cohort and ISCED level) employed at a relevant skill-level (ISCO)	+++	+++	++	+++	LFS
Incidence of job mismatches (by ISCED level, ISCO level, type of contract and age cohort)	+++	+++	+	+++	LFS
Indicator on job (mis)match within a time interval after leaving education					
Proportion of young people who have an occupation relevant to their educational level X years after leaving education	+++	+++	++	+++	LFS
Indicator on transition by type of contract					
Transition between non-employment and employment and within employment by type of contract (permanent, fixed-term, E&T (e.g., paid apprenticeship), self-employed) from year n to year n+1	+++	+++	++	++	EU-SILC
Stage 3. Stay and progress in employment					
Indicators on smooth transition from one job to another					
Rate of inflow into employment 3 or 6 months after participation in a regular activation measure (LMP category 2 – training)	+	+++	+++	-	National sources
Indicators on skills upgrading and participation in LLL					
Participation in CVT courses on-the-job	++	+++	+++	+++	CVTS
Participants to other forms of CVT by type of training	++	+++	+++	+++	CVTS
Number of participants in regular activation measures (LMP category 2 – training) divided by the number of persons wanting to work (ILO unemployed + labour reserve)	+++	+++	+	+++	LMP and LFS
Percentage of adults (by employment status) who have participated in E&T in the four weeks preceding the survey	+++	+++	+++	+++	LFS

Notes : (+++): very good; (++) : good; (+): medium; (-): weak.

a. Number of EU countries ; b. Gender, age, employment and immigration status, ISCED and ISCO levels ; c. Regularity of data collection; d. Homogeneity of questionnaires across countries. * data only available for apprenticeship.

ANNEX 2 – NATIONAL AND INTERNATIONAL DATA SOURCES

There are many national and international surveys which provide valuable information about the relationship between employment, education and skills in the Member States. The following table briefly presents some of those initiatives.

Initiative/ institution	Coverage	Concept measured/ target group	Frequency	Data source	Notes on data collected relevant for employability
UOE Education database (UNESCO/OECD/EURO STAT)	OECD countries	Education statistics (inputs, outputs, outcomes structural characteristics of education systems). All levels of education	Annual	National administrative sources	Participation and achievement in education; Public and private spending on education; Lifelong learning; Conditions for pupils and teachers; http://www.oecd.org/document/54/0,3343,en_2649_39263238_38082166_1_1_1_37455,00.html
PISA Programme for International Student Assessment (OECD)	DE, DK, NL, BE, FR, LU, UK, IE, IT, EL, ES, PT, AT, FI, SE, SK, PL, LU, HU, CZ + Partner countries	Literacy in three competence fields: reading, mathematics, science. Secondary education	Since 2000, every three years	Survey among 15-years olds	Percentage of low achievers in reading, science and maths. Reading (in 2000), mathematics (in 2003) and science (in 2006). http://www.pisa.oecd.org/pages/0,2987,en_32252351_32235731_1_1_1_1_1,00.html
PIAAC Programme for the international assessment of Adult Competences (OECD)	AU, AT, BE, CA, CL, CZ, DK, EE, FI, FR, DE, HU, IE, IT, JP, KR, NL, NO, PL, PT, RU, SK, ES, SE, UK, US	Literacy, reading competences, numeracy; Problem solving in technology-rich environments; Use of competencies at the workplace. All levels of education	New survey: 2011-2012 (main data collection) Sept 2013 (release data)	Survey	www.oecd.org/els/employment/piaac
Labour Force Survey (Eurostat)	EU	All levels of education	Quarterly, Annually	Survey	Number of adults wanting to work; Unemployment rate; Percentage of young people (by age cohort and ISCED level) employed at a relevant skill-level (ISCO).

Initiative/ institution	Coverage	Concept measured/ target group	Frequency	Data source	Notes on data collected relevant for employability
					Percentage of adults (by employment status) who have participated in E&T in the four weeks preceding the survey
Labour Force Survey Ad-hoc module (Eurostat)	AT, BE, DK, ES, FI, FR, GR, HU, IE, IT, LT, LU, NL, PT, RO, SE, SI, SK, UK	2000: Transition from school to working life 2009: Entry of young people into the labour market Individuals aged 15-35 having left continuous education in the last five/ten years; All levels of education	Ad-hoc	Survey	By level of education and by time (months) since leaving education: Activity rates, unemployment rates, proportion of self-employed, proportion in precarious employment. Experience of first significant job (minimum duration of six months) : average time to enter first significant job, average occupational status, existence of any period of continuous job search of more than one month. Employed in service sector and occupational status of recent school-leavers, by level of education. Young people social origin, educational attainment and labor outcomes in Europe, also compared with parents' educational level. Incidence of job mismatches, by level of education, by field, by type of contract (temporary, part time); Job search and participation in VET, by job mismatch http://circa.europa.eu/irc/dsis/employment/info/data/eu_lfs/LFS_MAIN/Adhoc_modules/Adhoc_modules_mainpage.htm
Job vacancy statistics (JVS), (Eurostat)	BG, CZ, DE, EE, GR, ES, CY, LV, LT, LU, NL, PT, RO, SL, SV, FI, SE, UK	All levels of education	Annually and quarterly		Number of job vacancies; Number of occupied jobs; Job vacancy rate (and annual change).
Labour Market Policy (LMP) Database (Eurostat)	EU-27	Public interventions which are explicitly targeted at groups of persons with difficulties in the labour market		Administrative sources	Data on public expenditure and participants; Quantitative and qualitative data.

Initiative/ institution	Coverage	Concept measured/ target group	Frequency	Data source	Notes on data collected relevant for employability
ECHP: European Household Panel Survey (Eurostat)	DE, DK, NL, BE, FR, LU, UK, IE, IT, EL, ES, PT, AT, FI, SE	Transition from school to the labour market. All levels of education	Annual 1994 to 2001, replaced by EU-SILC	Survey (Self-assessment calendar and Job calendar)	Time needed to find a job.
EU-SILC Survey on Income and Living Conditions (Eurostat)	2005: EU-25 NO, IS 2006: added BG, RO, TR	Income, poverty, social exclusion and living conditions. All levels of education	Annual since 2003	Survey	Percentage of students having finished their studies, who have benefited from apprenticeship; Transition between non-employment and employment and within employment by type of contract, self-employed) from year n to year n+1.
AES: Adult Education survey (Eurostat)	29 countries: EU27 except IE, plus Croatia, Turkey and Switzerland	Participation in education and lifelong learning activities (formal, non-formal and informal learning). All levels of education	Pilot 2005-2008. Planned to be conducted every 5 years	Survey	
CVTS Continuing vocational training in enterprise survey (Eurostat)	EU-27 + Norway	Continuing Vocational training	1993, 1999, 2005	Survey	Participation in CVT courses on-the-job; Participants to other forms of CVT by type of training
Research Centre for Education and the Labour Market (ROA)	NL	1.5 years after leaving education. Transition from school to the labour market. All levels of education	Annual Since 1995	Surveys among school-leavers	Working status www.roa.unimaas.nl/
Generation (Cereq: Centre d'Etudes e Recherches sur les Qualifications)	FR	3 years after leaving education. Transition from school to the labour market. All levels of education	Cohorts graduated in 1992, 1998, 2001, 2004 interviewed 3 years after	Survey 1992 (27 000 individuals) 1998 (55 000 individuals) 2001 (25 000 individuals)	First job : type of contract, salary, time until employment; Current job: (idem), satisfaction with job, salary. Paths followed during those 3 year: periods of unemployment, time spent until accessing permanent position, transition from one job to another, geographical mobility, return to education

Initiative/ institution	Coverage	Concept measured/ target group	Frequency	Data source	Notes on data collected relevant for employability
				2004 (65 000 individuals)	http://www.cereq.fr/enquetegeneration.htm
European Quality Assurance Reference Framework (EQARF)		VET			indicator (n. 5) on placement rate: a) destination of VET learners at a designated point in time after completion of training, according to the type of programme and the individual criteria; b) Share of employed learners at a designated point in time after completion of training, according to the type of programme and the individual criteria.
Bologna Working Group on Employability	46 countries, including EU-27	Higher education		Mini informal survey late 2007/2008	Mini survey on main challenges with regards to graduate employability, nature of the dialogue between higher education institutions and employers. Examples of best practice.
Careers after Higher Education – A European Research Survey (CHEERS)	AU, FI, FR, DE, IT, NL, ES, SE, UK, NO, CZ and Japan	4 years after graduation Higher education	2000	Survey 36,000 graduated in 1994/1995. Interview surveys with graduates and employers	The questionnaire addressed the socio-biographic profile of the graduates, their study experiences and (self-perceived) competencies acquired, their employment, work and careers since graduation and the links they perceive between education and work (data similar to the REFLEX data) http://www.uni-kassel.de/incher/cheers/index.ghk
Research into Employment and Professional Flexibility (6FP) (REFLEX)	AU, BE-Flanders, CZ, EE, FI, FR DE, IT, NL, NO, ES, CH, UK (Japan, PT and SE data later).	5 years after graduation Youth transition to work and graduates' perceptions of their previous studies. Higher education	2005	Survey 70.000 young people graduated in 1999/2000 Country studies (9) (structural and institutional factors); Qualitative study on graduate	Rate of unemployment. Proportion in permanent employment. Type of contract (permanent/temporary) 1 st job. Time until finding first job. Periods of unemployment since graduation Occupation held (level of skills required) Mobility (Proportion still in their first job) Proportion of graduates feeling that their current jobs were appropriate to the knowledge and skills acquired. Strong/weak points Education (graduates' opinions on whether HE provided them with the right skills for starting working and/or future career). General degree of

Initiative/ institution	Coverage	Concept measured/ target group	Frequency	Data source	Notes on data collected relevant for employability
				competences in the knowledge society	satisfaction with education received. Satisfaction with occupational situation Proportion graduated in Public Sector. Proportion having introduced innovation at their firms. Salary www.fdewb.unimaas.nl/roa/reflex/index.htm
ALMALAUREA	IT	1, 3 and 5 years after graduation Higher education	Annual since 1997	Survey. In 2008, 207 000 graduates from 47 universities	www.almalaurea.it
Swedish National Agency for Higher Education	SE	1.5 years after graduation and 5 years after graduation Higher education	Annual	Survey. Statistics Sweden	Data on employment rate and education institution Includes information from the Swedish National Tax Board (income) and the Swedish Agency for Public Management (unemployment rates).
Destinations of Leavers from HE (DLHE) (HESA Higher Education Statistical Agency)	UK	6 months after graduation. Higher education	Annual since 2002/2003 (substitutes the FDS run since 1994)	Census survey	Activity, qualification required for job, location of employment, employer size, institution of further study, salary, type of qualification of further study, mode of further study, standard industrial classification (SIC), Standard Occupational Classification (SOC) www.hesa.ac.uk/index.php/content/view/98/137/
Longitudinal Survey of Destinations of Leavers from HE (HESA Higher Education Statistical Agency)	UK	3.5 years after graduation (i.e. three years after they participated in the DLHE) Higher education	2004/2005 cohort (published in 2009) and 2002/2003 cohort (published in 2007)	Sample from respondents to the Early Survey.	Follow-up of the DLHE www.hesa.ac.uk/index.php/content/view/112/154/

ANNEX 3 – STATISTICAL DATA⁴¹

Table 6: Educational attainment of the adult population aged 25-64

	2000			2008			Change between 2000 and 2008		
	Percentage of the population with low, medium and high educational attainment			Percentage of the population with low, medium and high educational attainment					
	Low	Medium	High	Low	Medium	High	Low	Medium	High
EU-27	35.6	44.9	19.5	28.5	47.2	24.3	-7.1	2.3	4.8
Belgium	41.5	31.5	27.1	30.4	37.3	32.3	-11.0	5.8	5.2
Bulgaria	32.5	49.3	18.2	22.5	54.8	22.8	-10.0	5.5	4.6
Czech Republic	13.9	74.5	11.5	9.1	76.4	14.5	-4.9	1.9	3.0
Denmark	21.5	52.4	26.2	22.4	43.1	34.5	0.9	-9.2	8.3
Germany	18.7	57.4	23.8	14.7	59.9	25.4	-4.1	2.5	1.6
Estonia	13.9	57.1	28.9	11.5	54.2	34.3	-2.4	-3.0	5.4
Ireland	42.4	35.6	22.0	30.0	35.6	34.4	-12.4	0.0	12.5
Greece	48.4	34.6	17.0	38.9	38.4	22.6	-9.5	3.8	5.6
Spain	61.4	15.9	22.7	49.0	21.7	29.2	-12.4	5.8	6.6
France	37.8	40.7	21.6	30.4	42.4	27.3	-7.4	1.7	5.7
Italy	54.8	35.5	9.7	46.7	39.0	14.4	-8.1	3.4	4.7
Cyprus	38.5	36.4	25.1	26.9	38.6	34.5	-11.6	2.2	9.4
Latvia	16.8	65.0	18.2	14.2	60.6	25.2	-2.6	-4.4	7.2
Lithuania	15.8	41.8	42.4	9.4	60.1	30.4	-6.3	18.3	-12.0
Luxembourg	39.1	42.6	18.3	32.1	40.3	27.7	-7.0	-2.3	9.4
Hungary	30.6	55.3	14.1	20.3	60.5	19.2	-10.3	5.2	5.1
Malta	81.9	12.8	5.4	72.5	14.3	13.2	-9.3	1.5	7.8
Netherlands	33.9	42.1	24.0	26.7	41.1	32.2	-7.2	-1.0	8.2
Austria	23.8	62.1	14.1	19.0	63.0	18.1	-4.8	0.9	4.0
Poland	20.2	68.4	11.4	12.9	67.6	19.6	-7.3	-0.9	8.2
Portugal	80.6	10.5	8.8	71.8	13.9	14.3	-8.9	3.4	5.5
Romania	30.7	60.0	9.3	24.7	62.5	12.8	-6.0	2.5	3.5
Slovenia	24.7	59.4	15.9	18.0	59.4	22.6	-6.8	0.0	6.8
Slovakia	16.2	73.5	10.3	10.1	75.2	14.8	-6.1	1.7	4.4
Finland	26.8	40.9	32.3	18.9	44.5	36.6	-7.8	3.6	4.3
Sweden	22.8	47.5	29.7	15.0	53.0	32.0	-7.8	5.5	2.3
United Kingdom	35.6	36.0	28.5	26.6	41.4	32.0	-9.0	5.5	3.6
Iceland	44.2	32.0	23.8	35.9	32.8	31.3	-8.3	0.8	7.5
Norway	14.6	53.8	31.6	20.0	44.4	35.5	5.4	-9.3	3.9

Source: Eurostat (LFS), database extraction: 10 November 2009

⁴¹ From European Commission (2009) *Progress towards the Lisbon Objectives in Education and Training: Indicators and Benchmarks 2009*, and European Commission (2008c) *Employment in Europe 2008*

**Table 7: Share of low achievers in reading, mathematics and science
2000, 2003 and 2006**

	Reading		Maths		Science
	2000	2006	2003	2006	2006
EU	21.3	24.1	20.2	21.2	20.2
Belgium	19.0	19.4	17.0	17.3	17.0
Bulgaria	40.3	51.1		53.3	42.6
Czech Republic	17.5	24.8	18.7	19.2	15.5
Denmark	17.9	16.0	18.3	13.6	18.4
Germany	22.6	20.0	24.4	19.9	15.4
Estonia		13.6		12.1	7.7
Ireland	11.0	12.1	27.6	16.4	15.5
Greece	24.4	27.7	43.0	32.3	24.0
Spain	16.3	25.7	26.8	24.7	19.6
France	15.2	21.7	19.7	22.3	21.2
Italy	18.9	26.4	31.9	32.8	25.3
Latvia	30.1	21.2		20.7	17.4
Lithuania		25.7		23.0	20.3
Luxembourg	35.1i	22.9	25.1	22.8	22.1
Hungary	22.7	20.6		21.2	15.0
Netherlands	9.5i	15.1	13.8	11.5	13.0
Austria	19.3	21.5	20.0	20.0	16.3
Poland	23.2	16.2	25.6	19.8	17.0
Portugal	26.3	24.9	37.9	30.7	20.2
Romania	41.3	53.5		52.7	46.9
Slovenia		16.5		17.7	13.9
Slovakia		27.8	23.6	20.9	20.2
Finland	7.0	4.8	9.8	6.0	4.1
Sweden	12.6	15.3	21.3	18.3	16.4
United Kingdom	12.8i	19.0		19.8	16.7
Croatia		21.5		28.6	17.0
Turkey		32.2	52.3	52.1	46.6
Iceland	14.5	20.5	15.0	16.8	20.5
Norway	17.5	22.4	20.8	25.2	21.1
Liechtenstein	22.1	14.3	13.3	13.2	12.9

Source: OECD, PISA database 2000, 2003, 2006

i: Netherlands, Luxembourg and the UK not representative in 2000

Additional note: EU figure: weighted average based on number of pupils enrolled and data for 18 countries

Figure 9: Youth unemployment rates for Member States by gender, 2008

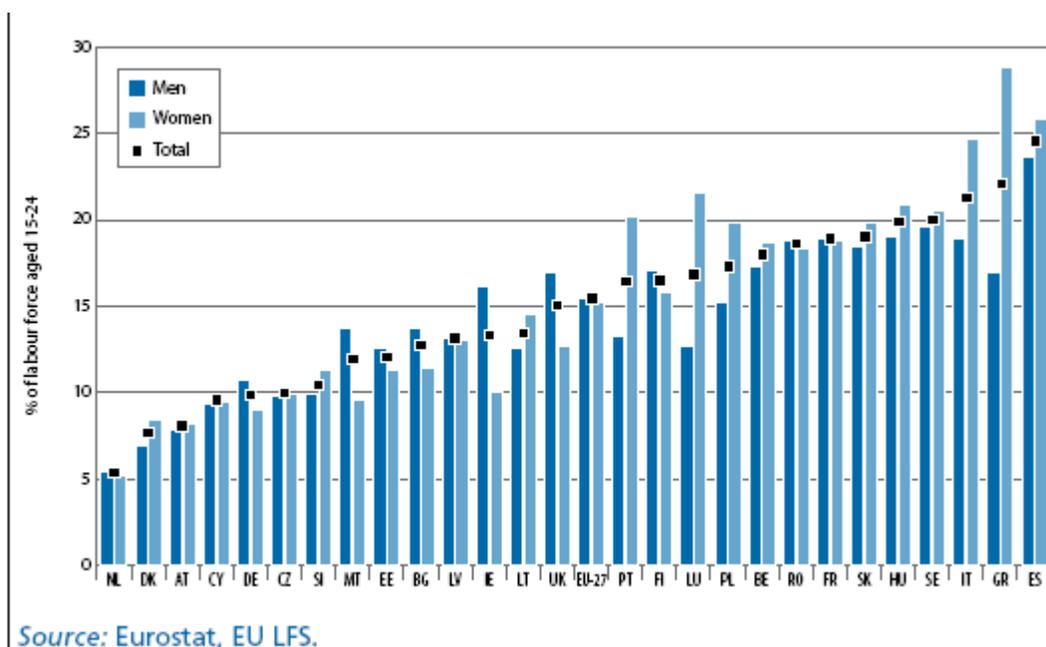


Table 8: Number of persons in employment by highest level of education attained (15-64 years old) – (year-on-year percentage change, quarterly data)

	Low educational attainment				Medium educational attainment				High educational attainment					
	2008		2009		2008		2009		2008		2009			
	I	II	III	IV	I	II	III	IV	I	II	III	IV		
EU-27	-1.1	-2.0	-3.3	-3.7	-5.2	1.8	1.5	3.7	3.2	-1.5	4.9	3.9	4.3	3.5
Belgium	-6.1	-5.9	-1.5	-3.7	-7.9	8.2	5.3	3.7	3.2	-3.7	1.7	2.3	1.6	-0.3
Bulgaria	9.3	2.2	4.1	7.8	4.6	4.9	2.9	2.1	-0.2	-2.3	1.3	4.6	4.2	2.7
Czech Republic	1.0	-1.5	-2.4	-2.4	-5.4	1.5	1.3	0.7	-0.1	-1.7	4.0	5.6	7.5	10.2
Denmark	-8.5	-8.4	-4.9	0.3	0.5	0.1	-0.3	0.8	2.0	-4.3	14.0	14.2	11.6	-0.6
Germany	1.2	-1.8	-7.9	-6.0	-3.8	0.5	0.4	2.4	1.5	-1.1	6.2	3.0	5.4	5.4
Estonia	14.0	8.9	-0.9	4.4	-28.8	1.1	1.7	-2.1	-4.1	-10.3	-2.2	-5.0	4.4	6.7
Ireland	-1.5	-6.4	-11.5	-13.2	-19.3	0.2	-0.8	-1.1	-4.7	-10.8	7.6	5.3	4.2	2.1
Greece	-2.1	-1.4	-3.1	-1.7	-2.4	2.8	2.9	2.3	1.0	-0.8	3.0	3.3	5.0	3.9
Spain	0.7	-1.5	-3.7	-6.4	-11.2	1.7	0.1	1.4	-0.4	-5.7	2.9	2.5	1.3	-0.7
France	-2.4	-4.3	-3.1	-5.3	-5.0	3.3	3.3	1.3	0.9	-1.3	4.1	3.9	4.8	5.0
Italy	-2.3	-0.8	-2.6	-3.1	-3.1	1.4	0.6	1.1	0.8	0.4	9.2	7.1	5.6	6.3
Cyprus	-6.4	-7.7	-4.5	-1.1	3.2	1.4	1.3	0.1	-2.2	-1.7	8.4	6.6	4.0	3.1
Latvia	-9.5	-5.6	-5.1	-11.3	-21.6	3.0	3.8	-4.5	-9.9	-9.4	17.2	4.5	16.1	8.2
Lithuania	-20.7	-24.7	-26.7	-27.2	-19.4	-0.7	0.2	-1.9	-1.7	-6.1	6.0	1.1	4.9	6.6
Luxembourg	-11.4	-7.2	-9.6	0.3		-0.9	11.8	-2.6	-7.4		5.5	4.1	10.8	2.3
Hungary	-2.2	-3.9	-1.6	-1.0	-10.4	-3.1	-4.0	-3.1	-3.0	-2.7	3.7	5.9	7.2	6.2
Malta	1.3b	-2.0	4.6	3.0	4.9	7.5b	7.4	-0.6	-0.3	-4.3	2.8b	5.7	3.9	1.4
Netherlands	1.2	1.6	3.4	4.2	2.0	0.1	-1.0	-1.9	-1.6	-0.1	5.2	5.4	4.6	4.5
Austria	-2.0	-4.7	-6.3	-4.2	-5.2	1.8	3.2	3.0	2.9	0.7	4.2	2.8	1.5	2.8
Poland	4.1	-2.3	-0.7	-6.0	-6.7	4.3	3.7	2.9	2.7	0.1	5.4	5.7	7.9	7.6
Portugal	0.9	1.0	-1.8	-2.8	-4.8	0.5	0.7	3.0	3.5	4.8	3.6	6.3	6.6	8.1
Romania	-1.1	-2.6	-1.3	1.5	1.0	-0.5	-0.4	-1.5	-0.5	-1.8	10.5	8.0	8.2	4.4
Slovenia	3.5	1.5	-8.9	-0.5	-9.4	2.0	2.4	3.2	0.8	-1.6	2.1	-4.3	7.3	8.3
Slovakia	-4.7	-2.1	16.1	5.5	-5.3	2.8	2.6	3.3	1.9	-1.1	3.8	4.7	6.1	6.0
Finland	-0.2	0.0	-1.1	-0.9	1.2	2.6	3.0	1.3	1.8	0.4	3.1	1.5	1.7	0.7
Sweden	-2.8	-1.4	-4.2	-4.0	-6.1	1.7	1.2	0.6	-0.8	-2.8	4.5	3.0	2.8	2.7
United Kingdom	-3.8	-3.0	-3.8	-2.1	-4.0	2.6	2.7	1.7	0.1	-2.0	3.5	2.4	1.8	0.4

Data source: Eurostat (LFS), database extraction: 25 August 2009

(:) Missing or not available

Table 9: Unemployment rates, by highest level of education attained (15-64 years old)

	Low educational attainment								Medium educational attainment								High educational attainment										
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2000	2001	2002	2003	2004	2005	2006	2007	2008	2000	2001	2002	2003	2004	2005	2006	2007	2008
EU-27	12.2	11.1	11.5	11.8	12.3	12.2	11.8	10.9	11.6	9.6	9.2	9.5	9.5	9.6	9.3	8.3	7.0	6.5	4.9	4.3	4.7	4.9	5.1	5.0	4.6	4.0	3.8
Belgium	10.4	10.9	11.3	11.7	12.1	14.1	14.0	13.0	12.5	6.8	5.0	6.6	8.0	7.4	8.5	8.2	7.6	7.0	2.7	3.1	3.5	3.8	3.7	4.4	4.5	3.8	3.6
Bulgaria	25.7	33.9	30.6	25.8	21.8	20.0	20.5	18.0	14.9	15.8	19.4	17.7	12.6	11.3	9.2	7.7	5.8	4.5	6.7	8.9	8.2	6.8	5.8	4.3	4.0	2.4	2.3
Czech Republic	22.8	21.7	20.6	22.1	26.2	27.0	24.8	20.4	19.4	7.9	7.1	6.4	6.9	7.5	7.2	6.4	4.7	3.7	3.0	2.5	1.8	2.1	2.1	2.3	2.5	1.7	1.7
Denmark	6.3	6.3	7.0	8.6	7.5	7.5	6.7	5.7	5.3	4.4	3.9	3.7	4.4	5.1	4.5	3.2	3.0	2.9	2.6	3.5	3.7	4.8	4.1	3.7	3.3	3.0	2.2
Germany	12.5	11.6	13.4	15.7	17.6	19.1	18.7	17.0	15.3	7.9	8.0	8.7	10.0	11.2	11.1	9.9	8.2	7.2	4.3	4.1	4.2	5.0	5.4	5.5	4.8	3.8	3.3
Estonia	26.4	19.9	20	18.8	21.1	15.3	13.5	11.7	12.2	14.8u	13.4	10.3u	12.5	10.7	9.3u	6.3u	4.9	5.9u	5.0	8.0	4.7	5.4	6.0	4.0u	3.3u	:	3.0u
Ireland	8.1	6.5	7.0	7.3	7.8	7.4	7.1	7.7	10.0	3.0	3.0	3.7	3.9	3.9	3.9	4.1	4.4	6.1	1.8	1.7	2.3	2.7	2.3	2.5	2.5	2.7	3.4
Greece	9.5	9.1	8.6	8.0	9.6	9.0	8.3	7.8	7.6	15.1	13.6	13.1	12.3	12.4	11.9	10.7	9.8	8.8	8.1	7.7	7.2	6.8	7.9	7.9	7.3	7.1	6.3
Spain	15.3	11.7	12.5	12.9	12.9	11.1b	10.5	10.5	15.4	13.8	10.5	11.5	11.6	11.0	8.8b	8.1	8.1	10.6	10.9	7.9	8.8	8.3	8.3	6.8b	6.1	5.3	6.4
France	15.4	13.2	13.0	12.2	13.0	13.0	13.2	12.3	11.8	9.1	7.6	7.7	7.8	8.4	8.0	8.1	7.1	6.9	5.6	4.9	5.5	5.8	6.5	6.2	5.8	5.4	4.4
Italy	12.2	11.2	10.8	10.7	9.7b	9.3	8.2	7.5	8.6	10.7	9.2	8.8	8.2	7.2b	7.0	6.2	5.7	6.2	6.2	5.6	5.6	5.6	5.2b	6.1	5.3	4.5	4.6
Cyprus	6.6	5.4	4.1	5.2	6.6	6.3	5.1	5.1	5.2	5.5	3.9	3.7	3.9	3.8	5.6	4.6	4.0	3.7	2.9	2.8	2.4	3.8	3.1	4.5	4.4	3.4	3.0
Latvia	22.5	22.2	24.0	17.6	16.6	15.8	14.9	10.8	14.6	14.9	13.2	13.0	10.3	10.6	9.2	6.3	5.9	7.7	7.4	5.6	6.6	6.3	3.6	4.2	3.8	3.7	4.2
Lithuania	25.7	24.9	19.1	22.4	14.9	15.1	10.6	7.7	13.7	20.3	19.5	14.6	13.8	12.8	9.4u	6.5u	5.1u	6.7u	9.4	7.4	6.8	6.4	6.7	4.1u	2.6u	2.1u	3.0u
Luxembourg	3.7	2.5u	4.7u	4.0	7.0	6.4	6.6	5.8u	6.6	1.9	1.4u	1.5u	3.3u	4.4	3.8	4.5	3.4u	5.9	:	1.4	2.0	4.3	3.9	3.5	3.1	3.2	2.4
Hungary	11.6	11.2	11.4	12.4	12.5	14.4	16.7	17.5	18.9	6.5	5.3	5.1	5.4	5.4	6.9	6.9	6.6	7.2	1.4	1.2	1.8	1.4	2.2	2.7	2.8	2.9	2.8
Malta	7.2	8.0u	8	8.3u	9.2u	9.7	9	8.6	8.5	:	8.4	:	7.2	5.6	:	:	:	:	:	:	:	:	:	:	:	:	:
Netherlands	4.5	3.1	3.7	5.8	7.2	7.4	6.1	5.3	4.6	2	1.7	2.1	2.9	4.2	4.3	3.6	2.9	2.4	1.7	1.6	1.7	2.4	2.9	2.9	2.3	1.8	1.6
Austria	8.2	7.1	8.2	8.9	10.7b	10.4	9.4	8.8	8.1	4.2	3.6	4.8	4.2	4.5b	4.5	4.1	3.7	3.3	2.3	1.9	1.8	2.4	3.0b	2.7	2.6	2.5	1.8
Poland	23.4	25.9	28.1	28.0	30.3	29.0	23.7	16.5	12.8	17.1	19.5	21.2	20.9	20.4	19.2	15.0	10.3	7.6	5.4	5.7	6.6	7.1	7.3	7.2	6.0	4.7	3.8
Portugal	4.1	4.2	4.8	6.6	7.2	8.4	8.4	8.7	8.3	4.8u	4.4u	5.4	6.7	6.4	8.1	8.5	8.2	7.9	2.8	2.6	4.0	5.4	4.5	6.4	6.4	7.6	7.0
Romania	5.3	5.4	7.6b	7.1	9.8	8.0	9.0	8.6	8.6	9.5	8.6	10.0b	8.2	8.4	8.1	7.9	6.9	6.0	3.6	3.9	4.1b	3.4	3.1	3.9	3.8	3.0	2.7
Slovenia	11.5	9.8	9.4	11.2	10.1	10.2	8.4	7.4	6.6	7.0u	5.5u	6.1u	6.3u	6.1u	6.9u	6.6u	5.0u	4.4u	2.2	2.3	2.5	3.8	2.8	3.2	3.3	3.4u	3.4u
Slovakia	40.5	42.5	46.1	47.1	52.1	53.4	48.6	45.1	39.6	18.4	18.8	17.8	15.9	17	14.4	11.8	9.4	8.1	5.2	5.2	3.9	4.4	5.9	5	3.3	4.1	3.6
Finland	19.0	17.8	19.1	18.6	19.7	14.6	14.2	13.0	12.8	11.1	10.6	10.4	10.9	10.1	8.8	8.2	7.1	6.4	6.2	4.3	4.1	4.2	4.9	4.4	3.7	3.6	3.3
Sweden	8.4	8.0	8.1	8.8	10.3	14.4	13.9b	13.2	13.9	5.7	4.5	4.8	5.3	6.7	7.2b	6.3	5.3	5.3	3.0	2.3	2.7	3.5	4.0	4.8b	4.4	3.6	3.4
United Kingdom	9.0	7.8	8.3	7.7	7.8	8.0	9.2	9.6	10.4	5.1	4.1	4.3	4.4	4.3	4.6	5.3	5.2	5.6	2.5	2.2	2.7	2.6	2.4	2.6	2.8	2.6	2.9
Iceland	2.9	3.0	4.5	5.7	4.6	3.9	4.8	3.7	4.7	:	:	2.2	3.7	4.8	:	:	1.9	:	:	:	:	:	:	:	:	:	:
Norway	6.5	7.0	8.2	9.1	8.0	10.7	6.9	5.6	6.0	3.0	3.4	3.5	3.8	4.1	4.2	2.8	1.7	1.8	2.5	2.4	2.6	3.1	3.3	2.6	2.0	1.6	1.3

Data source: Eurostat (LFS), database extraction: 27 August 2009

(:) Missing or not available, (b) break in series, (u) Unreliable data.

(i) See information notes http://epp.eurostat.ec.europa.eu/cache/ITY_SDSS/EN/lfsq_esms.htm

(d) The unemployment rate is the number of unemployed as a percentage of the labour force (employed and unemployed). The unemployed are persons who: were without work during the reference period of the survey AND were available for work (i.e. could start a job within two weeks) AND had been actively seeking work during the past four weeks or had already found a job to start within the next three months.

Table 10: Unemployment rates, by highest level of education attained and age groups EU-27

	Age groups	2005				2006				2007				2008				2009
		I	II	III	IV	I												
Low educational attainment	15 - 24	21.7	21.8	21.7	21.3	21.8	21.4	21.2	20.2	20.7	20.4	19.9	18.8	20.0	21.0	21.2	22.0	25.3
	25 - 39	14.1	13.5	12.6	13.4	14.1	13.2	12.2	12.7	12.9	11.8	11.3	12.0	12.8	12.4	12.7	14.3	17.0
	40 - 64	9.1	8.5	8.2	8.8	9.0	8.2	8.0	8.2	8.2	7.5	7.4	7.6	8.1	7.9	7.7	8.6	10.2
	Overall	12.6	12.2	11.7	12.1	12.5	11.8	11.3	11.4	11.6	10.8	10.6	10.6	11.4	11.3	11.3	12.3	14.5
Medium educational attainment	15 - 24	18.2	17.1	16.8	16.8	16.7	15.1	15.0	15.0	14.2	12.9	13.2	12.9	12.6	12.1	12.7	13.6	16.2
	25 - 39	9.4	8.7	8.3	8.6	8.8	7.9	7.2	7.4	7.5	6.4	6.2	6.4	6.6	6.1	5.9	6.6	8.3
	40 - 64	8.0	7.5	7.1	7.3	7.5	6.6	6.3	6.3	6.2	5.6	5.1	5.2	5.4	5.0	4.7	5.1	6.2
	Overall	9.9	9.2	8.9	9.0	9.2	8.2	7.8	7.9	7.7	6.9	6.6	6.7	6.8	6.3	6.2	6.7	8.2
High educational attainment	15 - 24	13.4	12.5	15.6	14.6	13.7	11.9	14.6	13.3	11.2	10.0	12.6	11.4	9.7	10.1	13.3	12.9	12.6
	25 - 39	5.6	5.3	5.6	5.5	5.2	4.7	5.0	4.8	4.7	4.0	4.5	4.1	4.2	3.9	4.4	4.6	5.2
	40 - 64	3.6	3.6	3.5	3.6	3.5	3.3	3.2	3.2	3.0	2.9	2.8	2.8	2.7	2.7	2.6	2.7	3.2
	Overall	5.0	4.8	5.2	5.1	4.8	4.4	4.6	4.5	4.2	3.8	4.1	3.8	3.7	3.6	4.0	4.1	4.6

Data source: Eurostat (LFS), database extraction: 31 August 2009

(d) The unemployment rate is the number of unemployed as a percentage of the labour force (employed and unemployed). The unemployed are persons who: were without work during the reference period of the survey AND were available for work (i.e. could start a job within two weeks) AND had been actively seeking work during the past four weeks or had already found a job to start within the next three months.

**Table 11: Unemployment rates, by highest level of education attained and age groups
Member States, 2008**

	Low educational attainment				Medium educational attainment				High educational attainment			
	15 - 24	25 - 39	40 - 64	Overall	15 - 24	25 - 39	40 - 64	Overall	15 - 24	25 - 39	40 - 64	Overall
EU-27	21.1	13.0	8.1	11.6	12.8	6.3	5.1	6.5	11.6	4.3	2.6	3.8
Belgium	28.4	17.6	8.0	12.5	16.2	7.1	4.5	7.0	11.2	3.8	2.6	3.6
Bulgaria	28.1	16.1	12.2	14.9	9.6	3.9	3.9	4.5	:	2.5u	1.8u	2.3
Czech Republic	35.2	22.9	14.8	19.4	7.1	3.6	3.2	3.7	8.2u	1.9	1.2	1.7
Denmark	8.2	5.2u	3.1	5.3	6.2	2.5	2.2	2.9	:	2.3	2.0	2.2
Germany	13.5	19.7	14.3	15.3	8.0	6.7	7.3	7.2	:	3.1	3.3	3.3
Estonia	:	:	:	12.2u	10.3u	5.2u	5.2u	5.9u	:	:	:	3.0u
Ireland	23.7	13.0	6.1	10.0	11.2	5.9	3.4	6.1	7.6	3.3	2.5	3.4
Greece	19.0	9.0	5.7	7.6	23.3	9.2	4.9	8.8	24.6	9.7	1.7	6.3
Spain	29.7	16.3	11.2	15.4	19.6	10.3	8.1	10.6	15.9	7.2	3.9	6.4
France	29.5	14.9	7.7	11.8	16.3	7.4	4.2	6.9	9.7	4.2	3.7	4.4
Italy	23.3	10.0	6.0	8.6	19.9	6.3	3.0	6.2	23.8	7.2	1.3	4.6
Cyprus	9.2u	6.6u	4.1	5.2	8.3	4.0	2.2	3.7	10.1u	2.6	2.1u	3.0
Latvia	20.5u	13.6	11.3	14.6u	11.0u	7.5u	7.1	7.7	:	3.6u	4.2	4.2u
Lithuania	26.6	:	:	13.7	11.2	6.2	6.0	6.7	:	2.9	:	3.0
Luxembourg	22.4	7.0	3.4	6.6	15.5	6.3	3.8	5.9	11.6	2.2	2.3	2.4
Hungary	33.4	21.4	14.6	18.9	16.9	7.1	5.6	7.2	14.9	2.7	1.9	2.8
Malta	17.0	7.1u	6.5	8.5	:	:	:	:	:	:	:	:
Netherlands	7.2	3.8	3.3	4.6	3.6	1.8	2.3	2.4	:	1.2	1.9	1.6
Austria	12.1	11.4	4.1	8.1	5.7	3.2	2.7	3.3	:	2.0u	1.5u	1.8
Poland	20.6	14.3	10.2	12.8	16.9	6.7	6.0	7.6	16.8	4.4	1.1u	3.8
Portugal	15.8	8.7	6.9	8.3	14.3	6.7	6.6	7.9	27.3	7.8	:	7.0
Romania	20.3	9.4	4.6	8.6	17.5	5.4	4.2	6.0	20.4	2.5	1.2u	2.7
Slovenia	10.9u	8.5u	4.8u	6.6u	10.0u	4.0u	3.2u	4.4u	:	4.5u	1.6u	3.4u
Slovakia	62.5	53.0	29.1	39.6	14.6	8.1	6.7	8.1	15.5u	4.0	2.0u	3.6
Finland	26.7	10.5	7.3	12.8	11.2	6.0	5.1	6.4	:	3.5	3.1	3.3
Sweden	31.3	13.8	5.1	13.9	12.3	4.7	3.7	5.3	11.6u	3.7	2.9	3.4
United Kingdom	27.9	9.7	5.1	10.4	11.3	5.1	3.5	5.6	9.5	2.4	2.2	2.9
Iceland	9.7	:	:	4.7	:	:	:	1.9	:	:	:	:
Norway	10.2	6.0	2.6	6.0	4.2	1.9	1.1	1.8	:	1.7	:	1.3

Data source: Eurostat (LFS), database extraction: 27 August 2009

(-) Missing or not available, (b) break in series, (u) Unreliable data.

(d) The unemployment rate is the number of unemployed as a percentage of the labour force (employed and unemployed). The unemployed are persons who: were without work during the reference period of the survey AND were available for work (i.e. could start a job within two weeks) AND had been actively seeking work during the past four weeks or had already found a job to start within the next three months.

Table 12: Activity rates, by highest level of education attained and age groups EU -27

	Age groups	2000	2001	2002	2003	2004	2005	2006	2007	2008
Low educational attainment	15 - 19	45.2	44.9	44.9	44.9	45.8	44.1	43.8	43.1	43.2
	20 - 24	62.4	62.1	61.6	60.9	60.5	60.7	60.6	60.3	60.5
	25 - 39	86.1	85.9	85.8	85.6	85.4	85.6	85.8	85.7	85.9
	40 - 64	73.4	73.2	73.3	73.5	73.8	74.5	74.9	75.1	75.0
	Overall	75.5	75.2	75.2	75.2	75.2	75.4	75.6	75.5	75.6
Medium educational attainment	15 - 19	56.1	65.5	62.2	32.6	29.0	34.1	34.5	35.9	34.5
	20 - 24	69.2	69.6	70.7	72.1	71.8	71.5	71.4	71.3	71.9
	25 - 39	91.9	91.5	91.6	91.7	91.5	91.4	91.6	91.6	91.8
	40 - 64	84.3	84.4	84.3	84.6	84.9	85.2	85.5	85.7	85.2
	Overall	86.7	86.6	86.7	86.9	87.0	87.1	87.2	87.3	87.2
High educational attainment	15 - 19	23.6	20.6	20.0	19.6	19.3	19.9	19.9	20.3	20.1
	20 - 24	71.3	70.6	70.0	69.2	69.6	69.6	69.6	69.2	69.7
	25 - 39	75.2	74.6	74.8	75.4	75.7	75.0	75.4	75.1	75.3
	40 - 64	55.0	54.6	54.7	55.8	55.7	56.8	57.5	57.9	57.7
	Overall	55.6	53.9	53.6	53.9	53.7	54.1	54.4	54.5	54.4
Total	15 - 19	25.0	24.6	23.9	23.3	23.0	23.7	23.7	23.9	23.9
	20 - 24	65.0	64.9	64.6	64.1	63.9	64.1	64.0	63.7	64.0
	25 - 39	84.3	84.0	84.2	84.4	84.6	84.7	85.0	85.1	85.4
	40 - 64	66.8	67.0	67.3	68.2	68.7	69.8	70.5	70.9	71.4
	Overall	68.5	68.5	68.6	69.0	69.2	69.8	70.3	70.5	70.9

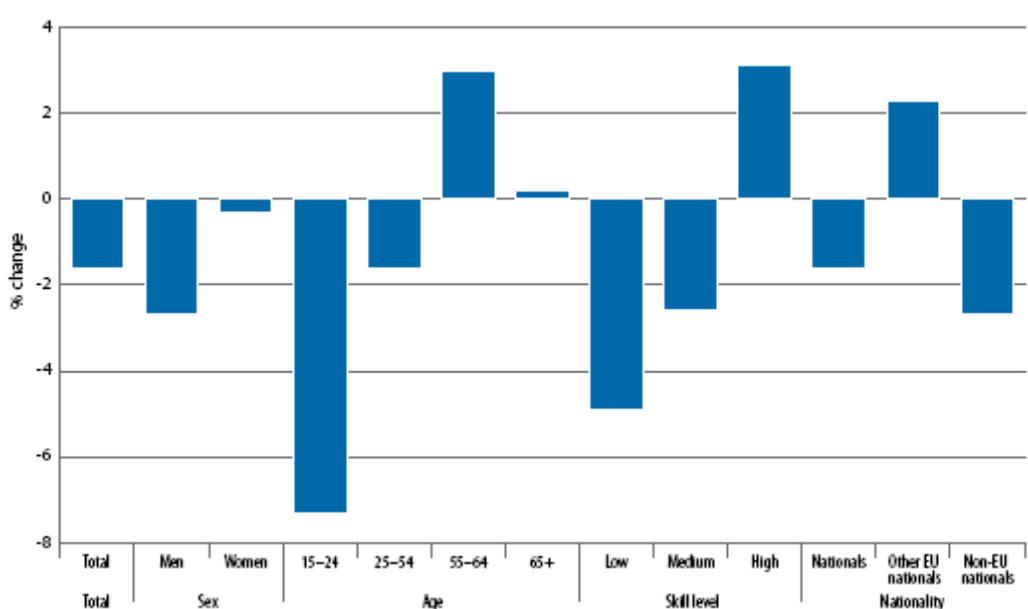
Data source: Eurostat (LFS), database extraction: 27 August 2009

(.) Missing or not available, (b) break in series, (u) Unreliable data.

(i) See information notes http://epp.eurostat.ec.europa.eu/cache/ITY_SDDS/EN/lfsq_esms.htm

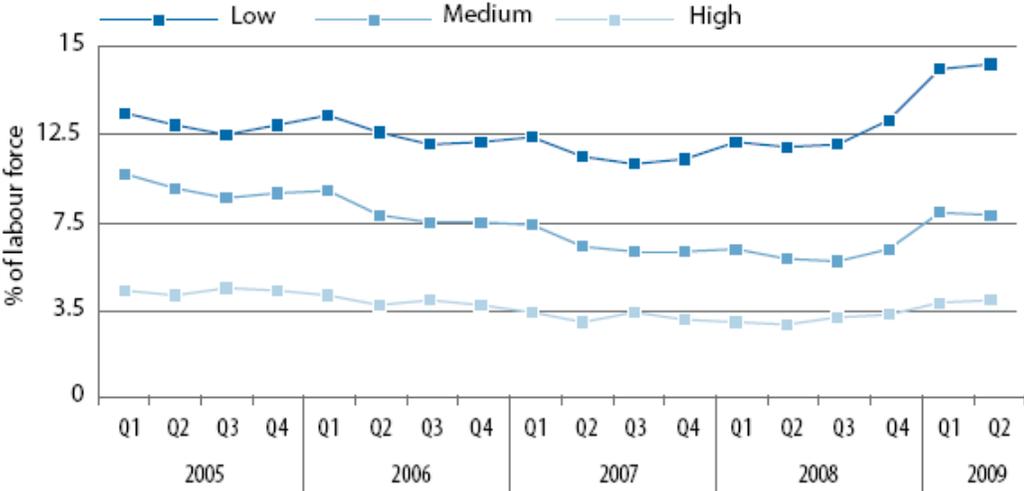
(d) The economically active population (labour force) comprises employed and unemployed persons. Activity rates represent active persons as a percentage of same age total population

Figure 10: Relative change in employment in the EU 2nd quarter 2008 – 2nd quarter 2009 by sex, age, skill level and nationality



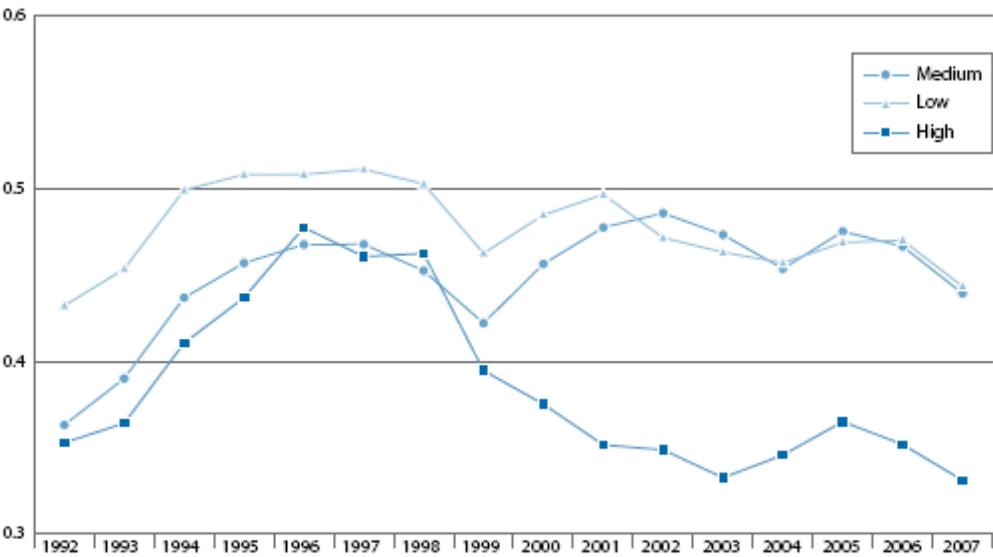
Source: Eurostat, EU LFS. Data non-seasonally adjusted.

Figure 11: Unemployment rates in the EU according to educational attainment



Source: Eurostat, LFS.

Figure 12: Incidence of long-term unemployment by education level (%)



Source: DG EMPL calculations based on EU LFS. Variable used: DURUNE.

**Table 13: Participation of older workers in lifelong learning
(Percentage of adult population aged 50-74 participating in education and training)**

	EU27	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT	LU	HU
2000	2.9 i	2.1	:	:	9.3	1	1.5 u	:	:	0.7	0.4	1.4	0.9 u	:	:	1.1 u	0.3
2003	3.3 i	3.1	:	1.9	9.5	1.7	1.8 u	4.9	0.5	1.4	2.6	1.1	2.4	2.6	1	2.1	1.2
2005	4.1	3.8	:	1.9	18.3	2.4	:	3.3	0.2	4.4	2.5	1.6	2	2.3	1.6	3	0.5
2006	4.2	3.4	:	2.2	21.7	2.4	2 u	3.7	0.2	4.6	2.9	1.8	3	1.9	1.3	2.8	0.5
2007	4.3	2.6 i	:	2.3	21.7	2.6	2.1 u	3.7	0.2	4.8	3	2	3.6	2.3	1.4 u	2.7	0.5

	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK	HR	MK	TR	IS	LI	NO
2000	:	6	2.6	:	0.4 u	:	1.7 u	:	8.7	13	14.6	:	:	:	15.2	:	7.6
2003	:	7.3	2.1	0.6	0.3 u	:	4.4	1.9	9.2	25.8	14.9	0.2 u	:	:	21.1	:	11.1
2005	2.4 u	7.4	5.9	1.1	0.6	:	5.6	2	13	12.7	21.7	:	:	:	15.5	:	10.3
2006	2.3 u	7.4	6.4	1.1	0.6	:	5.6	1.6	13.3	12.3	20.7	0.4 u	:	0.1	17.6	:	11
2007	2.2 u	8	6.2	1.1	0.9	:	5.4	1.7	13.7	12.2	11.9	:	:	0.1	16.7	:	10.2

Data source: Eurostat (LFS database), see notes table x.5

*MK= Former Yugoslav Republic of Macedonia

(:) Missing or not available, (b) Break in series, (d) See definitions, (e) Estimated data, (i) See information notes, (p) Provisional data, (u) Unreliable data

Table 14: Participation in continuing vocational training and average hours spent on CVT per employee in EU countries. 2005 (Participants in continuing vocational training courses as percentage of employees in all enterprises)

	Participants in CVT as % of employees	Average hours spent on CVT per employee
EU	33	9
Belgium	40	12
Bulgaria	15	4
Czech Republic	59	14
Denmark	35	10
Germany	30	9
Estonia	24	7
Ireland	49	12
Greece	14	3
Spain	33	9
France	46	13
Italy	29	7
Cyprus	30	7
Latvia	15	4
Lithuania	15	5
Luxembourg	49	16
Hungary	16	6
Malta	32	11
Netherlands	34	12
Austria	33	9
Poland	21	6
Portugal	28	7
Romania	17	5
Slovenia	50	14
Slovakia	38	12
Finland	39	10
Sweden	46	15
United Kingdom	33	7
Norway	29	9

Data source: Eurostat (CVTS)

Table 15: Participation of adults in lifelong learning
(Percentage of the adult population aged 25 to 64 participating in education and training)

25-to-64 year olds	as % of population of the same age-group (last 4 weeks)			Annual change (±%)
	2003	2007	2008	
	EU-27	8.5 i	9.5	
Belgium*	7	7.2	6.8	-4.5
Bulgaria	1.3	1.3	1.4	1.5
Czech Republic	5.1 i	5.7	7.8 i	7.1
Denmark	24.2 i	29.2	30.2	3.8
Germany	6 i	7.8	7.9	4.5
Estonia	6.7	7	9.8 i	6.6
Ireland	5.9 i	7.6	7.1	3
Greece	2.6 i	2.1	2.9	1.9
Spain	4.7	10.4	10.4	-0.3
France	7.1 i	7.5	7.3	0.4
Italy*	4.5	6.2	6.3	0.1
Cyprus*	7.9 i	8.4	8.5	9.7
Latvia	7.8	7.1	6.8	-2.4
Lithuania*	3.8	5.3	4.9	-3.4
Luxembourg	6.5 i	7	8.5	4.7
Hungary	4.5 i	3.6	3.1	-6.1
Malta*	4.2	6	6.2	7.5
Netherlands	16.4 i	16.6	17	0.6
Austria	8.6 i	12.8	13.2	7.4
Poland*	4.4	5.1	4.7	-1.3
Portugal*	3.2	4.4 i	5.3 i	4.4
Romania*	1.1	1.3	1.5	1.9
Slovenia	13.3 i	14.8	13.9	0.7
Slovakia	3.7 i	3.9	3.3	-1.9
Finland	22.4 i	23.4	23.1	0.5
Sweden	31.8 i	32.4 i	:	
United Kingdom	27.2 i	20	19.9	-5.1
Croatia	1.8	2.4	2.2	3
MK*	:	2.8	2.5	:
Turkey	:	1.5	1.8	:
Iceland	29.5 i	27	25.1	-2.7
Norway	17.1 i	18	19.3	2.1

Data source: Eurostat (LFS database),

*MK= Former Yugoslav Republic of Macedonia

(:) Missing or not available

(*) Due to the break in series, annual changes are calculated between 2004-2008 for: Belgium, Italy, Lithuania, Malta, Poland, Portugal, Romania, respectively between 2005-2008 for Spain and Cyprus

(i) See: [Eurostat database](#)

Table 16: Participation of adults in lifelong learning by age groups
(Percentage of the adult population aged 25 to 64 participating in education and training)

2008	Adults aged:		
	25 to 49	25 to 64	50 to 64
EU-27	11.6	9.5 i	5.7
Belgium	8.3	6.8	4
Bulgaria	2	1.4	:
Czech Republic	10	7.8 i	3.8
Denmark	33.7	30.2	24.3
Germany	10	7.9	3.9
Estonia	12	9.8 i	5.4
Ireland	8.3	7.1	4
Greece	4.1	2.9	0.6
Spain	12.5	10.4	5.5
France	9.2	7.3	3.9
Italy	8	6.3	2.9
Cyprus	10.2	8.5	4.7
Latvia	8.8	6.8	2.7
Lithuania	6.6	4.9	1.3 i
Luxembourg	10.4	8.5	4.3
Hungary	4.6	3.1	0.5
Malta	7.9	6.2	3.5
Netherlands	20.7	17	10.2
Austria	16.1	13.2	7.1
Poland	6.7	4.7	1.1
Portugal	7.2	5.3 i	1.5
Romania	2.2	1.5	:
Slovenia	17.9	13.9	6.3
Slovakia	4.4	3.3	1.2
Finland	28.1	23.1	15.5
Sweden	:	:	:
United Kingdom	22.3	19.9	15.3
Croatia	3.6	2.2	:
MK*	3.4	2.5	0.6 i
Turkey	2.3	1.8	0.2
Iceland	28.1	25.1	18.6
Norway	22.9	19.3	12.6

Data source: Eurostat (LFS), October 2009

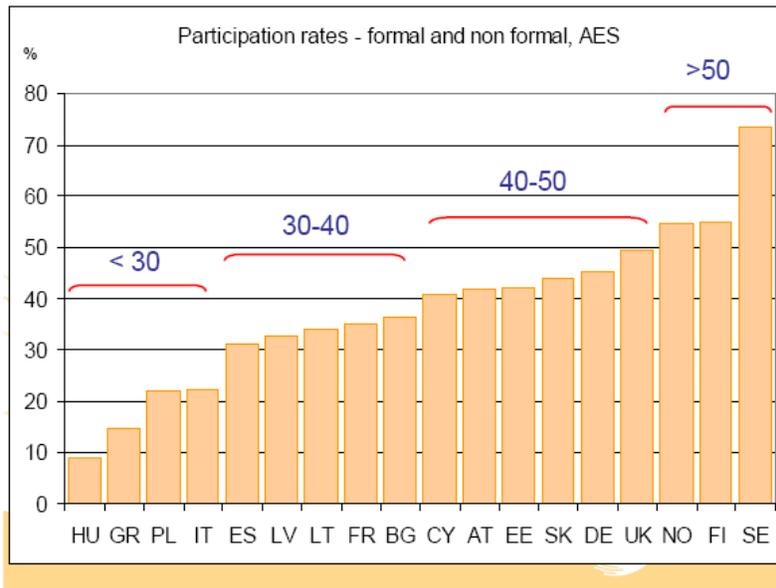
*MK= Former Yugoslav Republic of Macedonia

(:) Missing or not available, (i) See: [Eurostat LFS database](#)

(d) Lifelong learning refers to persons of the indicated age-groups

who stated that they received education or training in the four weeks preceding the survey (numerator). The denominator consists of the total population of the same age group, excluding those who did not answer to the question 'participation to education and training'. Both the numerator and the denominator come from the EU Labour Force Survey. The information collected relates to all education or training whether or not relevant to the respondent's current or possible future job.

Figure 13: Participation in formal & non-formal education of adults (25-64 years old) for EU Member States



Data source: Eurostat (AES)

European Commission

EUR 24147 EN – Joint Research Centre – Institute for the Protection and Security of the Citizen

Title: Towards a benchmark on the contribution of Education and Training to employability: a discussion note

Author(s): Elena Arjona Perez, Kornelia Kozovska and Christelle Garrouste

Luxembourg: Publications Office of the European Union

2010 – 48 pp. – 21 x 29,70 cm

EUR – Scientific and Technical Research series – ISSN 1018-5593

ISBN 978-92-79-15358-7

doi:10.2788/81837

Abstract

The present report has been commissioned by DG Education and Culture to the Centre for Research on Lifelong Learning (CRELL) in the context of the Council Conclusions on a Strategic Framework for European cooperation in Education and Training for the next decade (“ET 2020”), May 2009. Given the importance of enhancing employability through education and training in order to meet current and future labour market challenges, the Council invited the European Commission to submit a proposal for a possible European benchmark in this area by the end of 2010. The objective of this note is to discuss possible indicators to measure the contribution of E&T to employability and the potential for a benchmark in this field. It analyses the importance of enhanced employability in relationship to current and future challenges (demographic, economic, etc.), proposes a working definition of employability and a framework for discussion and analyses the role of E&T systems at various stages of an individual’s working life, suggesting possible related indicators. Furthermore, the report discusses methodological issues related to the type and scope of the benchmark and provides a number of questions for reflection.

ACKNOWLEDGMENTS

The authors are grateful for the very useful comments received from L. Jakobsen, L. Davoine and A. Hingel (DG EAC); C. Maier, M. Labarile, T. Bisopoulos, S. Stetter, C. Duchemin and M. Mcintosh (DG EMPL); A. Stimpson, K. Nestler and Van Loo (Cedefop); S. Jouhette (Eurostat).

How to obtain EU publications

Our priced publications are available from EU Bookshop (<http://bookshop.europa.eu>), where you can place an order with the sales agent of your choice.

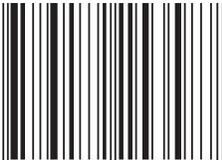
The Publications Office has a worldwide network of sales agents. You can obtain their contact details by sending a fax to (352) 29 29-42758.

The mission of the JRC is to provide customer-driven scientific and technical support for the conception, development, implementation and monitoring of EU policies. As a service of the European Commission, the JRC functions as a reference centre of science and technology for the Union. Close to the policy-making process, it serves the common interest of the Member States, while being independent of special interests, whether private or national.

LB-NA-24147-EN-C



ISBN 978-92-79-15358-7



9 789279 153587