



**HAL**  
open science

## Towards a benchmark on the contribution of Education and Training to employability: In-depth analysis of key issues.

Elena Arjona Perez, Christelle Garrouste, Kornelia Kozovska

### ► To cite this version:

Elena Arjona Perez, Christelle Garrouste, Kornelia Kozovska. Towards a benchmark on the contribution of Education and Training to employability: In-depth analysis of key issues.. [Research Report] European Commission's Joint Research Centre (JRC). 2010. hal-03245337

**HAL Id: hal-03245337**

**<https://hal.science/hal-03245337>**

Submitted on 1 Jun 2021

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



# **Towards a benchmark on the contribution of Education and Training to Employability: In-depth analysis of key issues**

Elena Arjona Perez, Christelle Garrouste and Kornelia Kozovska

EUR 24624 EN 2010

# **Towards a benchmark on the contribution of Education and Training to Employability: In-depth analysis of key issues**

**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@ec.europa.eu](mailto:elena.arjona-perez@ec.europa.eu)  
[christelle.garrouste@jrc.ec.europa.eu](mailto:christelle.garrouste@jrc.ec.europa.eu)  
[kornelia.kozovska@jrc.ec.europa.eu](mailto: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 60799

EUR 24624 EN  
ISBN 978-92-79-18698-1  
ISSN 1018-5593  
doi:10.2788/49575

Luxembourg: Publications Office of the European Union

© European Union, 2010

Reproduction is authorised provided the source is acknowledged

*Printed in Italy*



## TABLE OF CONTENTS

<b>INTRODUCTION .....</b>	<b>4</b>
<b>PREPARATION FOR EMPLOYMENT.....</b>	<b>5</b>
<b>1. VOCATIONAL EDUCATION AND TRAINING .....</b>	<b>5</b>
1.1 POLICY IMPORTANCE .....	5
1.2 ANALYSIS .....	7
1.3 DATA .....	10
1.3.1. DATA QUALITY ISSUES.....	12
1.4 POSSIBLE BENCHMARK INDICATORS .....	13
<b>TRANSITION FROM EDUCATION TO WORK .....</b>	<b>15</b>
<b>2. TRANSITION DURATION.....</b>	<b>15</b>
2.1 POLICY IMPORTANCE .....	15
2.2 ANALYSIS .....	16
2.2.1. DEFINITION OF FIRST (SIGNIFICANT) JOB .....	16
2.2.2. DEFINITION OF TARGET GROUP .....	17
2.2.3. DEFINITION OF TIME PERIOD .....	18
2.3 DATA .....	19
2.3.1. DATA QUALITY ISSUES.....	20
2.4 POSSIBLE BENCHMARK INDICATOR .....	20
<b>3. (MIS)MATCH.....</b>	<b>22</b>
3.1 POLICY IMPORTANCE .....	22
3.2 ANALYSIS .....	24
3.2.1. DEFINITION OF TIME PERIOD .....	24
3.2.2. DEFINITION OF TARGET GROUP .....	25
3.3 DATA .....	25
3.3.1. DATA QUALITY ISSUES.....	25
3.4 POSSIBLE BENCHMARK INDICATORS .....	26
<b>EDUCATION FOR MAINTAINING EMPLOYABILITY .....</b>	<b>29</b>
<b>4. PARTICIPATION IN LLL OF OLDER AND LOW QUALIFIED WORKERS.....</b>	<b>29</b>
4.1 POLICY IMPORTANCE .....	29
4.2 ANALYSIS .....	31
4.1 DATA .....	34
4.1.1. DATA QUALITY ISSUES.....	34
4.2 POSSIBLE BENCHMARK .....	35
<b>5. RETURNS TO FORMAL EDUCATION AT A LATER AGE .....</b>	<b>37</b>
5.1 POLICY IMPORTANCE OF THE AREA .....	37
5.2 ANALYSIS .....	37
5.3 DATA .....	40

5.3.1. DATA QUALITY ISSUES .....	42
5.4 POSSIBLE BENCHMARK INDICATOR .....	42
<b>THE CORE INDICATORS OF THE ET 2020 STRATEGY AND EMPLOYABILITY .....</b>	<b>44</b>
PROFESSIONAL DEVELOPMENT OF TEACHERS AND TRAINERS .....	45
INVESTMENT IN EDUCATION AND TRAINING .....	46
SPECIAL NEEDS EDUCATION (SEN) .....	46
CROSS-NATIONAL MOBILITY OF STUDENTS IN HIGHER EDUCATION .....	47
EARLY CHILDHOOD EDUCATION.....	47
EDUCATIONAL ATTAINMENT LEVEL .....	48
UPPER SECONDARY COMPLETION RATES OF YOUNG PEOPLE .....	48
HIGHER EDUCATION GRADUATES .....	49
EARLY LEAVERS FROM EDUCATION AND TRAINING.....	49
ADULT PARTICIPATION IN LIFELONG LEARNING .....	50
ADULTS' SKILLS.....	51
INDICATOR ON MATHEMATICS, SCIENCE AND READING LITERACY .....	51
LANGUAGE SKILLS .....	52
ICT SKILLS.....	52
CIVIC SKILLS .....	53
LEARNING TO LEARN SKILLS .....	53
<b>REFERENCES .....</b>	<b>55</b>

## LIST OF FIGURES

<i>Figure 1.1: Students in vocational programmes at ISCED 3 level.....</i>	<i>8</i>
<i>Figure 1.2: Eurostat sources that collect data on VET.....</i>	<i>11</i>
<i>Figure 2.1: Activity rates of young people, by age group (2007).....</i>	<i>18</i>
<i>Figure 2.2: Percentage of graduates in unemployment two years after graduation.....</i>	<i>21</i>
<i>Figure 2.3: Unemployment rate of persons aged 20-34, ISCED 5-6, .....</i>	<i>22</i>
<i>Figure 3.1: Percentage of individuals with tertiary education employed in a matched job, by age cohort. 26</i>	
<i>Figure 3.2: Percentage of cohorts with below tertiary education (ISCED 0-4) employed in a skilled job.. 27</i>	
<i>Figure 3.3: Distribution of persons by qualification mismatches .....</i>	<i>28</i>
<i>Figure 4.1: Participation of the employed population in lifelong learning by ISCED level .....</i>	<i>32</i>
<i>Figure 4.2: Percentage of the low-skilled workers in total population .....</i>	<i>33</i>
<i>Figure 4.3: Participation rate in LLL of older adults (55-64), 2009.....</i>	<i>36</i>
<i>Figure 5.1: Annual gross income of workers in Euros, by education level.....</i>	<i>38</i>
<i>Figure 5.2: Training of older workers and expected pay back period<sup>a</sup> .....</i>	<i>39</i>
<i>Figure 5.3: Share of higher education graduates among the 30-34 year-old population .....</i>	<i>41</i>
<i>Figure 5.4: 30+ higher education graduates as a percentage of total graduates.....</i>	<i>41</i>
<i>Figure 5.5: Net entry rate into higher education (ISCED 5A), by age group (30-34, 35-39) .....</i>	<i>42</i>

## LIST OF TABLES

<i>Table 1.1: Employment rates and educational attainment, by gender (2007).....</i>	<i>9</i>
<i>Table 1.2: Unemployment rates and educational attainment, by gender (2007).....</i>	<i>9</i>
<i>Table 2.1: Average duration of the transition from school to work in Europe, 1994-2000 .....</i>	<i>19</i>

## INTRODUCTION

*“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”* (Council Conclusions of 12 May 2009 on “Education and Training 2020”, 2009/C 119/06). Following this request, the Directorate-General for Education and Culture (DG EAC) commissioned to the Centre for Research on Lifelong Learning (CRELL) a series of analyses of the contribution of Education and Training systems (E&T) to employability.

The first CRELL report proposed an analytical framework and indicators to measure E&T systems provision of essential skills, facilitation of the school-to-work transition and support of lifelong learning (LLL), (Arjona Perez, Garrouste and Kozovska, 2010). Based on this study, the Member States Expert Group on Education for Employability Benchmark identified the following areas as of particular policy interest: i) Vocational Education and Training (VET) and its role in supplying skills that are valued in the labour market; ii) the duration of the transition from education to work and the (mis)match between education and occupation; iii) participation in LLL of older and low qualified workers and returns to education.

The Expert Group requested an in-depth analysis of each of the above topics focused on data availability and a list of indicators for a possible benchmark. The present report is a compilation of the resulting work: Section 1 evaluates VET, Section 2 discusses challenges related with the transition school-to-work, Section 3 assesses the contribution of E&T for maintaining employability and Section 4 evaluates the suitability of the existing E&T 16 core indicators as measures of the contribution of E&T systems to employability. Sections 1 to 3 are structured in the same way: a) policy importance of the specific topic, b) analysis of the main determinants and c) proposals of benchmark indicators. The report was presented at the second meeting of the Expert Group held in Brussels on 30 April 2010.

# PREPARATION FOR EMPLOYMENT

## 1. VOCATIONAL EDUCATION AND TRAINING

Vocational Education and Training (VET) is the educational choice of 50% of upper secondary students. The majority of the labour force is in jobs for which secondary education is required, but there is an increasing demand for higher skills across all occupations (Cedefop, 2010a). VET therefore plays a key role in supplying both specific vocational skills in quickly expanding fields and traditional trades (OECD, 2010 forthcoming) as well as basic cognitive skills valued everywhere in the labour market.

From the perspective of the students, VET offers today a wide range of opportunities to satisfy different education demands (especially in countries with strong VET systems). In some cases, initial VET (IVET) pathways are evolving towards continuation of vocational studies beyond secondary education to post-secondary and tertiary levels. It should also constitute one good opportunity to acquire valuable skills for those coming from other streams of the E&T system (upper secondary general education or drop-outs from tertiary education).

### 1.1 POLICY IMPORTANCE

#### *Upper secondary education*

The increased demand for higher skills (as forecasted by Cedefop, 2010a) makes upper secondary education a minimum requirement for access to the labour market. Individuals who leave education and training without having obtained that level of qualification have more difficulties in finding a job and experience higher unemployment rates<sup>1</sup>.

As stated by the Council Conclusions of May 2003 (2003/C 134/02), there is a need to raise to 85% the share of the population of 20-24 years-olds having attained at least upper secondary (in 2008, it was at 78,5%). The Council Conclusions of May

---

<sup>1</sup> For data on activity, employment and unemployment rate by level of educational attainment, see tables Ann II. 11-16 (European Commission, 2009a) and Indicators A6 and A7 (OECD, 2009a).

2009 on Education and Training (ET 2020, 2009/C 119/02) reminded of the importance of lowering to 10% (from 14,9% in 2008) the percentage of young people (18-24 year-olds) who have left school without an upper secondary qualification. This target is now one of the benchmarks of the Europe 2020 strategy (EUCO 7/10).

The fact that, on average across OECD countries, 14% of the 20-24 year-olds with below upper secondary educational attainment are not in education, employment or training (NEETs) remains a policy concern<sup>2</sup>. Among those in the same age group with upper secondary education the rate of NEETs falls to 6,1%.

### *Vocational Education and Training*

VET is education and training that enables people to acquire knowledge, know-how, skills and/or competences required for particular occupations or more broadly on the labour market. "Successful completion of such programs normally leads to a labour market relevant vocational qualification" (UNESCO, 2008, p. 23).

Promoting access to VET *a)* for those that have chosen it as a first option, *b)* for early leavers from E&T, *c)* those having finished upper secondary and not in employment and *d)* those dropping out from tertiary education and not finding a job, seems an adequate policy strategy to increase employability of the youth.

Modernising VET was one of the political priorities of the Education & Training 2010 policy strategy. The ET 2020 strategy (2009/C 119/02) mentions VET within the context of promoting equity, social cohesion and active citizenship calling for closer cooperation between general and vocational education sectors as a preventive approach to early leaving from E&T. Within the overall strategy for the next 10 years, Europe 2020, the European Council of March 2010 (EUCO 7/10) has highlighted the importance of flexible learning pathways and the need to reinforce the attractiveness of VET in order to improve the employment situation of young people<sup>3</sup>.

The Copenhagen process has focused on the creation of key tools for transparency and recognition of knowledge, skills and competences<sup>4</sup>. Increasing

---

<sup>2</sup> Indicator C3 (OECD, 2009a)

<sup>3</sup> Initiatives "Youth in the move" and "New Skills and New Jobs" mentioned in Europe 2020 Strategy (COM(2010) 2020).

<sup>4</sup> Such as the European Qualifications Framework (EQF), the European Credit system for VET (ECVET) and the European Quality Assurance Reference Framework (EQARF)

participation and improving quality and flexibility of VET are also key policy objectives. The Bordeaux Communiqué (2008, p. 11) proposes “improving the links between VET and the labour market” to contribute to “greater employability”. To that aim, it suggests identifying potential skills gaps and shortages and responding to the future skills and competence needs.

The OECD initiative “Learning for Jobs” launched in 2007 seeks to help countries to improve their VET systems in order to meet labour market needs as well as students preferences. The OECD has conducted individual policy reviews of VET in 14 countries and produced the initial version of a comparative report (OECD, 2010, forthcoming).

## **1.2 ANALYSIS**

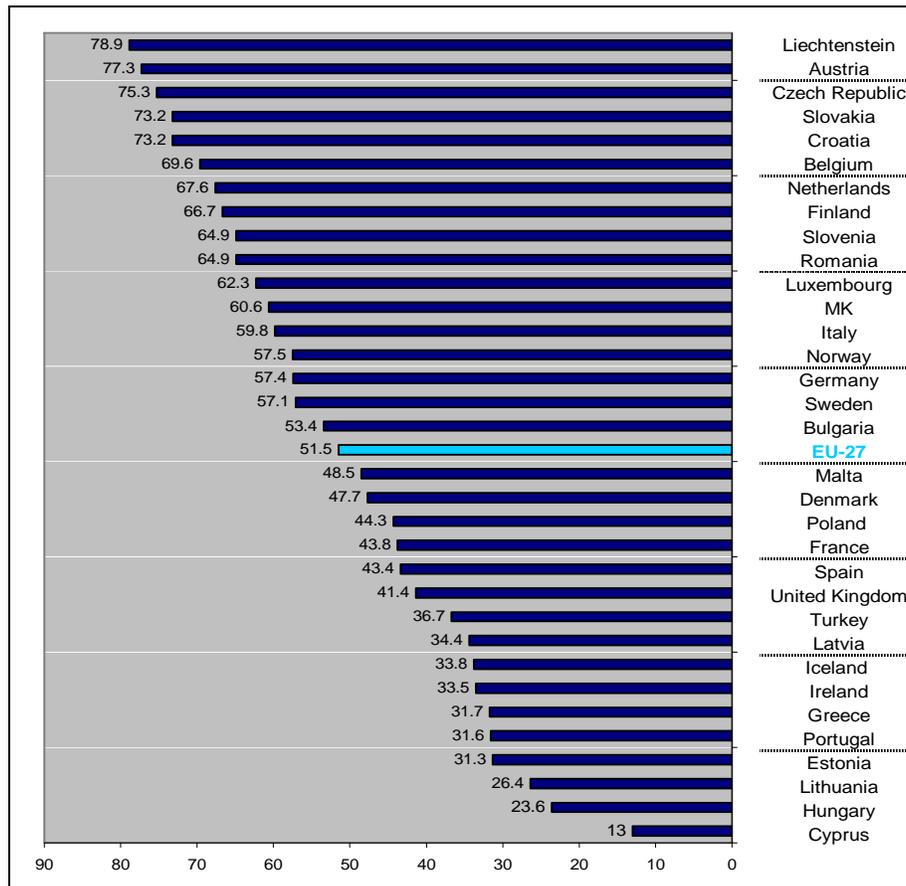
### *Participation*

In 2007, the proportion of students that were enrolled in vocational programmes at upper secondary level (ISCED 3) was 51,5% on average across EU-27 countries. Austria, the Czech Republic, Slovakia, Belgium, the Netherlands and Finland all show high VET participation rates. Vocational programs seem far less attractive to students in Cyprus, Hungary, Lithuania, Estonia, Portugal, Greece and Ireland. On average across EU27 countries, 46% of 2007 students enrolled in vocational programs at upper secondary education were females<sup>5</sup> (European Commission, 2009a).

---

<sup>5</sup> With wide differences by fields of education.

**Figure 1.1: Students in vocational programmes at ISCED 3 level as a percentage of all ISCED 3 students (2007)**



Source: European Commission, 2009a- Data source: Eurostat (UOE)

### *Employability*

Does VET lead to better employability? There is little research on the extent to which the *skills* provided by VET do meet the labour market demands. Analysing the data from PISA 2003 and 2006, Kuczera (2008) found that VET students have lower performance in science. Most studies restrict themselves to labour market outcomes in terms of earnings (Cooke, 2003; Fersterer and Winter-Ebmer, 2003; Ryan, 2001).

It would be interesting to compare (specially for young cohorts) the activity, employment and unemployment rates as well as transition rates of, on the one hand, graduates from VET and, on the other hand, a) those having attained only primary education, b) those who graduated from other streams of upper secondary education and c) higher education graduates (of the same age). At European level, lack of adequate data is a major constraint (see discussion on data below). The OECD

(2009a) data shows that the employment rate of those with ISCED 3C (short) remains below the employment rate of adults having completed ISCED 3C long / 3B and those with ISCED 3A.

**Table 1.1: Employment rates and educational attainment, by gender (2007)**

*Number of 25-64 year-olds in employment as a percentage of the population aged 25 to 64, by level of education attained and gender*

		Pre-primary and primary education	Lower secondary education	ISCED 3C Short	Upper secondary education		Post-secondary non-tertiary education	Tertiary education		All levels of education
					ISCED 3CLong/3B	ISCED 3A		Type B	Type A and advanced research programmes	
OECD average	<i>Males</i>	63.1	73.7	82.4	84.4	83.7	85.9	88.1	89.7	82.7
	<i>Females</i>	38.5	50.8	63.6	65.6	67.0	73.5	79.2	79.9	64.9
EU19 average	<i>Males</i>	58.4	70.8	80.8	82.6	82.8	84.7	86.3	89.4	80.8
	<i>Females</i>	35.9	49.0	60.2	65.4	68.4	71.6	80.1	81.9	65.0

*Source: OECD. Education at a Glance 2009 Table A6.1a.*

*Employment rate: number of persons in employment as a percentage of the population of working age.*

**Table 1.2: Unemployment rates and educational attainment, by gender (2007)**

*Number of 25-64 year-olds in unemployment as a percentage of the labour force aged 25 to 64, by level of education attained*

		Pre-primary and primary education	Lower secondary education	ISCED 3C Short	Upper secondary education		Post-secondary non-tertiary education	Tertiary education		All levels of education
					ISCED 3CLong/3B	ISCED 3A		Type B	Type A and advanced research programmes	
OECD average	<i>Males</i>	10.1	8.8	5.1	4.7	4.4	4.7	3.3	3.0	4.7
	<i>Females</i>	13.1	10.2	6.5	7.3	5.7	8.1	4.0	3.7	5.8
EU19 average	<i>Males</i>	11.7	10.4	6.8	5.0	4.5	5.1	3.5	3.1	5.1
	<i>Females</i>	16.4	12.3	8.6	7.7	6.0	8.5	4.6	3.8	6.8

*Source: OECD. Education at a Glance 2009 Table A6.3a.*

*Unemployment rate: unemployed persons as a percentage of the civil labour force.*

There is a clear need for more research devoted to the job prospects of workers with VET background (compared with those with general education background). Some issues of interest are the speed of transition from school to work and the degree of work insecurity (especially in case of short term adverse labour conditions).

Data shows that accumulation of skills through experience can compensate for lack of tertiary education. On average across OECD countries, the proportion of the

age cohort in skilled jobs among those with below tertiary education increases by 3 percentage points between the 25-34 and 45-54 year-olds. However, in Austria, Finland and Germany less experienced workers appear to be advantaged in finding a skilled job (among those with below tertiary education) (ibid.). Those are countries where students are more likely to graduate from vocationally-oriented upper secondary programs. Many Finish graduates from VET enter the labour market straight after the completion of their studies. However, the university entry rates in Germany and Austria are below the OECD average, suggesting that the increasing demand for higher educated individuals is not matched by adequate supply, driving upwards the intake of secondary-educated workers<sup>6</sup>.

### 1.3 DATA

According to Cedefop (2008), ten Eurostat sources collect variables that can be relevant to VET (see Figure 1.2). Information lost due to the suspension in 2001 of the VET data collection includes destination of participants directly after successful completion of this program. Likewise, there is no data on salary/wage implications as a result of participation in the program.

The Adult Education Survey (AES) is an additional source of information. It offers data on participation in formal and non-formal learning, as well as the reasons, costs, and obstacles for doing so. However, the survey is in the pilot phase (in 2005-2008) and it will be undertaken every five years, covering only 26 EU countries and the population between 25 and 64 year-olds (whereas the majority of the students in initial VET are 15-19 year-olds).

---

<sup>6</sup> Many students who achieve qualifications designed for university level entrance do not in fact take up university studies: there is a difference of four percentage points between graduation rates in those programmes and university entry rates, with significant variations across OECD countries (OECD, 2009a, Table A2.1 and Table A2.4 or chart A2.2). There is also a need to allow for those not starting or dropping out from tertiary education to be provided with the possibility of accessing vocational training.

**Figure 1.2: Eurostat sources that collect data on VET**

Eurostat source	Collects VET data
Continuing vocational training survey (CVTS)	x
Unesco-UIS/OECD/Eurostat (UOE) data collection on education systems	x
EU labour force survey (LFS)	x
EU labour force survey (LFS) ad hoc modules on LLL	x
EU labour force survey (LFS) ad hoc module on transition from school to working life	
EU statistics on income and living conditions (EU-SILC)	
Eurostat harmonised European time use surveys (HETUS)	
EU labour cost survey (LCS)	x
EU labour-market policy (LMP) database	x
European system on social protection on statistics (ESSPROS)	x
Eurostat harmonised household budget survey (HBS)	
National health interview surveys	
Structural business statistics (*)	x
European system of national accounts	
Community survey of ICT usage in households	x
Community innovation surveys (CIS)	x

(\*) The structural business statistics data collection stopped covering data on VET from 2002 following a change in the methodology. Prior to 2002, it collected only one question related to VET, which was on the number of apprentices in enterprises.

*Source: Cedefop (2008)*

Among Eurostat's sources, the Labour Force Survey (LFS) does provide data on highest level of education attained and participation in education or training (in the 4 weeks before the survey), but there is no clear separation between general and vocational education.

The UOE (UNESCO/OECD/Eurostat) collects harmonised data on number of students by level of education, programme orientation (general or vocational), programme destination, intensity of participation, gender and age. There is also data on type of institution. It is also possible to know whether the course combines study and work-based elements<sup>7</sup>.

However, data on vocational programs at ISCED 2 (lower secondary) and 4 (post-secondary not tertiary<sup>8</sup>) is sometimes not available for all countries. Data on students in ISCED 3 vocational programs is, therefore, usually taken to evaluate participation in initial VET.

<sup>7</sup> Indicator C1 and Indicator C3 (OECD, 2009a).

<sup>8</sup> In most countries, post-secondary non-tertiary programmes are vocationally oriented (i.e over 90% of students at ISCED level 4 follow vocational programmes).

### 1.3.1. DATA QUALITY ISSUES

Eurostat data sources try to maintain the same definitions. It is however difficult to compile data from different sources, as there is a great deal of divergence in concepts and definitions used in relation to VET. Some sources collect data on two ISCED levels together. Several policy documents have called for improving the scope, comparability and reliability of VET statistics<sup>9</sup>.

At Eurostat, the Task Force on Educational Variables in Household Surveys, in cooperation with Cedefop, is working to increase the availability of VET comparable data at EU level. At the occasion of the 2009 LFS ad-hoc module on entry of young people into the labour market, a new variable has been included to measure VET educational attainment<sup>10</sup>. First results are expected by the end of 2010. This variable will also be in the AES for programmes attended in the last 12 months (and it will be optional for educational attainment). Work is also in progress to include one additional item in the LFS separating apprentices from the rest of workers.

UOE data on VET excludes some types of vocational training. With the data available, it is difficult to evaluate whether the programme provides participants with the full set of competences necessary for employment. According to Cedefop (2008), by using ISCED 97, the UOE established auxiliary criteria as proxies, including the degree to which the programme is specifically oriented towards a class of occupations or trades and is generally oriented towards an immediate transition to the labour market. Although graduation rates do not capture the quality of educational outcomes, it gives an indication of how many students the E&T have trained to meet the minimum requirements of the labour market.

The upcoming revision of the ISCED classification and its implementation in surveys from 2014 should be taken into account when defining potential indicators. It is expected that education programs will be classified according to their orientation, establishing a clear separation between general and vocational. These developments

---

<sup>9</sup> Council conclusions of May 2005 (2005/C 141/04), the Helsinki Communiqué (2006), the Bordeaux Communiqué (2008).

<sup>10</sup> It will include the variable HATVOC, Orientation of the highest level of formal education attained, everybody aged 15-34, options (1) general education (2) Vocational education mainly school based (3) Combination of workplace based vocational education (4) Vocational education, with no distinction possible between ISCED levels 2,3 and 4.

will contribute to the availability of information on VET, although they will impact on the comparability of new data with the existing one.

The development of an indicator on VET could provide a unique opportunity to address gaps at the European level by creating demand for harmonized collection of existing data at national level (for instance, program orientation of highest level of education attained).

#### **1.4 POSSIBLE BENCHMARK INDICATORS**

Although it does not include any explicit indicator on Vocational training, the coherent framework of indicators and benchmarks (COM(2007)61 final) addresses progress in VET with some of the 16 core indicators, broken down by vocational stream (for example: participation of adults in lifelong learning, participation in upper secondary education, early leavers from education). This information is completed with data on number of students in ISCED 3 vocational programs as a percentage of all ISCED 3 students (which provides an indicator on the attractiveness of VET). The Commission has proposed the creation of a task force to develop a core indicator in VET as part of the coherent framework of indicators and benchmarks.

The meeting of the Expert Group on Education for Employability Benchmark of March 2010 concluded that the assessment of the contribution of E&T to the acquisition of skills was an issue of policy relevance, but that data on competences was not readily available to be used for benchmarking. In this context, it could be considered adopting as indicator “the employment rate of young people by level and program orientation of education”, using the data that the LFS 2009 ad-hoc module will make available by the end of 2010. If the usefulness of this indicator is further confirmed, the inclusion of a mandatory variable in the LFS (discriminating by educational orientation) could be considered. As an outcome indicator, the proposed measure would gauge the contribution of E&T to employability, proxied by the employment status of young people (that is, recently graduated from initial vocational education).

An alternative indicator could be the “share of young people (for example, 15-19 years-olds or 15-24 years-olds) having participated/completed ISCED 3c (VET) as”

a percentage of the total population having participated/completed upper secondary education”.

An additional issue that is interesting to consider is the graduation rates or the drop-out rates in VET (compared with those of the general education stream). However, comparable data at EU level is scarce, leading, once again to the conclusion that much data source development is required in the area of VET.

# **TRANSITION FROM EDUCATION TO WORK**

The integration of young people in the labour market is a major policy issue in the EU. The European Employment Guidelines, part of the Growth and Jobs package adopted by the European Council in 2005, call for stronger efforts to build employment pathways for young people and reduce youth unemployment. The attention given to policies targeting young people has been strengthened further with the adoption of the European Youth Pact in 2005 (Eurostat, 2009a). Within the European Commission Work Programme for 2010, the strategic initiative 13 on a communication on “Youth employment” explicitly focuses on a policy response to increase job opportunities for young people, promote apprenticeships and training and improve transition from education to work (European Commission, 2010b).

## **2. TRANSITION DURATION**

### **2.1 POLICY IMPORTANCE**

The transition from school to work, frequently defined as the period between the end of an individual’s primary involvement in education and training and his stable settlement in a work position (Müller and Gangl, 2003), is a critical period in the life of young people. A transition from education to first job associated with a long period of unemployment could have significant adverse implications for future labour market outcomes in terms of future earnings and work experience as well as for future family life in terms of delaying or preventing departure from the parental home, setting up a family and having children (Korpi et al., 2003).

As Müller and Gangl (2003) point out, from a macro-perspective the pattern of individual transitions reflects the integration of young people into the labour market. The transition process has two important dimensions – the duration and the match, or the quality of the job obtained. The high rates of youth unemployment in recent decades and especially in the past couple of years, due to the economic crisis, create long-term consequences for the future of young people.

The duration of transition gives important indication as to the dynamics and level of interaction of the education and training (E&T) systems and the labour market. Low time interval between education and a first (significant) job could be a good indication of the responsiveness of the E&T systems to labour market demands in terms of occupational profiles. Decrease in the time period between leaving education and entering the labour market means better opportunities for young people, a group that shows high unemployment rates in initial transition from education to work.

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 the transition process for certain groups. However, difficulty in having internationally comparable data on such aspects makes a monitoring exercise very difficult. As an alternative, the impact of E&T systems can be measured by outcome indicators such as the length of the duration of transition from education to work.

## 2.2 ANALYSIS

An accurate indicator for transition duration would monitor the employment status of people who are officially out of education and training. Some considerations need to be made in the construction of a single indicator on transition duration:

- a choice on **the definition of first (significant) job** – activity in general or a more precise definition of the type of job (self-employment, permanent, full-time, etc.);
- a choice on **the target group** to monitor - by age group, ISCED level;
- a choice on **the time period** – monitor a cohort of graduates in the last year/last three years/last five years.

### 2.2.1. DEFINITION OF FIRST (SIGNIFICANT) JOB

There are a number of options for the definition of a *first* job after obtaining highest educational diploma/degree – first job (of any type), i.e. activity in general; first full-time/part-time job; first permanent/temporary job.

A choice of activity in general is operational and easily measurable as most surveys have a labour status question on employment/unemployment/inactivity. However, it does not convey any information as to the quality of the job, i.e. whether it is part-time or full-time, the type of contract, etc. Monitoring with an indicator constructed with that choice will imply a goal of getting people into work without attention being paid on quality aspects of their employment.

A distinction based upon the type of contract (permanent vs. temporary) is closely related to the various degrees of labour market segmentation between temporary and permanent jobs across Member States. Quintini et al. (2007) find that transition to a permanent job ranges from under two years in Denmark to close to six years in Spain. Given this heterogeneous situation across EU countries, often times driven by labour market regulations, a choice based on the type of contract could be considered challenging.

With regards to the choice of full-time versus part-time work, undertaking part-time work could be a voluntary or forced choice while full-time employment could be taken as a sign of more stable employment status. Thus, a choice of either *activity* or *first full-time job* is recommended for an indicator on transition duration from education to work.

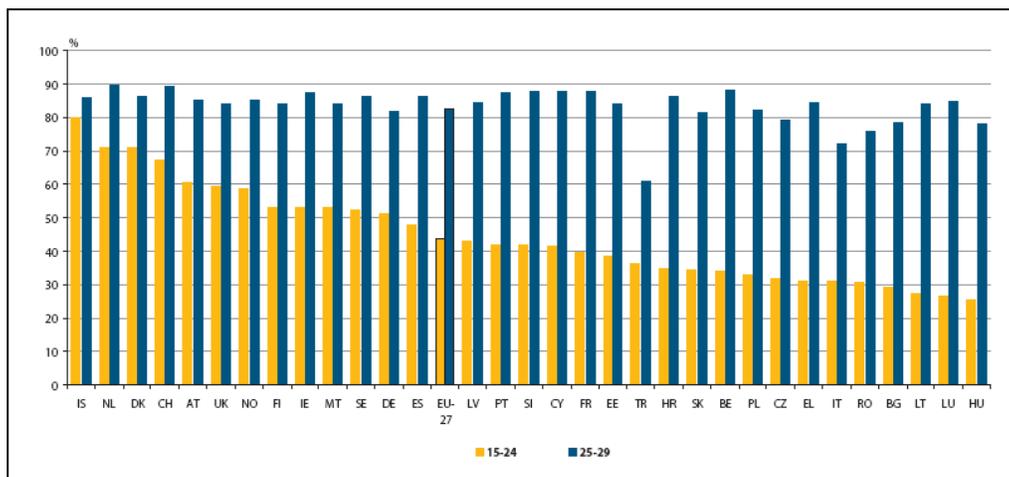
It is important to underline that the process of labour market integration is not necessarily completed by entry into one's first job. In fact, young people change jobs at the beginning of their careers more frequently in search for the best match between their skills and the employers' requirements in a process called job shopping (ibid., 2007). At the same time temporary contracts which do not translate into permanent ones within a reasonable timeframe could result in precariousness, fewer training opportunities and lower wages. However, it is difficult for a single indicator on transition duration to capture all these additional aspects.

### 2.2.2. DEFINITION OF TARGET GROUP

The choice of age bracket is especially important when considering the situation of young people on the market. Young people below 15 and above 29 are much less affected by transition dynamics as school is compulsory until 15 in all

countries while most people above 29 have already entered the labour market. As we can see from Figure 2.1, activity rates of young people raise significantly in the age group 25-29 when compared to 15-24, where rates are higher mostly in Nordic countries, which often provide class-based and work-based training in parallel. For a potential indicator on transition, an age bracket which ranges from 18 and not 15 years could be also considered as it better represents plausible age for entrance into the labour market of young people who do not proceed to tertiary education.

**Figure 2.1: Activity rates of young people, by age group (2007)**



Source: Eurostat (2009a)

Potential disaggregation by ISCED level provides important information as groups with different levels of educational attainment show different composition in terms of employment/unemployment/inactivity. Quintini et al (2007) show that one year after leaving education, rates of non-employment tend to decrease with educational qualification.

### 2.2.3. DEFINITION OF TIME PERIOD

Constant time periods must be used when assessing efficiency of school-to-work transitions across countries. Thus, the year when a person receives his/her highest educational diploma/degree should be considered as the start of the transition period. Quintini et al (2007) present one of the few studies which calculate average

duration of transition from school to work in some European countries (1994-2000) using longitudinal data from the European Community Household Panel.

**Table 2.1: Average duration of the transition from school to work in Europe, 1994-2000**

	Duration in months	
	Time spent to find any job	
Austria	19.9	(23.2)
Belgium	20.4	(23.4)
Denmark	14.6	(22.7)
Finland	27.6	(24.5)
France	24.3	(21.6)
Germany	18.0	(18.0)
Greece	21.3	(19.2)
Ireland	13.2	(22.6)
Italy	25.5	(20.6)
Portugal	22.6	(21.8)
Spain	34.6	(22.4)
United Kingdom	19.4	(20.0)

*Source: Quintini (2007)*

As we can see from Table 2.1, time spent to find any job ranges from 13.2 to 34.6 months. This can give useful indication for the time period after which to monitor the employment status of people leaving education, even though the countries examined in this study represent only a part of all Member States. A reasonable solution could be to examine the labour status of graduates 2-3 years after they have left education.

It is important to mention that an indicator on transition duration measures the interaction between the E&T system and the labour market and, as such, performance can not be solely attributed to E&T systems. Furthermore, 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).

### 2.3 DATA

Data on transition duration is available from the following sources:

- The two LFS ad-hoc modules:
  - o 2000 LFS add-hoc module on “Youth transition from education to working life in Europe” gives information on the activity rates (precarious, self/employed, unemployed) by time (months) since leaving continuous education (by ISCED level) for the first time;
  - o 2009 LFS ad-hoc module on “Entry of young people on the labour market” could be a valuable source of information but data will become available in the beginning of 2011.
- EU SILC – allows for disaggregate analysis as it gives employment status by month as well as longitudinal analysis;
- LFS – allows for cross-sectional analysis.

#### 2.3.1. DATA QUALITY ISSUES

The LFS ad-hoc modules (2000 and 2009) are valuable sources of data as they are targeted specifically at the topic of transition from education to work. However, they offer a ‘one-shot picture’ and do not provide time series which can allow the definition of targets and the possibility to monitor.

EU-SILC and LFS are very good sources of data. They both offer annual data, covering all Member States and are regularly updated.

#### **2.4 POSSIBLE BENCHMARK INDICATOR**

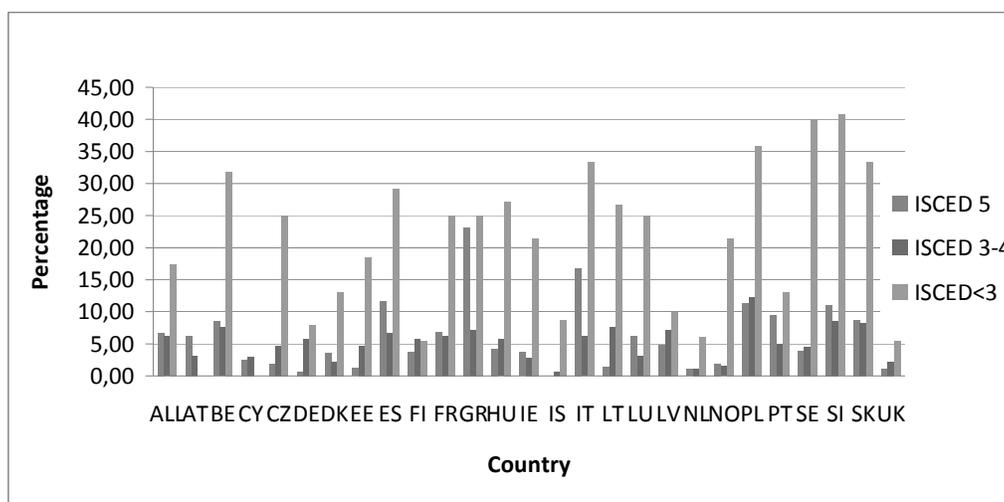
A proposal for a concrete indicator on transition duration is:

- Percentage of people in the age cohort (proposal – 15-29 or 18-29 year-olds) who are unemployed/employed 2/3 years after last educational degree obtained.

The figure below shows an example of CRELL’s calculation based on the EU SILC data (cross-sectional 2007) illustrating this indicator. It looks into the status of individuals two years after they have obtained their highest educational degree, further distinguishing by ISCED level. The percentages shown are calculated within the relevant ISCED group, i.e. % of graduates of a certain ISCED level out of all

unemployed in that ISCED level.<sup>11</sup> There is a great variation among countries and ISCED levels with ISCED levels above 5 and below 3 showing the higher unemployment rates. Similar elaborations can be done for longer time periods (three years or more after graduation).

**Figure 2.2: Percentage of graduates in unemployment two years after graduation by country and ISCED level, 2007**

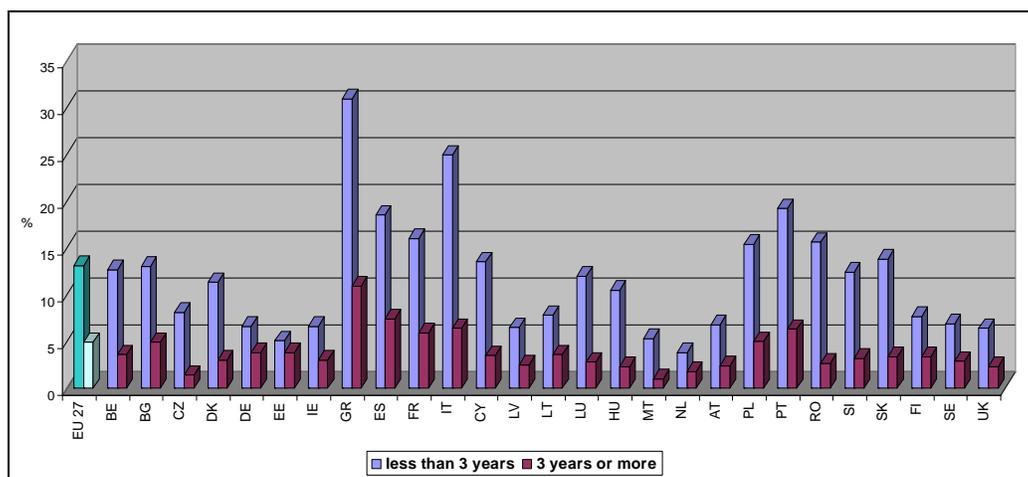


Source: EU SILC

Figure 2.3 shows data readily available from Eurostat on the unemployment rate of a different age group (20-34) limited to tertiary graduates and comparing the situation less and more than three years after graduation. We can see that, on average, the unemployment rates decrease by almost two times when looking at the employment status three years after graduation. Not surprisingly, as we are looking at tertiary graduates, they are quite low, being less than 5% in most countries. This can serve as another illustration of the type of indicators that can be used for a potential benchmark.

<sup>11</sup> The data on which the calculations have been made shows that the major percentage of unemployment is among ISCED level 3-4.

**Figure 2.3: Unemployment rate of persons aged 20-34, ISCED 5-6, by years since graduation, 2003-2007**



Source: Eurostat (LFS) - Bologna process in higher education

### 3. (MIS)MATCH

#### 3.1 POLICY IMPORTANCE

There is an extensive research literature on the question of (mis)match between occupation and educational level. There are two important aspects to consider when discussing the topic – over/undereducation and over/underskilling. While the distinction between the two concepts is very subtle, it does have an implication on the discussion of (mis)match. Over/undereducation occurs when an individual has more/less education than required by his/her current job. Over/underskilling, on the other hand, is related to a situation when an individual is not able to fully utilise his/her skills and abilities in his current job/lacks the skills and abilities to perform the current job to acceptable standards.

Factors responsible for the occurrence of (mis)match are "asymmetry in labour-market information (...), insufficient training, education and training systems responding slowly to market changes, labour shortage, skill-biased technological progress and business cycles" (Cedefop, 2010b, p.7).

The Cedefop report on skills matching underlines that "skill mismatch is a widespread phenomenon in Europe, with overeducation incidence averaging around

30 % and a substantial share of the population undereducated" (ibid., 6). It claims that the incidence of overeducation is higher than that of undereducation, an argument which can feed into a discussion of whether the focus of a (mis)match indicator should be on over- or undereducation.

Relevant consequences of the occurrence of mismatches are related to the economic cost, returns to education, impact on labour productivity and future employment opportunities. Sattinger (1993) points out that the quality of a job match determines the productivity level and earnings in a job. In cases of overeducation, an individual's acquired skills could be underutilized, imposing a limitation on his labour productivity resulting in lower wages and possible decrease in job satisfaction. Furthermore, individuals working in fields to which they have been educated have higher wages than those working outside the field to which they have been educated (Van de Werfhorst, 2001). The undereducated and underskilled, on the other hand, could have little motivation to become matched as they could be earning a premium relative to matched colleagues with similar educational level. However, if their marginal productivity is lower due to the lack of necessary skills and qualification, they will most probably have lower earnings than colleagues in the same occupation and with matched education (Cedefop, 2010b).

Overeducation and overskilling are expected to be negatively correlated to labour shortages when considering the same occupational field. In a situation of low level of labour shortages, i.e. sufficient number of qualified candidates to respond to the market demand, there is either a very good match between labour supply and demand or individuals with higher educational level have gone into jobs requiring lower qualification. Whenever overeducation/overskilling and labour shortages coexist, it is probably because skills or education are of the wrong type or because the two phenomena refer to different occupations in the same enterprise, industry or economy. Furthermore, mismatch, usually in the form of overeducation, "is more relevant for specific groups, such as young people entering the labour market, older workers, females, ethnic minorities and the disabled" (ibid., p.7).

The 2008 European Commission Communication on New Skills for New Jobs underlines that "the matching of skills is crucial to address both the employment impact of the crisis and the long-term job prospects of the EU workforce." It further

states that the composition of skills emerging from EU universities and training systems does not fully support a truly innovation-driven economy (European Commission, 2008a). The impact on competitiveness and growth potential is related to avoiding lower productivity levels due to skills mismatches.

Cedefop (2010b) points out that the issue of skills mismatch is also relevant for social partners as reducing skill mismatch would likely generate social benefits with higher job satisfaction, better health and wellbeing.

### 3.2 ANALYSIS

The definition of an indicator on (mis)match is challenging as precise data on skills match requires employer/employee reported data on skills used in the working place. Given the lack of data on these aspects, a focus on formal educational qualification and occupational characteristics is a reasonable solution. A number of considerations need to be made in the choice of a single possible indicator on (mis)match duration:

- a choice on the **time period** between leaving education and evaluating the existence of a match (ex. 1, 3, 5 years);
- a choice on the **target group** to monitor - by age group, ISCED level.

#### 3.2.1. DEFINITION OF TIME PERIOD

Getting a matched job rarely occurs shortly after leaving education. Especially among young people, it could require a couple of years due to reasons related to lack of experience, lack of immediate opportunities, job shopping, etc. Thus, monitoring matching should be done within a reasonable time period after leaving education in order to account for these adjustment processes.

A proposal is to observe the match condition 5 years after graduation as such time period is large enough to accommodate the specificities of single countries' labour markets. Shorter options than 3 years could result too unrealistic as estimated average time for finding a job after leaving education in Europe ranges from 13.2 to 34.6 months (Quintini, 2007).

### 3.2.2. DEFINITION OF TARGET GROUP

The choice of an age group is important as it needs to take into account the fact that we monitor people out of education for 5 years. Thus, a reasonable proposal would be to look at the 25-34 age cohort which would imply a focus on younger people who in most cases have already finished education and are in full-time employment. A more inclusive approach which looks into all age groups could also be used. However, as older people over time switch fields or make career due to accumulated work experience, such a choice would be less relevant in identifying the contribution of education and training.

It is important to mention that an indicator on (mis)match is a measure of the interaction between the E&T system and the labour market and the level at which labour supply and demand meet. As such, positive/negative performance can not be solely attributed to E&T systems.

## **3.3 DATA**

Both LFS and EU SILC offer data for the construction of a match indicator as they have questions on both the level of education (ISCED level) and occupational status (ISCO code).<sup>12</sup>

### 3.3.1. DATA QUALITY ISSUES

EU-SILC and LFS are very good sources of data. They both offer annual data, covering all Member States and are regularly updated.

It should be recognized that the ISCO-ISCED correspondence tables are not optimal and do not allow for a very fine match. However, this is the most widely and regularly available information.

---

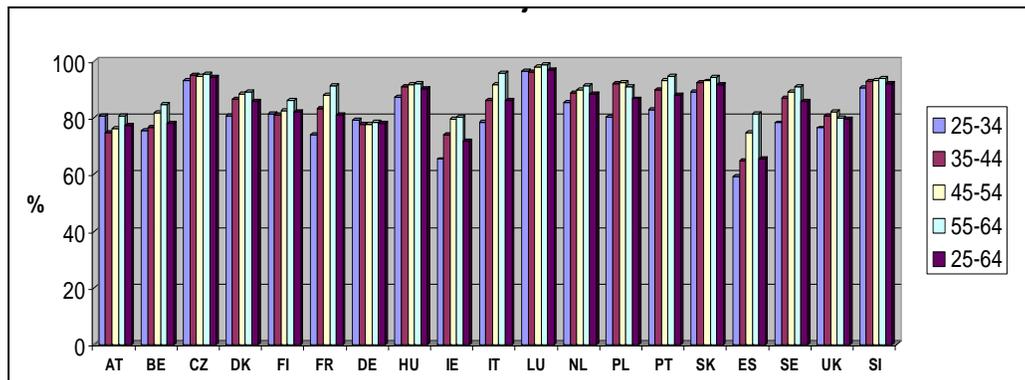
<sup>12</sup> The Cedefop (2010b) Report on “The Skill Matching Challenge” goes in detail as to the type of surveys and questions that need to be implemented in order to address both subjective and objective skills and education match.

### 3.4 POSSIBLE BENCHMARK INDICATORS

- Percentage of young people by level of educational attainment (ISCED) employed at a relevant skills level.

Figure 3.1 below illustrates this indicator with data from the OECD *Education at a Glance 2009*.

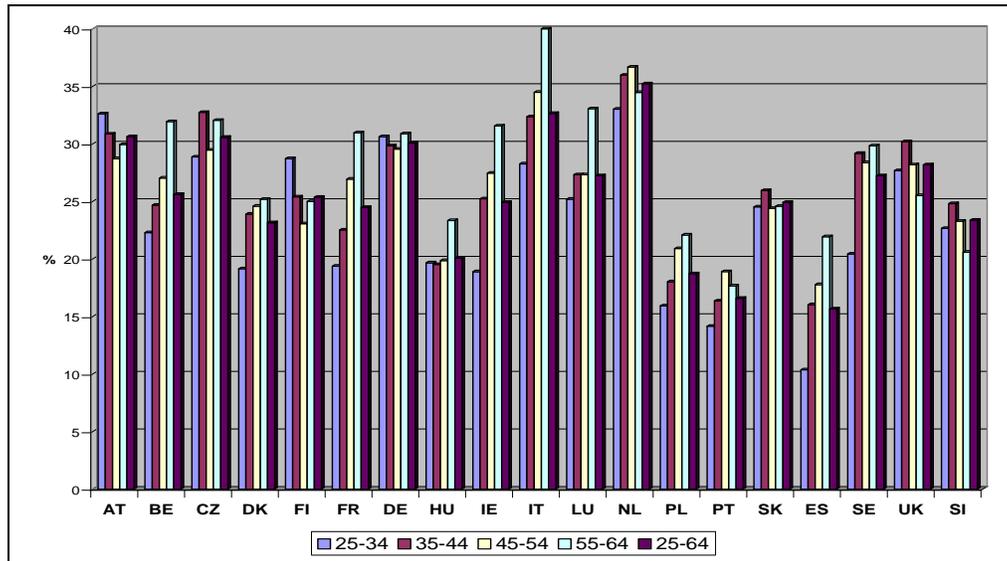
**Figure 3.1: Percentage of individuals with tertiary education employed in a matched job, by age cohort**



Source: OECD, *Education at a Glance 2009*

Figure 3.2, on the other hand, presents data for an indicator on the percentage of young people who are employed in skilled jobs but have education level ISCED 0-4, i.e. giving information on the level of undereducation. We can see that in many countries there is higher occurrence of undereducation for older age groups (45-54, 55-64). This can be explained by the fact work experience make up for formal educational qualifications.

**Figure 3.2: Percentage of cohorts with below tertiary education (ISCED 0-4) employed in a skilled job**

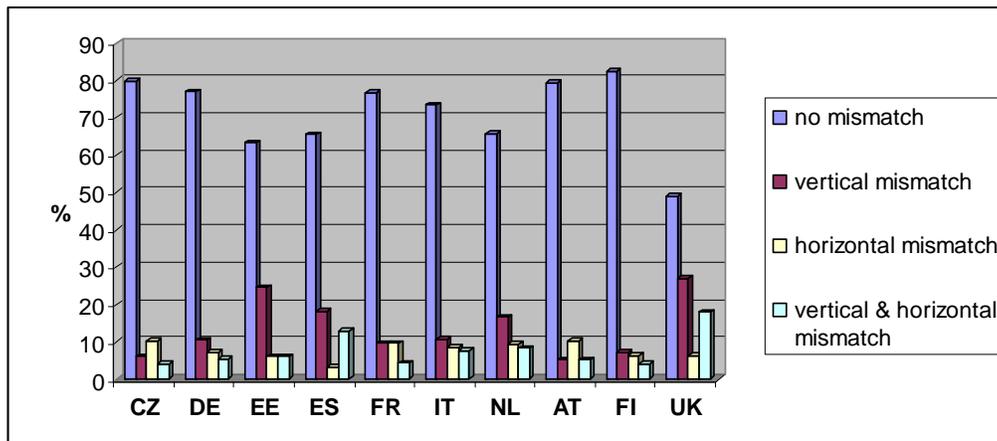


Source: OECD, Education at a Glance 2009

- Proportion of young people (25-29, 25-34 age brackets) who have an occupation relevant to their educational level 5 years after leaving education.

Figure 3.3 shows an illustration of such an indicator using data available from Eurostat on the percentage of persons employed in a matched job 5 years after education while offering also data on the percentages concerned by mismatches. The coverage is limited as the data comes from the 2005 Reflex project which did not include all EU Member States. However, data from the EU LFS could be adapted as to derive an indicator which looks into the percentage of young people 5 years after graduation and the match between their highest ISCED level obtained and the ISCO of their current occupation.

**Figure 3.3: Distribution of persons by qualification mismatches  
5 years after graduation (ISCED 5A), 2005**



*Source: Eurostat-Bologna process in higher education – Data: Reflex project*

*Note: Vertical mismatch – occurs when an individual is employed in a job requiring a lower level of education (overeducation); Horizontal mismatch – occurs when not the level, but the type of education or skills are inappropriate for the job.*

Psacharopoulos and Schlotter (2010) point out that such indicator based on broad correspondence between educational level and current occupation 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. However, the lack of data on actual utilization of skills acquired in education and training at the workplace makes it impossible to construct an indicator with such fine distinction.

# EDUCATION FOR MAINTAINING EMPLOYABILITY

## 4. PARTICIPATION IN LLL OF OLDER AND LOW QUALIFIED WORKERS

### 4.1 POLICY IMPORTANCE

The conclusions of the European Council of 25/26 March 2010 highlight five headline targets for 2020, of which the first is “to bring to 75% the employment rate for women and men aged 20-64, including through the greater participation of youth, older workers and low skilled workers and the better integration of legal migrants” (EUCO 7/10, p. 2, underline added). On the one hand, the focus on older workers derives from demographic developments with a share of people older than 60 that will rise to close to one-third of the population in several European countries over the next two decades. On the other hand, the focus on low skilled workers derives from the new labour market dynamics with a call from the demand side for higher quality jobs and from the supply side for higher quality candidates.

Therefore, economic productivity of older workers and low qualified in Europe occupies much of the political debate, including the capacity of these sub-groups to adapt to new technologies, new market conditions and new work patterns (Cedefop, 2004). Such adaptability capacity passes through the maintenance of a high and competitive skill level throughout the working life. In this context, access and participation to Lifelong Learning (LLL) programmes is considered as an important indicator of the capacity of elderly workers and low skilled workers to update and upgrade their skill level.

The link between LLL and employability is rather recent despite the fact that the concept of LLL was already casted in 1971 at the European Union level by the Education Ministers in an uncontroversial and non-binding resolution which “aimed to provide the population as a whole with the opportunities for general education, vocational training and life-long learning” (Blitz 2003, 5). In 1996, with the publication of the UNESCO report *Learning: The Treasure Within* (Delors, 1996), a clear definition of the concept of learning throughout life was officially agreed upon,

i.e. any formal, informal and non-formal learning from birth to death. Yet, since the Treaty of Maastricht (1992, Article G) and until 2001, in a response to economic imperatives, the European Commission has used the term LLL to refer merely to general or vocational education provided for adults after initial education and training for professional and/or personal purposes and which aims at:

- providing general education for adults in topics of particular interest to them (e. g. in open universities);
- providing compensatory learning in basic skills which individuals may not have acquired earlier in their initial education or training (such as literacy, numeracy);
- giving access to qualifications not gained, for various reasons, in the initial education and training system; and at
- acquiring, improving or updating knowledge, skills or competences in a specific field, i.e. continuing education and training (adapted from European Training Foundation, 1997; Cedefop, 2004).

This approach to the concept of LLL has had an impact on the kinds of learners represented in the published texts: the “high knowledge-skilled” and the “low knowledge-skilled”: “those that know and those that do not” (Brine, 2006). During the later 1990s, the term “disadvantage”, which was initially associated with social exclusion, multiple deprivation and particular social groups, merged into the terms of “individual needs and responsibilities”, i.e. from a structural to an individual explanation of disadvantage. In parallel, the aim of LLL moved from “employment” to “employability”: the ability to become employed, rather than, necessarily, the state of employment itself (ibid., 652). Hence, since the conclusions of the Lisbon European Council (March 2000), the focus has shifted to unemployed adults and those in employment who are at risk of seeing their skills overtaken by rapid change (European Council, 2000). Furthermore, in the *Memorandum on Lifelong Learning* (European Commission, 2000) - first official document to set out a detailed strategy for lifelong learning -, active citizenship, the knowledge society and employability are posed as interrelated key concepts, and LLL is seen not only as an important contributor to maintaining economic competitiveness and employability, but also

(mainly because of its role in building employability) as “the best way to combat social exclusion” (ibid., 6).

Although the Communication from the Commission of 2001<sup>13</sup> redefined lifelong learning as “all learning activity undertaken throughout life, with the aim of improving knowledge, skills and competences within a personal, civic, social and/or employment-related perspective” (COM(2001) 678 final, p. 9), the *Draft 2008 Joint Progress Report* of the Commission and the Council (2008) notes that LLL is still far from a reality for all. “Low participation in LLL of older workers and the low-skilled is a particular problem where participation rates are already low for the overall population” (ibid., 12). These issues indicate a neglect of general and specific social capital initiatives, which was already addressed by a number of countries involved in the EC Project on lifelong learning (2005-2010) (Holford, 2007).

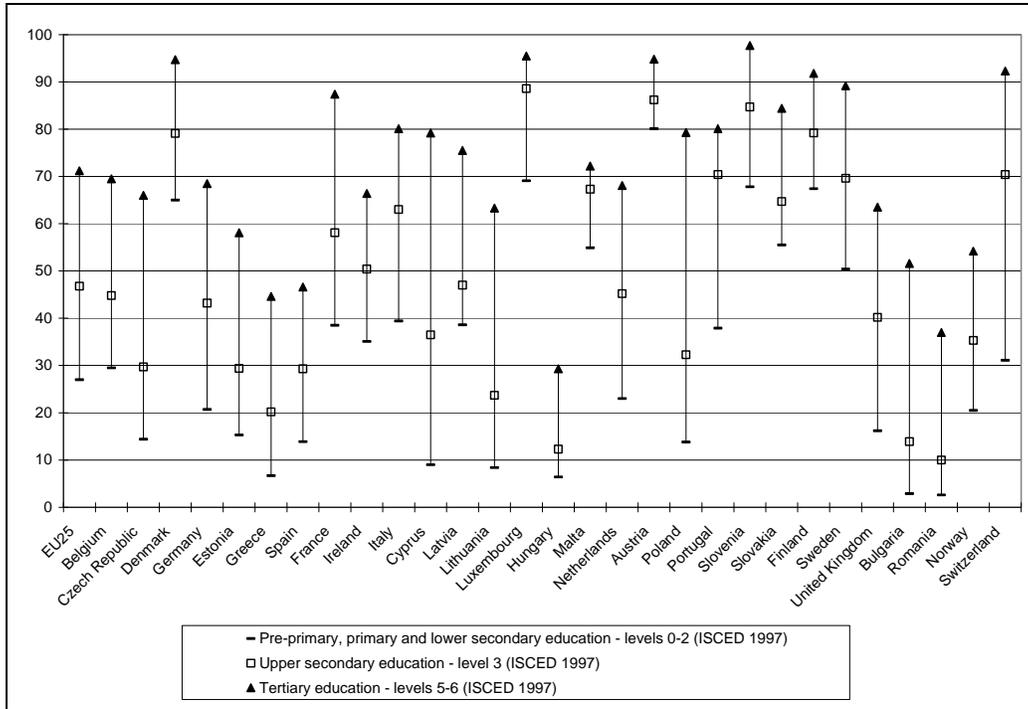
## 4.2 ANALYSIS

Recent analyses conducted on the participation to LLL programmes report unequal participation across age groups and across level of education. For instance, Figure 4.1 presents the participation rate of the employed population aged 25-64 by level of formal education and reveals a much higher level of participation among highly educated workers. The low skilled workers participate on average two times less than their high skilled peers (except in Denmark, Luxembourg, Slovakia and Slovenia where the difference between ISCED groups is lower). From Figure 4.2, we see that the low skilled population is mainly to be found among the elderly workers. Whereas in the majority of the EU countries, the level of education attainment is the highest among the youngest population (25-34); in Estonia, Latvia, Leetonia and Romania, the 35-44 age group out passes the younger group significantly in term of level of education and in a few countries, the 25-34 and 35-44 age groups present similar levels of education (e.g., Germany, Bulgaria, Czech Republic, Slovakia, Sweden and Poland).

---

<sup>13</sup> This Communication also listed a set of priorities for action, among which the valuing of formal diplomas and certificates; the valuing of non-formal and informal learning; the strengthening of information, guidance and counselling; the allocation of adequate resourcing to facilitate access to learning opportunities; the provision of incentives to enable investment; the guarantee of high quality returns and outcomes of investment; the making of basic skills genuinely available to everyone and in particular to those less advantaged in schools, early school leavers and to adult learners.

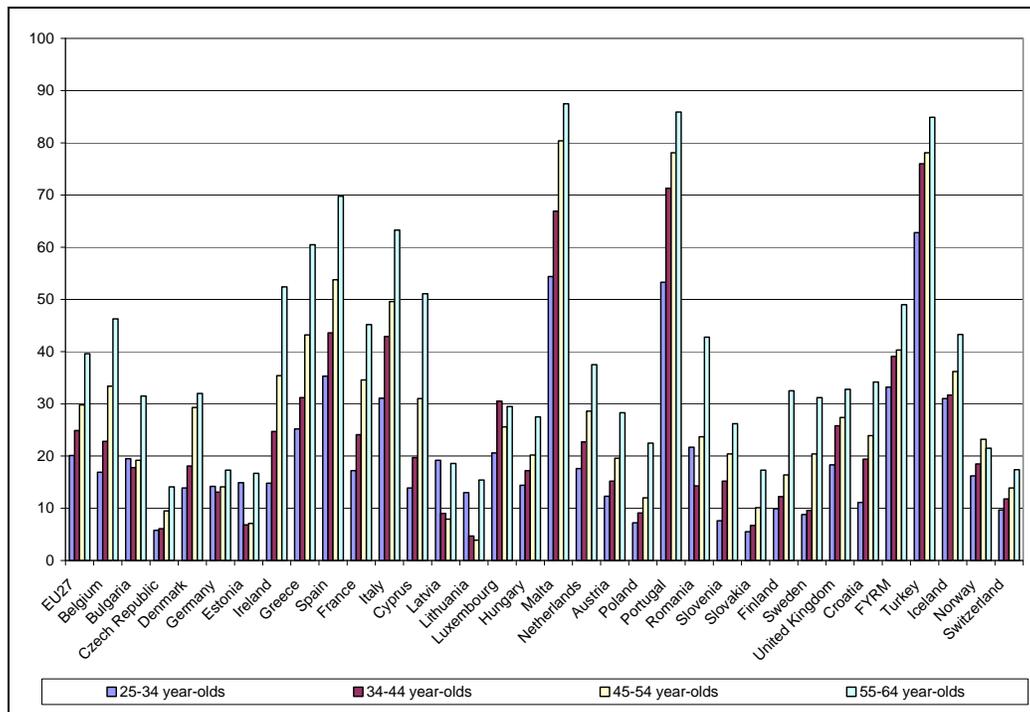
**Figure 4.1: Participation of the employed population in lifelong learning by ISCED level, 2007**



Source: Eurostat, AES

Note: This indicator refers to the share of the employed population aged 24 to 64 who have participated in any type of learning activity, by ISCED level.

**Figure 4.2: Percentage of the low-skilled workers in total population, 2008-2009**



Source: Eurostat

Note: The indicator is defined as the percentage of people aged 25 to 64 with an education level ISCED of 2 or less (pre-primary, primary and lower secondary education). Data refer to the year 2008 for the 25-35 year-olds and the 34-44 year-olds cohorts and to year 2009 for the 45-54 year-olds and 55-64 year-olds cohorts.

Despite these within-country variations, findings from the LLL2010 project report (Holford et al., 2007) some overall trends that have been experienced by several of the countries:

- employed people with higher level of education are likely to participate more in further learning and training than those with lower level education;
- there is regional variation in terms of access to education between cities, towns and rural areas;
- those employed in the public sector are more likely to be able to access training than those in the private sector;
- employed people have greater access to education and training than unemployed or economically inactive;
- unemployed people are more likely to participate in longer, more intense levels of training than those in employment.

Hence, overall, it is the younger people and higher skilled workers who have so far the greatest access to education and training, which justifies a policy target to increase the participation rate of elderly and low skilled to LLL activities, all work status (employed, unemployed, non-active) and activity sectors (public and private) included.

#### **4.1 DATA**

The main data sources available for the measurement of access and participation to LLL programmes are the following:

- Participation in CVT courses in enterprises (CVTS, Eurostat);
- Cost and financing of CVT course in enterprises (CVTS, Eurostat);
- Non-formal learning within paid working hours (LLL ad hoc module EU LFS, Eurostat);
- Adult participation in Lifelong learning (EU LFS, Eurostat);
- Hours in CVT courses per employee (all enterprises) by NACE (CVTS, Eurostat);
- Participants in other forms of CVT by type of training (CVTS, Eurostat);
- Vocational training allowances for unemployed (periodic benefits) (ESSPROS, Eurostat);
- Non-formal education and training activities by provider (AES, Eurostat);
- Participation to training or full-time education since entrance into the labour market (SHARE survey).

##### **4.1.1. DATA QUALITY ISSUES**

Each of the sources of these indicators allows them to be disaggregated by age group and ISCED level, thereby covering both the elderly workers and the low skilled. However, some quality issues disqualify some of them as potential benchmarks.

- **AES:** Although the most comprehensive survey in terms of types of LLL programmes, the AES lacks cross-country coverage at the EU level and frequency of data collection (every 5 years).

- **CVTS:** This survey lacks detailed information about non vocational LLL programmes and suffers from a lack of frequency of data collection (every 4-5 years).
- **EU-SILC:** Although it is expected to collect data for all EU countries on a yearly basis since 2004 (both longitudinal and cross-sectional), the EU-SILC survey suffers significant missing data on education and training participation and it lacks information about the types of training.

Moreover, despite the fact that many EU countries have an official retirement age fixed at 65 or above, the data from AES, CVTS and EU-SILC is only collected for adults younger than 65 years old. Hence, these surveys exclude from their sample the most sensitive group of elderly workers, namely those close to the official retirement age and more prone to pre-retirement.

- **SHARE:** Covers all the elderly workers. However, it is only collected in 17 EU countries and not on a yearly basis (2004, 2006, 2009, 2011).

#### 4.2 POSSIBLE BENCHMARK

Based upon the data quality issues mentioned above, the only two indicators that could potentially be retained as benchmarks are:

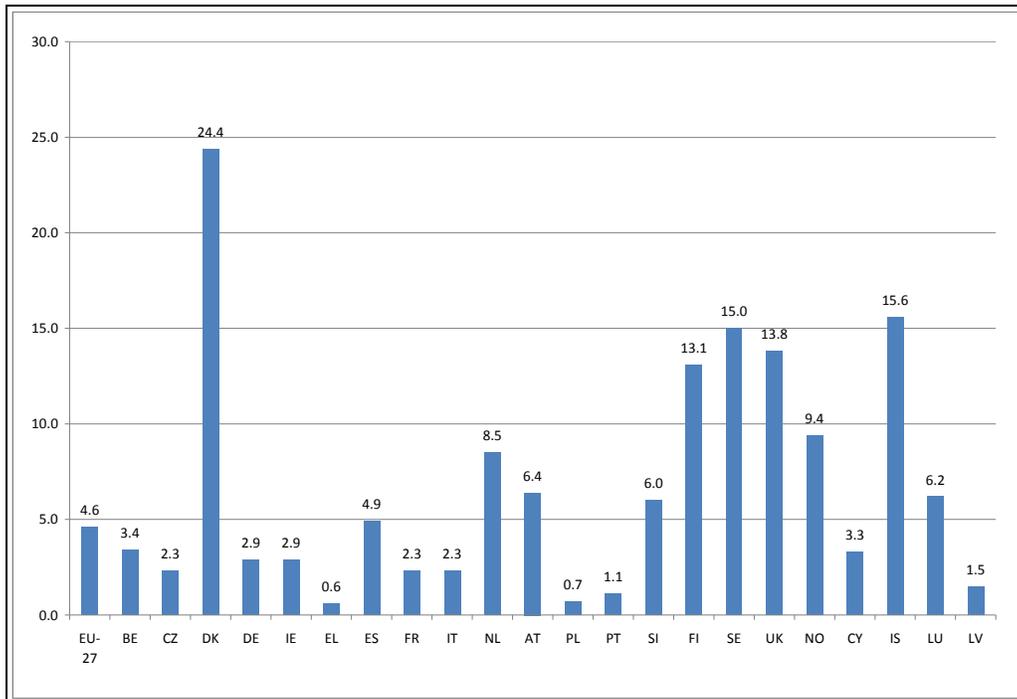
- Adult participation in Lifelong Learning (EU LFS, Eurostat); and
- Vocational training allowances for unemployed (periodic benefits) (ESSPROS, Eurostat).

However, among these two, the only one providing annual information by gender, age, working status, sector of activity, educational attainment and type of contract is the first indicator by EU LFS (see Figures 4.1 - 4.3). An additional strength of this indicator is the fact that it is already listed by the Employment Committee (part of the European Employment Strategy (EES)<sup>14</sup>) in the Employment Guidelines 2009 as a key tool to monitor the efficiency of LLL strategies (Guideline 23).

---

<sup>14</sup> At the EU level, the EES is so-far considered as the most prominent mechanism for assessing and monitoring national developments in the area of lifelong learning (Stuart and Greenwood, 2006, 139). This process takes place in the context of an annual round of National Action Plans which are assessed by the Commission and the Council in a Joint Employment Report and fed back through National Employment Guidelines.

**Figure 4.3: Participation rate in LLL of older adults (55-64), 2009**



Source: Eurostat

*Note: This indicator refers to the share of the employed population aged 55 to 64 who have participated in any type of learning activity during the 4 weeks preceding the date of the interview.*

## **5. RETURNS TO FORMAL EDUCATION AT A LATER AGE**

### **5.1 POLICY IMPORTANCE OF THE AREA**

Among the initial objectives announced for 2020 in the field of education and training was a share of at least 40% of 30-34 year olds with tertiary educational attainment. Moreover, last March, the conclusions of the European Council highlighted five headline targets for 2020, among which “to bring to 75% the employment rate for women and men aged 20-64, including through the greater participation of youth, older workers and low skilled workers and the better integration of legal migrants” (EUCO 7/10, p. 2, underline added).

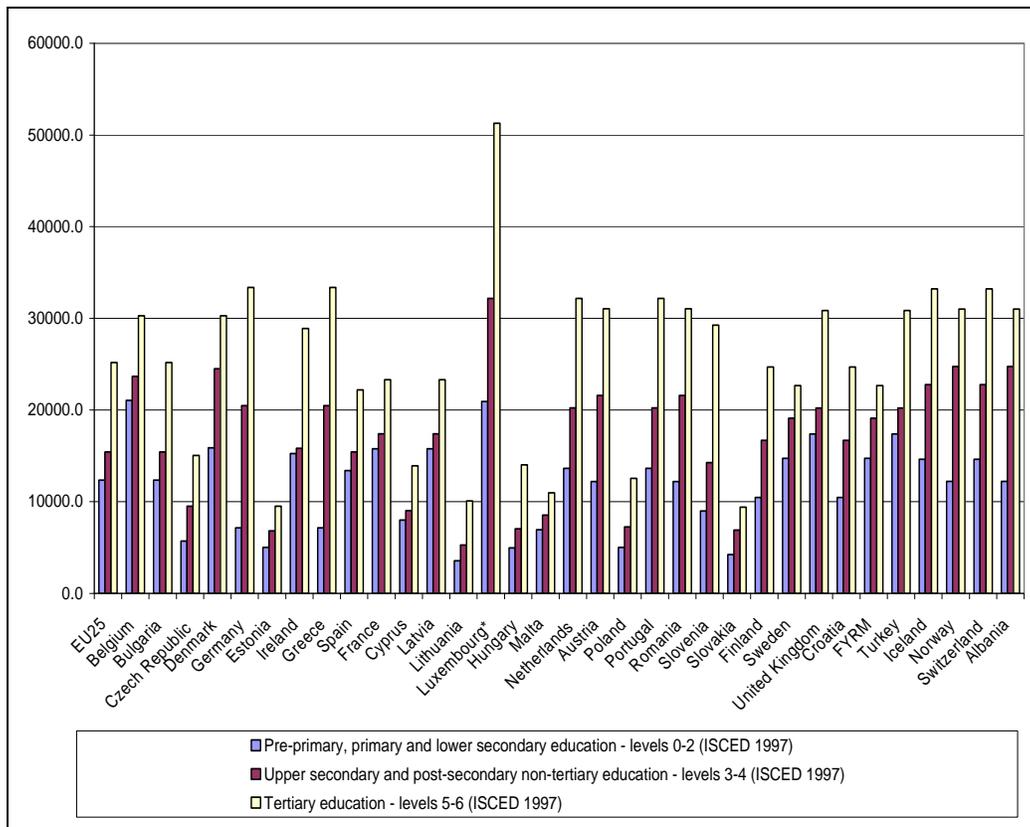
The focus on the education and training participation of adults is linked to the need to ensure an economically efficient and competitive workforce longer in life. Such efficiency implies combating obsolescence of qualifications through continuous updating and upgrading of basic and specific skills to remain employable, work longer and make career changes. As demonstrated by Cedefop (2010a) in its report *New Skills for New Jobs: Action Now*, improved skill levels have the potential to help workers “get in” to work, “stay in” work and “get on” (i.e. progress through the labour market into better jobs).

The benchmarking of returns to late formal education constitutes therefore a potential key element to meet the 2020 headline target enounced by the European Council in March 2010.

### **5.2 ANALYSIS**

In every single EU country, the higher qualified you are, the greater the likelihood to be in work. The employment rates, for those with high skill levels across the EU as a whole is 83,9%, that for medium skill levels is 70,6% and that for low skill levels is 48,1% (Eurostat, EU LFS, 2008). In addition, as reported by Cedefop (2010a), in just about every EU country, the higher your skills level the higher your average income (Figure 5.1). Moreover, adequate skills and competences are also crucial in social and civic life as warrants of community cohesion, personal fulfilment and happiness.

**Figure 5.1: Annual gross income of workers in Euros, by education level, 2007**



Source: UOE.

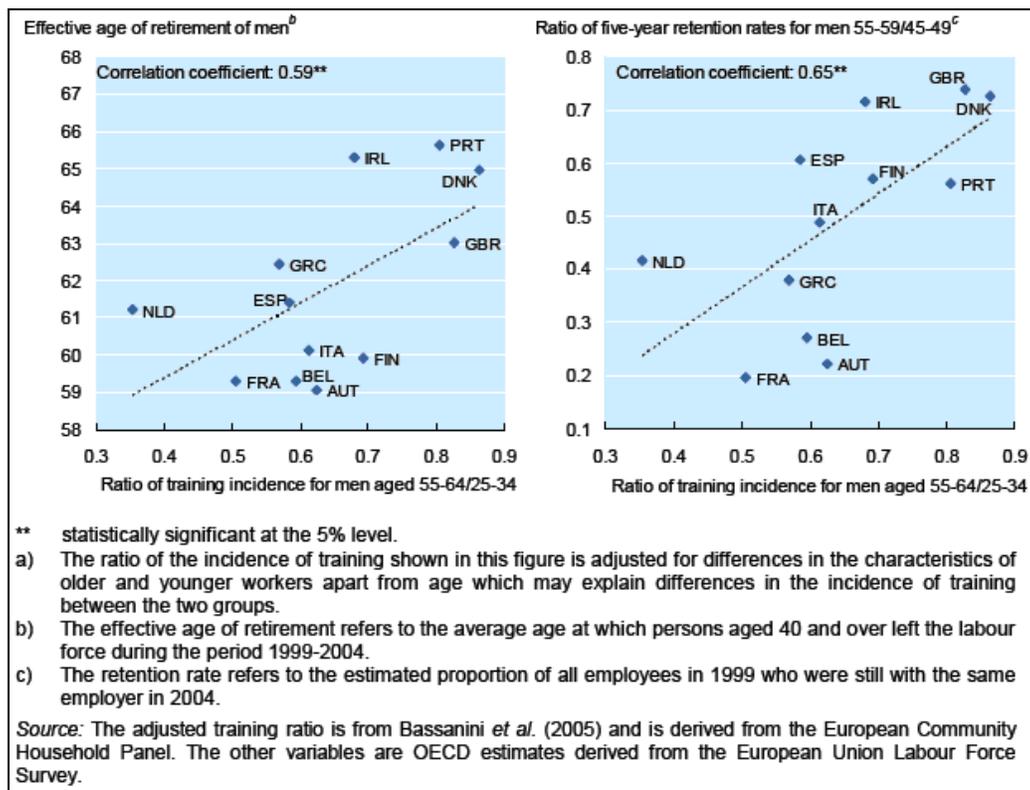
Beyond the private and social returns of qualifications, recent research has also provided evidence for macro-economic returns of skills. For instance, the Bertelsmann Foundation (2009) has shown that a reform of an education system providing adequate skills for all citizens could increase GDP by as much as 10% in the long run. Collier et al. (2007) also demonstrate that companies that train their staff are 2.5 times less likely to go out of business than their counterparts.

From the above evidences of potential returns to skill-upgrade it appears obvious that incentives should be developed to maximize the share of people returning to formal education at a later age. To be successful, such incentives should target all stakeholders, i.e. the workers, the employers and the education and training institutions.

At the individual level, it may be optimal for an individual to increase investment in late higher education attainment if expectations of the rental rate of human capital increase enough (e.g., Monks, 1998). Intuitively, the shorter the time

horizon remaining to reap the higher returns to human capital, the greater the increase in the expected rental rate of human capital necessary to prompt an increase in investment. These results are comforted by the report by the OECD (2006), *Live Longer, Work Longer*, which stresses the existence of a positive and statistically significant correlation across countries between the (adjusted) incidence of training for older workers relative to younger workers and the average effective age of retirement (see Figure 5.2)<sup>15</sup>.

**Figure 5.2: Training of older workers and expected pay back period<sup>a</sup>**



At the employer level, as recommended by Cedefop (2010a), incentives should be developed to recognize the knowledge and skills acquired by employees

<sup>15</sup> CRELL is currently running an EU study investigating more specifically the incidence of the participation to adult education and training and the decision to retire early (when no specific disability is revealed). This research aims at testing the validity of the results by Monks (1998) at an EU cross-country level by first replicating Monks model with EU data, then by redefining returns in terms of longer participation in the labour force rather than private incomes. In the second step of the model wages are considered as an explanatory variable that may affect the decision to stay longer in the labour force alongside other factors (e.g., participation to adult education and training programmes, initial formal educational attainment, work experience, job satisfaction, gender, marital status, etc.). Preliminary results are expected by July 2010.

during the course of their studies as adding value to the company, so that part of the expenditure on training and salaries during the training period can be depreciable in tangible fixed assets and transferred accordingly on the balance sheet. Finally, at the education and training institutions level, incentives should be provided to intensify cooperation between the providers of education, training and businesses (ibid.) and to recognize/certify work experience (COM(2006) 479)<sup>16</sup>.

### 5.3 DATA

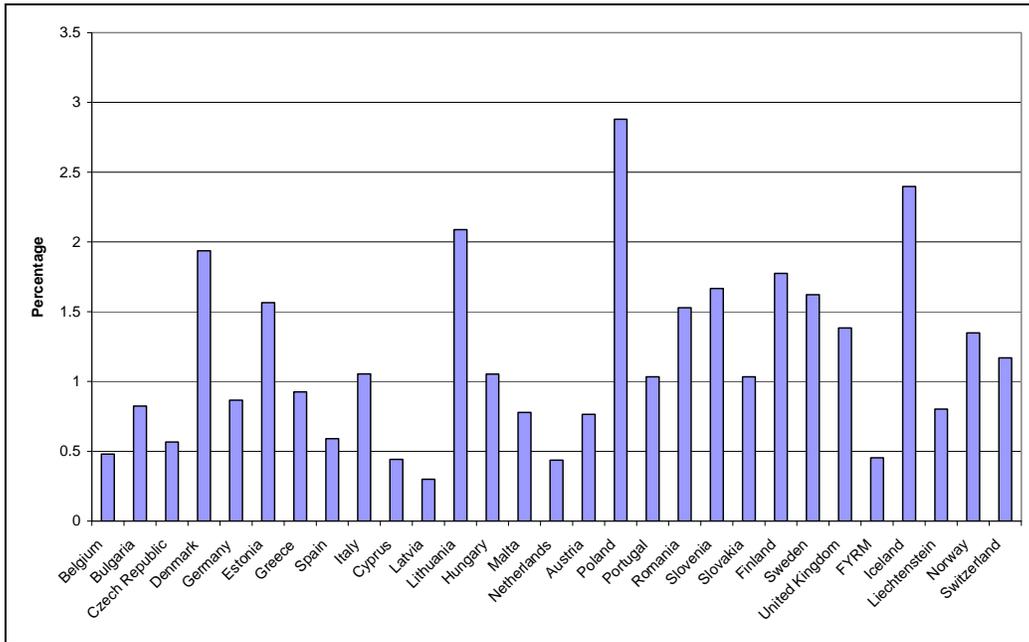
In order to monitor the share of the working age population going back to higher education, several options are available among existing indicators:

- share of 30-34 year olds with tertiary educational attainment (UOE) (Figure 5.3);
- share of tertiary education graduates aged 30 years and above (without age ceiling) as % of the total graduates (UOE) (Figure 5.4);
- net entry rate ISCED 5-6 by age group (UOE) (Figure 5.5).

---

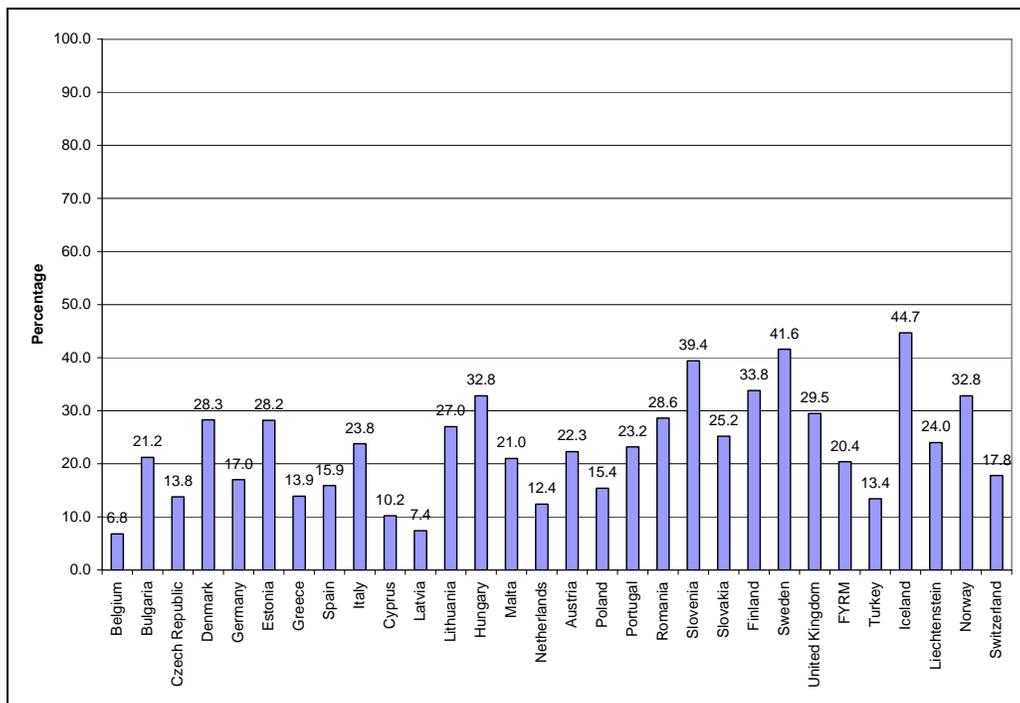
<sup>16</sup> As reported in the Draft 2008 Joint Progress Report of the Council and the Commission on the implementation of the 'Education & Training 2010' work programme, some progresses have already been made with regard to the Qualifications Frameworks for lifelong learning, which are being developed in most countries.

**Figure 5.3: Share of higher education graduates among the 30-34 year-old population, 2007**



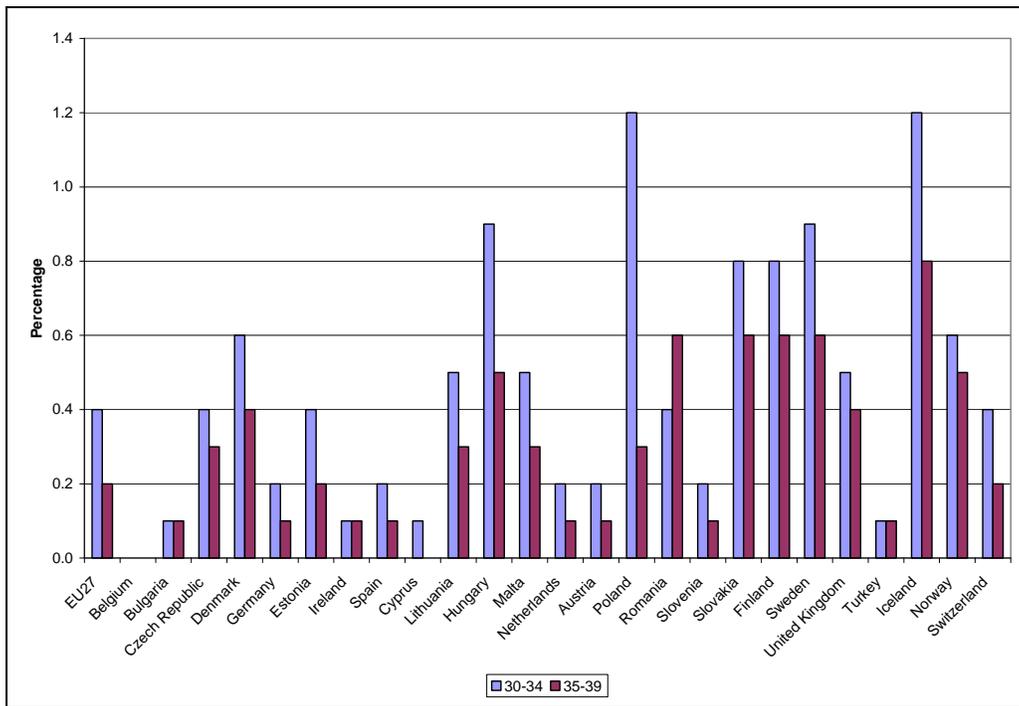
Source : Eurostat.

**Figure 5.4: 30+ higher education graduates as a percentage of total graduates, 2008**



Source : Eurostat.

**Figure 5.5: Net entry rate into higher education (ISCED 5A), by age group (30-34, 35-39), 2006**



Source: UOE.

### 5.3.1. DATA QUALITY ISSUES

The main data quality issue suffered by the three indicators mentioned above is the presence of missing values at certain points in time for certain countries. Although the data is collected yearly, so far, no annual report has provided full data coverage for all EU27 countries.

## 5.4 POSSIBLE BENCHMARK INDICATOR

Among the indicators mentioned in section 3, all three could potentially be retained as benchmark indicators for the returns to education at a later age. However, the first one seems too targeted in terms of age population, focusing only on the 30-34 year-olds, which constitutes a limitation in the frame of our exercise. In addition, it does not tell when the graduation took place, thereby providing no information on potential late graduation. Hence, the second and the third indicators seem more adapted because they provide an idea of the openness of the education and training

institutions as well as of the labour market for the participation to higher education at later ages.

On the one hand, the second indicator on the share of tertiary education graduates aged 30 years and above (without age ceiling) as % of the total graduates focuses on the graduation rates at later ages but does not provide information about the entry age. This means that the graduates captured in this measurement may have started their higher education at a very young age and interrupted it (for any reason) before re-entering for completion. They may also have both started and completed their higher education programme at a later age. On the other hand, the third indicator on the net entry rate into higher education programmes between the age of 30 and 39 provides information on the share of individuals' registration for higher education programmes at a later age but does not give any information about their actual graduation rate. Since the objective of the European Commission is to guarantee an upgrade of skills by 2020, it is important to guarantee a completion rate as high as possible.

Therefore, the second indicator appears as the optimal option as a benchmark since it targets the population of concern and provides information on their skill upgrade (i.e. graduation rate). Still, if this indicator is to be adopted as a benchmark indicator of the role of education and training for employability then incentives will be needed to improve the response rate at the country level to guarantee a full EU27 coverage (e.g., no data is so far available for Ireland, France and Luxembourg).

## THE CORE INDICATORS OF THE ET 2020 STRATEGY AND EMPLOYABILITY

Typically, individuals acquire the essential knowledge and competences required for a given occupation while at formal E&T. At this stage, educational systems are seen as the main responsible for the skill attainment of the workforce. They contribute through a) *input* factors (e.g investments and teacher training), b) *processes*: quality, equity, mobility and responsiveness to changing demands, c) *outputs*: graduation or attainment levels and d) *learning outcomes*: knowledge, skills and attitudes valued in the labour market. The 16 core indicators and five benchmarks adopted in the context of the ET 2020 strategy (2009/C 119/02, replacing those of May 2007) address each of these areas. To what extent each of the 16 indicators could be considered a suitable measure of the contribution of E&T systems to *employability*? This section spells out the specific contribution of each indicator to enhanced job prospects. The related data sources are also indicated.

<u>SIXTEEN CORE INDICATORS AND FIVE BENCHMARKS (*)</u> <u>OF THE ET 2020 STRATEGY</u>	
INPUT	<ul style="list-style-type: none"> <li>• Professional development of teachers and trainers</li> <li>• Investment in education and training</li> </ul>
PROCESS	<ul style="list-style-type: none"> <li>• Special needs education</li> <li>• Cross-national mobility of students in higher education</li> </ul>
OUTPUT	<ul style="list-style-type: none"> <li>• Early childhood education *</li> <li>• Educational attainment of the population</li> <li>• Upper secondary completion rates of young people *</li> <li>• Higher education graduates</li> <li>• Early leavers from education and training *</li> <li>• Adult participation in lifelong learning *</li> </ul>
LEARNING OUTCOMES	<ul style="list-style-type: none"> <li>• Adults' skills</li> <li>• Mathematics, Science and Reading literacy *</li> <li>• Language skills</li> <li>• ICT skills</li> <li>• Civic skills</li> <li>• Learning to learn skills</li> </ul>

## I. INPUT

### PROFESSIONAL DEVELOPMENT OF TEACHERS AND TRAINERS

Secondary education provides individuals with basic skills (such as numeracy and literacy) which are instrumental for their employability later on. Initial and continuous teacher training are key determinants of the quality of education<sup>17</sup>. Professional development is of particular relevance given that one third of secondary education teachers in the EU27 are over 50<sup>18</sup>.

This issue has been the subject of Council's recommendations<sup>19</sup> and data collection requests (2007/C 311/10 and 2005/C 141/04). The OECD, supported by the European Commission, undertook in 2007 the first Teaching and Learning International Survey (TALIS), covering 16 EU countries and 7 non-EU states. In 2007-2008, nine out of ten teachers participated in professional development activities.

The ever increasing importance of innovation and technological advancement puts a strong pressure on the skills supplied by E&T systems. Cedefop (2010a, p.27) proposes to “reinforce in teachers’ curricula 'work-related' issues (skills development, entrepreneurship and professional guidance, transversal competences, use of digital media)” (...) and re-skill as many existing teachers as possible”. In fact, one of the areas for which teachers expressed in 2007 the greatest need for development is “ICT teaching skills” (OECD, 2009b).

Developing the capacity of ISCED 2 teachers to facilitate learning outcomes seems most crucial in light of the early leaving problem (15% of the population aged 18-24, see further below) and high rates of low achieving 15 year olds. On the one hand, better teaching might induce pupils to stay in education (and become more prepared workers). On the other hand, secondary teachers might be the last ones (in

---

<sup>17</sup> The percentage of teachers of lower secondary education reporting that “the professional development undertaken in the previous 18 months had a moderate or high impact upon their development as a teacher” ranges from 72% to and 89%, depending of the type of professional development (OECD, 2009b, p. 75).

<sup>18</sup> In 2007, 32,4% of teachers ISCED 2-3 (European Commission, 2009a, p.48 Eurostat (UOE) data).

<sup>19</sup> Common European Principles for Teacher Competences and Qualifications; 2006 Joint Interim Report of the Council and the Commission on progress under the Education and Training 2010 work programme (2006/C 79/01); Conclusions on efficiency and equity in European education and training systems (2006/C 298/03).

the formal E&T system) having the chance of providing early-leavers-to-be with skills valued by employers.

## **INVESTMENT IN EDUCATION AND TRAINING**

Being the E&T system one important contributor to the skills attainment of the population, investment in education should be seen as laying the basis for sustainable job creation and growth as well as contributing to overcome short term crisis. Achieving greater employability implies, in turn, increased public returns to investment (in the form of income taxes, increased social insurance payments and lower social transfers as a consequence of higher income levels).

Little is known about whether differences in national levels of spending and activities are related to differences in skills levels and characteristics. Some research suggests a lack of positive correlation between educational funding and better cognitive skills (Hanushek, 1986, 2002 and 2003; Gundlach et al., 2001; Woessmann, 2002). However, adequate investments are essential to increase the proportion of population that participates today in E&T and that will later integrate the labour market.

In 2006 public investment in education in the EU27 accounted for 5.05 % of GDP, with 1.17% of GDP devoted to primary education, 2.24% allocated in secondary education and close to 1.13% in tertiary education (Eurostat -UOE data). Investments per student increase substantially with the level of education.

## **II. PROCESS**

### **SPECIAL NEEDS EDUCATION (SEN)**

The European Agency for Development in Special Needs collects data on SEN using national definitions. OECD collects internationally comparable data on three categories of students: those having physical disabilities, pupils with behavioural and learning difficulties; pupils with a disadvantaged socioeconomic background. According to OECD and CRELL data, the 2005 EU27 average share of pupils with special needs is 3.3% (European Commission, 2008b). The Council requested in May 2007 (2007/C 311/10) the development of an indicator in this area.

Pupils with special needs are associated with lower learning outcomes than their peers and early school leaving, which in turn are related with gloomy employment prospects. Current policy promotes the inclusion of SEN pupils in regular schools.

Children with migrant background might be overrepresented in schools for pupils with special needs (European Commission/NESSE, 2008; Soriano et al., 2009). This situation may be explained by factors such as a poor socioeconomic background, insufficient knowledge of the instruction language and lack of support from the educational environment (European Commission, 2008c).

### **CROSS-NATIONAL MOBILITY OF STUDENTS IN HIGHER EDUCATION**

Student mobility contributes not only to personal development and fulfilment but also to enhancing competence in fields like languages and intercultural understanding and, hence, to employability on an increasingly international labour market (European Commission, 2009a)<sup>20</sup>.

The Council has invited the Commission to submit a proposal for a benchmark in this area by the end 2010 (2009/C 119/02), focusing initially on physical mobility between countries in the field of higher education and reflecting the efforts made and the objectives agreed within the Bologna process<sup>21</sup>. The Commission was also invited to study the possibility of extending such a benchmark to include VET and teacher mobility.

## **III. OUTPUT**

### **EARLY CHILDHOOD EDUCATION**

Several studies have analysed the positive effects of early childhood education from an educational and social perspective. It has been found that all children could benefit from it, especially those facing personal or familiar unfavourable situations, as it has proven to be effective to counter potential educational disadvantages (European

---

<sup>20</sup> A number of policy initiatives relate to the promotion of mobility, such as the Council Conclusions of May 2009 (2009/C 119/02), the Green Paper on learning mobility (COM(2009) 329 final) and the “Youth on the move” initiative within the EU 2020 strategy (COM(2010) 2020).

<sup>21</sup> Communiqué of the Conference of European Ministers responsible for Higher Education, Leuven and Louvain-la-Neuve, Belgium, 28-29 April 2009.

Commission/NESSE, 2009). Early childhood education indirectly contributes to employability as it paves the way to improved learning outcomes later on (Heckman and Masterov, 2007; EACEA/Eurydice, 2009).

### **EDUCATIONAL ATTAINMENT LEVEL**

The educational attainment of the population is the most used indicator for skills supply and is commonly accepted as a proxy for qualification levels. There is a positive relationship between educational attainment and employment rates – the higher the educational attainment levels the higher the employment rate (European Commission, 2009a). There are no readily available alternative measures of skills of the working population. One exception is the International Adult Literacy Survey (IALS), conducted in 1994-9 by the OECD in 23 countries, which measured cognitive skills of a representative sample of individuals aged 16-65. 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.

Data on educational attainment of the population is readily available from Eurostat (LFS). In 2008 at the EU level less than one third (28.5%) of the adult population (25-64 years old) had a low level of educational attainment, almost half (47.2%) had a medium level and almost a quarter (24.3 %) achieved higher level qualifications.

### **UPPER SECONDARY COMPLETION RATES OF YOUNG PEOPLE**

About 50% of the working population has secondary education attainment level. Completing upper secondary education is increasingly important not just for successful entry into the labour market, but also to allow students access to the learning and training opportunities offered by higher education. Successful participation in the knowledge-based society requires the basic building blocks offered by a secondary education.

Progress since 2000 on increasing upper secondary attainment levels of young people (20-24) has been limited. The present (2008) EU average for the population

aged 20-24 is 78.5% and has only slightly improved (by 2 percentage points) since 2000 (Eurostat data, LFS).

## **HIGHER EDUCATION GRADUATES**

The trend versus a higher demand for qualifications is due to future changes in the occupational structure, with more new jobs being opened for professionals and technicians (Cedefop, 2010a). Most new jobs by 2020 are expected to be in knowledge and skill-intensive occupations (around 8.5 millions), increasing the demand for tertiary-educated workers. Tertiary education is associated with higher activity and employment rates (European Commission 2009a, OECD 2009a) and higher returns to education (Psacharopoulos and Patrinos, 2004). During the 2008-2009 downturn, employment among highly educated persons continued to increase against the prevailing trend (Eurostat, 2009b). The specific career path of higher education graduates is the object of much analysis, although international comparable data is scarce due to lack of tracer studies. Some examples of partial international initiatives are the Careers after Higher Education, an European Research Survey (CHEERS, in 2000) and the Research into Employment and Professional Flexibility (REFLEX, in 2005)<sup>22</sup>.

In May 2009, the Council adopted the following benchmark on the tertiary educational attainment of the population: *the percentage of those aged 30-34 who have successfully completed tertiary level education (ISCED levels 5 and 6) should be at least 40%* <sup>23</sup>(2009/C 119/02). In 2008, the share of 30-34 year olds with tertiary educational attainment was 31%, compared to only 22% in 2000 (Eurostat, LFS).

## **EARLY LEAVERS FROM EDUCATION AND TRAINING**

One of the main targets of the EU policy in the field of education is to lower the number of young people who have left school without an upper secondary education and do not participate in any kind of further education or training. The arguments for employability in relationship to "completion of upper secondary

---

<sup>22</sup> At national level some examples of tracer studies are the UK Destinations of Leavers from HE (DLHE) and the Swedish National Agency for Higher Education surveys.

<sup>23</sup> The related benchmark for 2010 adopted in 2007 (2007/C 311/10) was: *at least 85% of young people (aged 22) should have completed at least upper secondary education.*

education" and "educational attainment of the population" also apply for early leavers from E&T.

Progress in this area is measured through the indicator “percentage of the population aged 18-24 with at most lower secondary education (including ISCED level 3c short) and not in further education and training”, using Eurostat data. The EU-27 average rate of early leavers was 14.9% in 2008. The 2020 benchmark is “*less than 10%*”<sup>24</sup>.

#### **ADULT PARTICIPATION IN LIFELONG LEARNING**

Staying in employment and progressing in career constitute the two main employability challenges of experienced workers. As a result of long term factors (technological change) or short term shocks, skills may become obsolete. Easy access to quality continuous education can therefore improve the employability of adults.

The indicator used to measure performance in this area is “percentage of adults (25-64) who have participated in education and training in the four weeks preceding the LFS survey”. In 2008, almost 10% of 25-64 year olds participated in education and training in the EU-27 (LFS data). The benchmark for 2020 is *at least 15%*<sup>25</sup>. The contribution of lifelong learning to employability is evaluated in detail in Section 4 “Participation in LLL of older and low qualified workers”.

#### **IV. LEARNING OUTCOMES**

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<sup>26</sup>.

When young Europeans are asked about the most useful qualities needed to find a good job, the four main skills mentioned are: communication and teamwork skills, having completed an apprenticeship or training course, IT and computer skills, and knowledge of a foreign language(s) (Gallup, 2007).

---

<sup>24</sup> The related benchmark for 2010 adopted in 2007 (2007/C 311/10) was: *no more than 10%*.

The Education Council has highlighted the importance of key competences for lifelong learning (2006/962/EC). These comprise learning to learn, digital competence, sense of initiative and entrepreneurship, cultural awareness and expression, communication in mother tongue and in foreign language, mathematical competences, basic competences in science and technology and social and civic competences.

## **ADULTS' SKILLS**

Following the Council's request for an indicator in this field (2007/C 311/10), the Adults' skills expert group set up in 2005 identified as key factors literacy, numeracy, ICT skills and certain job-related generic skills. At present, there is no data available on cognitive and transferable skills of the working population. The PIAAC survey was conceived to address this weakness and should provide data by 2013. More details on each skill are provided below.

## **INDICATOR ON MATHEMATICS, SCIENCE AND READING LITERACY**

The indicators on literacy in reading, mathematics and science from the OECD Programme for International Student Assessment (PISA) survey are commonly used as proxies for competences as these indicators gauge cognitive skills that are considered relevant in the workplace. The objective of PISA is to measure what skills and competences students have acquired and can apply to real-world contexts by age 15. This performance is a first indicator of the future worker's cognitive capacity, which is associated with higher employability.

The indicator now being used for monitoring performance in this area is the percentage of low-achieving 15 year olds in reading, mathematics and science literacy in the European Union. The aim is to achieve *less than 15% of low achievers in 2020*<sup>27</sup>. In terms of reading literacy, the EU level was 23.1% in 2006 for the 25 participating EU countries (showing a worsening of 13% with respect to 2000). The average figure of low achievers in mathematics was 24.0% (improving with respect to

---

<sup>25</sup> The related benchmark for 2010 adopted in 2007 (2007/C 311/10) was: *at least 12,5%*;

<sup>26</sup> For a comprehensive description of generic skills see NCVET (2003).

<sup>27</sup> The related benchmark for 2010 adopted in 2007 (2007/C 311/10) was: *to reduce the share of 15 year olds low achievers in reading by 20% compared to 2000.*

2003 data) whereas the average share of low performers in science in the Member States was 20.2% in 2006. Progress in mathematics and science literacy is also measured using the results from the Trends in International Mathematical and Science Study (TIMSS) survey<sup>28</sup>. However, PISA and TIMSS can not be directly compared due to the nature of the tests and the different age groups.

## **LANGUAGE SKILLS**

The ability to communicate in one or several foreign language is highly valued by employers, in particular considering the trends in terms of globalization and increased exposure of enterprises to external markets.

In the area of communication in foreign languages no data are currently available. However the forthcoming European survey on language competences will provide data on pupils' foreign language skills in 2012. Until then, performance is evaluated through data on teaching in foreign languages. At present, it is obligatory to learn at least one foreign language in compulsory education and a second foreign language is often optional (EACEA/Eurydice/Eurostat, 2008). In 2007, 50.5% of lower secondary students and 60.2% of upper secondary students in general education were learning at least two foreign languages (European Commission, 2009a). Following up the March 2002 Barcelona European Council conclusions, the Council invited in May 2009 the Commission to submit by the end of 2012 a proposal for a possible benchmark in this area (2006/C 172/01).

## **ICT SKILLS**

Information and communication technology (ICT) skills are among the transferable skills most demanded by the employers (Korte et al., 2010). The pace of technological innovation requires that E&T systems would provide increased opportunities to acquire and develop those skills. The IEA SITES study (Law et al., 2008) investigates to what extent ICT is used in education and how it supports and enhances teaching practice. Other sources of information are the European

---

<sup>28</sup> The 2007 survey was the fourth survey on comparative assessments in mathematics and science achievement at the fourth (10-11 year olds) and eighth (14-15 year olds) grades. The survey is carried out every four years.

Schoolnet's publications (such as the 2006 *ICT impact report*) and projects (such as the Study on Technology's impact in Primary Schools (STEPS)).

At European level, the current way of measuring ICT competences among adults refer to actual use and training received. Eurostat compiles data on ICT usage in enterprises as well as in households and by individuals through two annual surveys (European Commission, 2009a). In 2007, one third of the individuals judged their computer skills sufficient if they were to look for a job or change jobs within a year (Eurostat data, EU27 average).

### **CIVIC SKILLS**

Civic skills comprise all forms of behaviour that allow individuals to participate in an effective and constructive way in social and working life. The core skills of this competence include the ability to communicate constructively in different environments, to show tolerance, express and understand different viewpoints and to negotiate with the ability to create confidence (2006/962/EC). All these soft skills are valued by employers and therefore E&T system should facilitate their adoption.

Research in this field is limited due to lack of data. The International Association for the Evaluation of Educational Achievements carried out in 1999 an International Civic and Citizenship Education Study (ICCS). The second round of the study has been completed in 2009. The European Commission and CRELL have been active particularly in relationship to the development of a European Module within the survey. An international report on results will be released by June 2010.

### **LEARNING TO LEARN SKILLS**

Learning to learn is the ability to pursue and persist in learning. This competence means gaining, processing and assimilating new knowledge and skills as well as seeking and making use of guidance. Employers seek these capacities in new candidates, as they lead to higher productivity and adaptability to technical and institutional changes. Recognizing the lack of relevant data, the Council invited the Commission to develop an indicator in this field (2007/C 311/10). The development work is ongoing.



## REFERENCES

- Arjona Perez, E., Garrouste, C. and Kozovska, K. (2010). Towards a benchmark on the contribution of Education and Training to employability: a discussion note. *JRC Scientific and Technical Report, EUR 24147*. Luxembourg: Publications Office of the European Union.
- Bassanini, A., Booth, A., Brunello, G., De Paola, M. and Leuven, E. (2005). Workplace training in Europe. *IZA Discussion Paper No. 1640*. Bonn: Institute for the Study of Labor (IZA).
- Bertelsmann Foundation (2009). The economic costs of inadequate education: a macroeconomic calculation of the dynamic growth effects of lacking education competence. IFO project. Available online [http://www.cesifo-group.de/portal/page/portal/ifoHome/a-rts/a4proj/\\_proj?item\\_link=proj-hi-bertelsmann-09.htm](http://www.cesifo-group.de/portal/page/portal/ifoHome/a-rts/a4proj/_proj?item_link=proj-hi-bertelsmann-09.htm)
- Blitz, B. (2003). From Monnet to Delors: Educational co-operation in the European Union. *Contemporary European History*, 12(2), 1-16.
- Brine, J. (2006). Lifelong learning and the knowledge economy: those that know and those that do not – the discourse of the European Union. *British Educational Research Journal*, 32(5), 649-65.
- Bonnet, G. et al. (2006). *Final report of the learning to learn expert group to the European Commission*. Directorate General Education and Culture A.6, European Commission, Paris/Brussels/Ispra.
- Bordeaux Communiqué on enhanced European cooperation in vocational education and training (2008). Communiqué of the European Ministers for vocational education and training, the European social partners and the European Commission, meeting in Bordeaux on 26 November 2008 to review the priorities and strategies of the Copenhagen process. Available online [http://ec.europa.eu/education/lifelong-learning-policy/doc/bordeaux\\_en.pdf](http://ec.europa.eu/education/lifelong-learning-policy/doc/bordeaux_en.pdf)
- Cedefop (2004). *Workplace learning: reaching those with low skills and older workers*. Thessaloniki: European Centre for the Development of Vocational Training.
- Cedefop (2008). *Evaluation of Eurostat education, training and skills data sources*. Luxembourg: Office for Official Publications of the European Communities.
- Cedefop (2010a). *New skills for new jobs: Action now*. A Report by the expert group on New Skills for New Jobs prepared for the European Commission. Available online [http://ec.europa.eu/education/focus/focus2043\\_en.htm](http://ec.europa.eu/education/focus/focus2043_en.htm)

- Cedefop (2010b). *The skill matching challenge. Analysing skills mismatch and policy implications*. Luxembourg: Publications Office of the European Union. Available online [http://www.cedefop.europa.eu/EN/Files/3056\\_en.pdf](http://www.cedefop.europa.eu/EN/Files/3056_en.pdf)
- Cedefop (2010, forthcoming). *Skill supply and demand in Europe: Medium-term forecast up to 2020*. Luxembourg: Publications Office of the European Union.
- Collier, W., Green, F., and Young-Bae, K. (2007). Training and establishment survival. *SSDA Research Report 20*. Wath-upon-Deerne: Sector Skills Development Agency.
- Cooke, L.P. (2003). A comparison of initial and early life course earnings of the German secondary education and training systems. *Economics of Education Review*, 22(1), pp 78-88.
- Delors, J. (1996). *Learning: The Treasure Within*. Paris: UNESCO.
- Education Council (2006). *Recommendation of the European Parliament and of the Council of 18 December 2006 on key competences for lifelong learning*. (2006/962/EC). Official Journal of the European Union of 30 December. Available online [http://ec.europa.eu/education/lifelong-learning-policy/doc42\\_en.htm](http://ec.europa.eu/education/lifelong-learning-policy/doc42_en.htm)
- Employment Committee (2009). *Employment Guidelines 2009 – Indicators for monitoring and analysis – endorsed by EMCO 24/06/09*. EMCO Report No.1. Available online <http://www.ec.europa.eu/social/BlobServlet?docId=3643&langId=en>
- EACEA/Eurydice (2009). *Early childhood education and care in Europe: Tackling social and cultural inequalities*. Brussels: Eurydice.
- EACEA/Eurydice/Eurostat. (2008). *Key data on teaching languages at school in Europe, 2008 Edition*. Brussels: Eurydice.
- European Commission (2000). *A Memorandum on lifelong learning*. Commission Staff Working Paper SEC(2000)1832. Available online. [http://ec.europa.eu/education/lifelong-learning-policy/doc/policy/memo\\_en.pdf](http://ec.europa.eu/education/lifelong-learning-policy/doc/policy/memo_en.pdf)
- European Commission (2001). *Making a European Area of Lifelong Learning a reality*. Communication from the Commission. COM(2001)678 final. Available online <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2001:0678:FIN:EN:PDF>
- European Commission (2008a). *New Skills for New Jobs: Anticipating and matching labour market and skills needs*. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. COM (2008) 868 final. Available online [http://ec.europa.eu/education/lifelong-learning-policy/doc/com868\\_en.pdf](http://ec.europa.eu/education/lifelong-learning-policy/doc/com868_en.pdf)

- European Commission (2008b). *Progress towards the Lisbon Objectives in Education and Training. Indicators and Benchmarks 2008*. Commission Staff Working Document SEC(2008)2293. Available online [http://ec.europa.eu/education/lifelong-learning-policy/doc/report08/report\\_en.pdf](http://ec.europa.eu/education/lifelong-learning-policy/doc/report08/report_en.pdf)
- European Commission (2008c). *Migration & mobility: challenges and opportunities for EU education systems*. Green Paper COM(2008)423 final. Available online [http://ec.europa.eu/education/school21/com423\\_en.pdf](http://ec.europa.eu/education/school21/com423_en.pdf)
- European Commission (2009a). *Progress towards the Lisbon Objectives in Education and Training. Indicators and Benchmarks 2009*. Commission Staff Working Document SEC(2009)1616. Available online [http://ec.europa.eu/education/lifelong-learning-policy/doc1951\\_en.htm](http://ec.europa.eu/education/lifelong-learning-policy/doc1951_en.htm)
- European Commission (2009b). *Promoting the learning mobility of young people*. Green Paper COM(2009) 329 final. Available online [http://ec.europa.eu/education/lifelong-learning-policy/doc/mobility/com329\\_en.pdf](http://ec.europa.eu/education/lifelong-learning-policy/doc/mobility/com329_en.pdf)
- European Commission (2010a). *Europe 2020 strategy. A strategy for smart, sustainable and inclusive growth*. COM(2010)2020. Available online. [http://ec.europa.eu/eu2020/index\\_en.htm](http://ec.europa.eu/eu2020/index_en.htm)
- European Commission (2010b). *Commission Work Programme 2010: Time to act*. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of Regions. COM(2010)135 final. Available online [http://ec.europa.eu/atwork/programmes/docs/cwp2010\\_en.pdf](http://ec.europa.eu/atwork/programmes/docs/cwp2010_en.pdf)
- European Commission/NESSE (2008). *Education and Migration. Strategies for integrating migrant children in European schools and society*. An independent report submitted to the European Commission by the NESSE network of experts. Available online [http://ec.europa.eu/education/school-education/doc2270\\_en.htm](http://ec.europa.eu/education/school-education/doc2270_en.htm)
- European Commission/NESSE (2009). *Early childhood education and care. Key lessons from research for policy makers*. An independent report submitted to the European Commission by the NESSE network of experts. Available online [http://ec.europa.eu/education/news/news1697\\_en.htm](http://ec.europa.eu/education/news/news1697_en.htm)
- European Council (2000). *Lisbon European Council 23 and 24 March 2000. Presidency Conclusions*. Available online [http://www.europarl.europa.eu/summits/lis1\\_en.htm#a](http://www.europarl.europa.eu/summits/lis1_en.htm#a)
- European Council (2003). *Council Conclusions of May 2003 on reference levels of European average performance in education and training (Benchmarks)*. (2003/C 134/02). Official Journal of the European Union of 7 June. Available online <http://eur-lex.europa.eu/JOHtml.do?uri=OJ:C:2003:134:SOM:en:HTML>

- European Council (2005). *Council Conclusions of 24 May 2005 on new indicators in education and training*. (2005/C 141/04). Official Journal of the European Union of 10 June. Available online <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2005:141:0007:0008:EN:PDF>
- European Council (2006). *Council conclusions on the European indicator of language competence*. (2006/C 172/01). Official Journal of the European Union of 25 June. Available online <http://eur-lex.europa.eu/JOHtml.do?uri=OJ:C:2006:172:SOM:en:HTML>
- European Council (2007). *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). Official Journal of the European Union of 21 December. Available online <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2007:311:0013:0015:EN:PDF>
- European Council (2008). *Draft 2008 Joint Progress Report of the Council and the Commission on the Implementation of the “Education & Training 2010” work programme “Delivering lifelong learning for knowledge, creativity and innovation”*. (EDUC 29/SOC 46). Available online [http://ec.europa.eu/education/lifelong-learning-policy/doc/nationalreport08/council\\_en.pdf](http://ec.europa.eu/education/lifelong-learning-policy/doc/nationalreport08/council_en.pdf).
- European Council (2009). *Council conclusions of 12 May 2009 on a strategic framework for European cooperation in education and training (“ET 2020”)*. 2009/C 119/02. Official Journal of the European Union of 28 May. Available online <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2009:119:0002:0010:en:PDF>
- European Council (2010). *Conclusions of the European Council of 25/26 March 2010*. EUCO 7/10. Available online [http://www.consilium.europa.eu/ueDocs/cms\\_Data/docs/pressData/en/ec/113591.pdf](http://www.consilium.europa.eu/ueDocs/cms_Data/docs/pressData/en/ec/113591.pdf).
- European Schoolnet (2006). *The ICT impact report. A review of studies of ICT impact on schools in Europe*. Available online [http://ec.europa.eu/education/pdf/doc254\\_en.pdf](http://ec.europa.eu/education/pdf/doc254_en.pdf)
- Eurostat (2009a). *Youth in Europe. A statistical portrait*. Luxembourg: Publications Office of the European Union.
- Eurostat (2009b). *The impact of the crisis on employment*. Statistics in Focus 79/2009. Luxembourg: Publications Office of the European Union.
- Fersterer, J., and Winter-Ebmer, R. (2003). Are Austrian returns to education falling over time? *Labour Economics*, 10, 73–89.

- Gallup (2007). *The 2007 Flash Eurobarometer. Youth survey among people aged between 15-30, in the European Union. Analytical Report*. Flash Eurobarometer Series n. 202.
- Gangl, M. (2002). Changing labour markets and early career outcomes: labour market entry in Europe over the past decade. *Work, Employment and Society*, 16, 67–90.
- Gundlach, E., Woessmann, L., and Gmelin, J. (2001). The Decline of schooling productivity in OECD countries. *Economic Journal*, 111 (471), C135-C147.
- Hanushek, E. A. (1986). The Economics of schooling: production and efficiency in public schools. *Journal of Economic Literature*, 24 (3), 1141-1177.
- Hanushek, E. A. (2002). Publicly provided education. In: A. J. Auerbach and M. Feldstein (Eds.) *Handbook of Public Economics, Volume 4*. Amsterdam, London and New York: Elsevier.
- Hanushek, E. A. (2003). The Failure of input-based schooling policies. *Economic Journal* 113 (485): F64-F98.
- Heckman, J. J., and Masterov, D.V. (2007). The productivity argument for investing in young children. *Review of Agricultural Economics*, 29(3) 446-493.
- Holford, J. (2007). *The European Union's Lifelong Learning policies: A review. LLL2010 SP1 Report*. LLL2010 Working Paper No 14. Tallinn: LLL2010 Project Consortium.
- Holford, J., Riddell, S., and Weedon, E. (2007). *Lifelong Learning: Patterns of policy in thirteen European countries. LLL2010 SP1 Comparative Report*. LLL2010 Working Paper No16, Project Report No.1. Tallinn: LLL2010 Project Consortium.
- Korpi, T., de Graaf, P., Hendrickx, J. and Layte, R. (2003). Vocational training and career employment precariousness in Great Britain, the Netherlands and Sweden. *Acta Sociologica*. 46, 17–30.
- Korte, B.W., Hüsing, T., Cattaneo, G., Kolding, M., Lifonti, R. and IDC Government Insights (Eds) (2010). *Monitoring e-skills demand and supply in Europe. Current situation, scenarios and future development forecasts until 2015*. A publication of European “Monitoring e-Skills Demand and Supply in Europe” Study. Bonn: European Commission. Available online [www.eskills-monitor.eu](http://www.eskills-monitor.eu)
- Kuczera, M. (2008). *VET in PISA. Results from PISA 2003 and 2006*. Paris: OECD.
- Law, D.N., Pelgrum, W.J. and Plomp, T. (Eds.) (2008). *Pedagogy and ICT use in schools around the world. Findings from the IEA SITES 2006 Study*. Hong Kong: CERC-Springer.

- Monks, J. (1998). The effect of uncertain returns on human capital investment. *Atlantic Economic Journal*, 26(4), 413-19.
- Müller, W. and M. Gangl (2003). The transition from school to work: a European perspective. In Müller, W. and M. Gangl (Eds.). *Transition from Education to Work in Europe*. Oxford: Oxford University Press.
- NCVER (2003). *Defining generic skills. At a Glance*. Adelaide: Australian National Training Authority.
- OECD (2006). *Live longer, work longer*. Paris: OECD.
- OECD (2009a). *Education at a glance, 2009. OECD Indicators*. Paris: OECD.
- OECD (2009b). *Creating effective teaching and learning environments: First results from TALIS*. Paris: OECD.
- OECD (2010, forthcoming). *Learning for Jobs. OECD policy review of Vocational Education and Training. Comparative report*. Paris: OECD. National reports available online [www.oecd.org/edu/learningforjobs](http://www.oecd.org/edu/learningforjobs)
- Psacharopoulos, G. and Patrinos, H.A. (2004). Returns to investment in education: a further update. *Education Economics*, 12 (2), 111-134.
- 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). Available online. [www.eenee.de/doc/employability.pdf](http://www.eenee.de/doc/employability.pdf).
- Quintini, G., Martin, J. and Martin, S. (2007). The changing nature of the school-to-work transition process in OECD countries. *IZA Discussion Paper No. 2582*. Bonn: Institute for the Study of Labor (IZA).
- Ryan, P. (2001). The school-to-work transition: A cross-national perspective. *Journal of Economic Literature*, 39 (1), 34-92.
- Sattinger, M. (1993). Assignment models of the distribution of earnings. *Journal of Economic Literature*, 31, 851-880.
- Soriano, V., Grunberger, A. and Kyriazopoulou, M. (2009). *Multicultural diversity and special needs education*. Odense: European Agency for Development in Special Needs Education.
- Stuart, M. and Greenwood, I. (2006). National and European Policies for Lifelong Learning: an assessment of developments within the context of the European Employment Strategy. In M. Kuhn and R.G. Sultana (Eds.), *Homo Sapiens Europaeus? Creating the European Learning Citizen*. New York: Peter Lang.

- UNESCO Institute for Statistics (2008). *Survey 2010 Data collection on education statistics. Instruction manual for completing the questionnaires on statistics of education*. Montreal: UNESCO.
- van der Velden, R. K. and Wolbers, M. H. (2008). A framework for monitoring transition systems. *OECD Education Working Papers, No. 20*. Paris: OECD
- van de Werfhorst, H. (2001). *Field of study and social inequality. Four types of educational resources in the process of stratification in the Netherlands*. ICS-dissertation, University of Nijmegen.
- Woessmann, L. (2002). Schooling and the quality of human capital. *Kiel Studies 319*. Berlin: Springer.
- Wolbers, M. (2002). Job mismatches and their labour market effects among school-leavers in Europe. In I. Kogan and W. Müller (Eds) *School-to-work transitions in Europe: Analyses of the EULFS 2000 ad hoc module*. Mannheim: Mannheimer Zentrum für Europäische Sozialforschung.



European Commission

**EUR 24624 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: In-depth analysis of key issues

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

Luxembourg: Publications Office of the European Union

2010 –61 pp. – 21 x 29,70 cm

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

ISBN 978-92-79-18698-1

doi:10.2788/49575

**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. After the discussion note (EUR 24147 EN 2010), this report constitutes the second step towards the selection of an indicator to be proposed as benchmark. The six alternative options retained by the Expert Group on the Education for Employability Benchmark are reviewed one by one in more details.

**ACKNOWLEDGMENTS**

The authors are grateful for the very useful comments received from L. Jakobsen (DG EAC), C. Maier (DG EMPL), A. Stimpson (Cedefop) and 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-24624-EN-C

