



**3rd IEA International Research Conference (IRC-2008)
Taipei, 18 - 20 September 2008**

**Measuring progress and performance of education systems
in the European Union
Present and future role of IEA surveys and studies**

Dr. Anders Joest Hingel

**European Commission
Directorate General Education and Culture**

Plan of the speech

- ❖ **Monitoring progress of education systems in European policies**
- ❖ **The coherent framework of indicators and benchmarks**
- ❖ **The 2008 Progress Report on education and training**
- ❖ **Development of new indicators and international surveys**
- ❖ **The need for secondary analysis**



The Lisbon strategy (2000 - 2010)



“By 2010 ‘Europe should become the most competitive and dynamic knowledge based economy in the world, capable of sustainable economic growth, with more and better jobs and greater social cohesion.’”

- A co-ordinated strategy (by European Council Spring summits)
- A comprehensive strategy with common objectives
- Implementation through the Open Method of Co-ordination
 - Guidelines for the Union
 - Indicators and benchmarks
 - Exchange of good practice
 - Peer reviews and mutual learning processes

The Lisbon strategy and Education and Training



- **Strategic objectives of education and training systems in Europe**
- **“Copenhagen process” of enhanced cooperation in vocational education and training**
- **The “Bologna process” in Higher Education**
- **Lifelong Learning Strategy**

EU cooperation in the field of education



- 33 European countries participate in the Lisbon follow up
- 30 non-EU countries participate in higher education cooperation - Eastern- Europe, Central Asia, North Africa and the Middle East, Western Balkans. (Tempus, Erasmus Mondus)
- Bilateral cooperation agreements with: USA, Canada, Australia, New Zealand, Japan, Korea.

EU Education average performance level in a neighbouring countries perspective (EU-27 average : 100%)



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Equivalent to EU27
Average

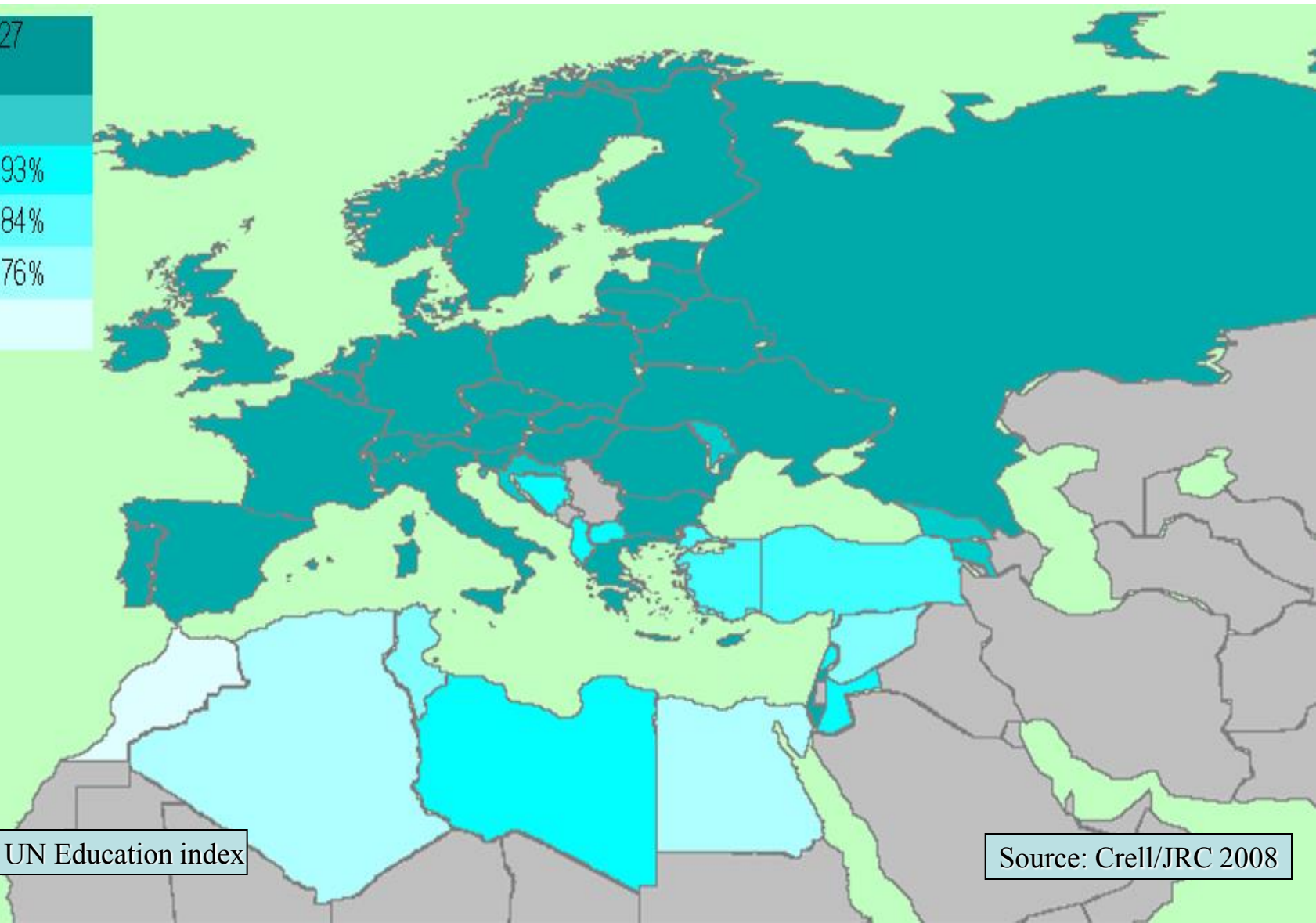
Above 94%

Between 89 and 93%

Between 76 and 84%

Between 70 and 76%

Less than 60%



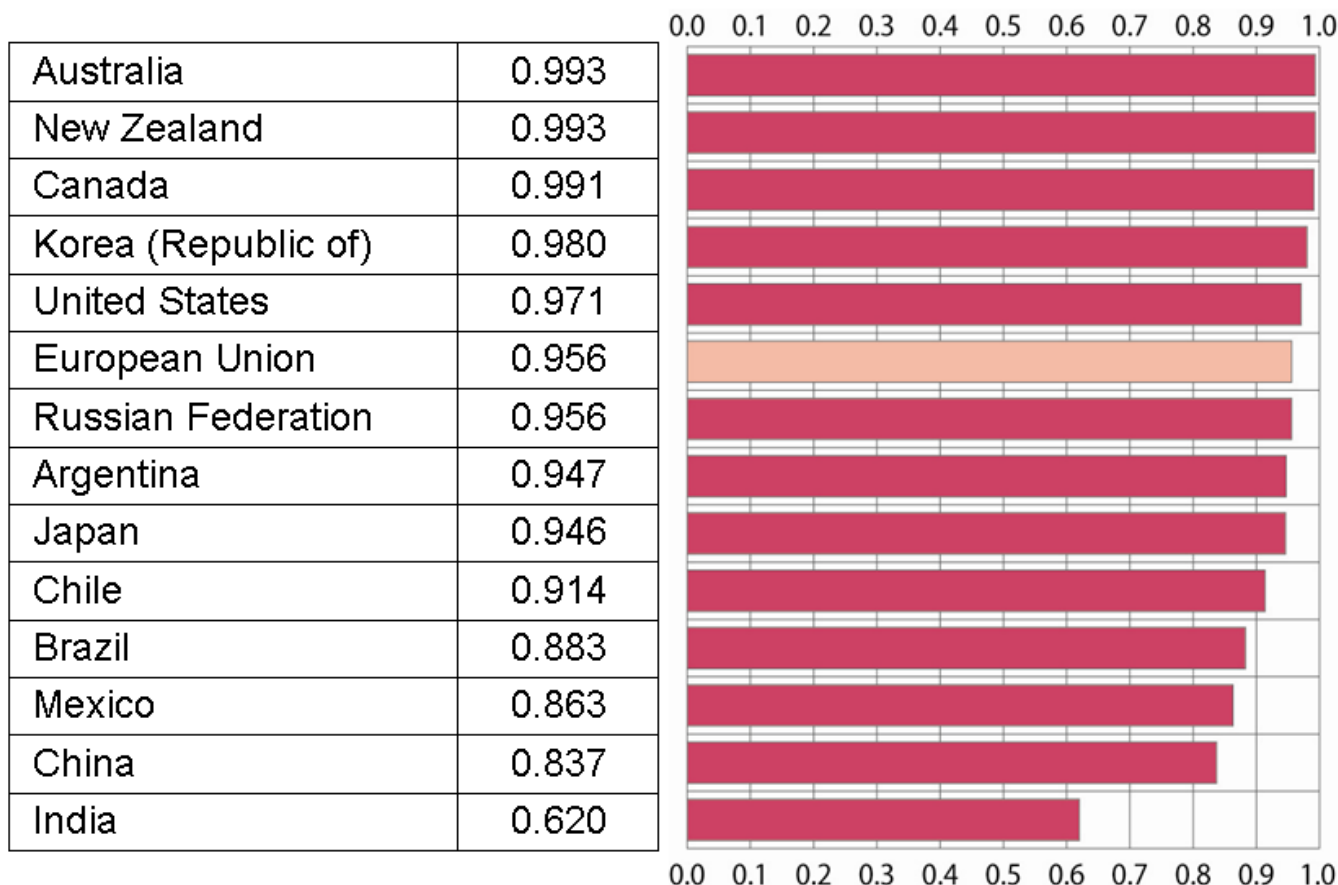
Data source; UN Education index

Source: Crell/JRC 2008

EU Education performance in a Worldwide perspective (UN education index - 2005)



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Monitoring and Analysing Progress

FIVE EUROPEAN BENCHMARKS FOR 2010

- 10% Early school leavers (young people)**
- 20 % Less low performers in reading literacy**
- 15% More new Math, Science and Technology graduates**
- 85 % Upper secondary graduates (young people)**
- 12.5% Lifelong learning participation (adults)**

SIXTEEN CORE INDICATORS

- | | |
|--|---|
| <ul style="list-style-type: none">1. Participation in pre-school education2. Special needs education3. Early school leavers4. Literacy in reading, maths and science5. Language skills6. ICT skills7. Civic skills8. Learning to learn skills | <ul style="list-style-type: none">9. Upper secondary completion rates of young people10. Professional development of teachers11. Higher education graduates12. Cross-national mobility of students13. Participation of adults in lifelong learning14. Adults' skills15. Educational attainment of the population16. Investment in education and training |
|--|---|

Eight key competencies

- **1) Communication in the mother tongue;**
- **2) Communication in foreign languages;**
- **3) Mathematical science and technology competence;**
- **4) Digital competence;**
- **5) Learning to learn;**
- **6) Social and civic competences;**
- **7) Sense of initiative and entrepreneurship; and**
- **8) Cultural awareness and expression.**



Annual Progress Report (2008)



1. Making lifelong learning a reality
2. Developing school education
3. Developing vocational education and training
4. Developing higher education
5. Key competences for lifelong learning
6. Improving equity in education and training
7. Employability
8. Investment in education and training

Prepared by

DG EAC

in cooperation with:

CRELL/JRC

EUROSTAT

EURYDICE

CEDEFOP



Main messages of the 2008 report



EDUCATION AND TRAINING IN THE EU IS IMPROVING SLOWLY BUT STEADILY.

However

- Only the benchmark on MST graduates is likely to be exceeded.
- Low performance in reading literacy has increased by more than 10% between 2000 and 2006 and has reached 24.1 %.

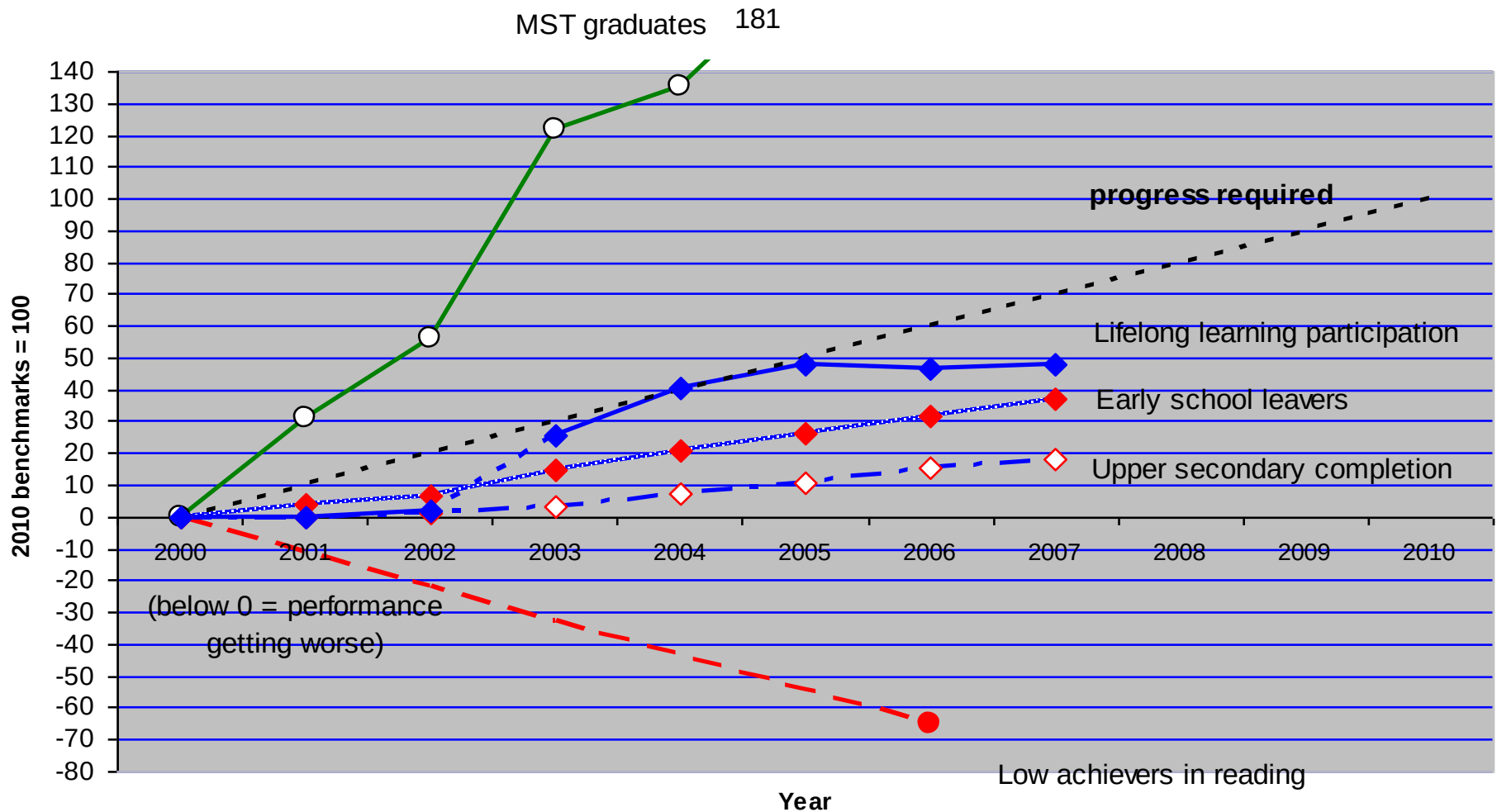
PARTICIPATION IN LIFELONG LEARNING IS BECOMING A REALITY IN IN SOME COUNTRIES WHICH HAVE DEVELOPED COMPREHENSIVE AND COHERENT LIFELONG LEARNING STRATEGIES.

THERE ARE STILL IMPORTANT INEQUITIES IN EUROPEAN EDUCATIONAL SYSTEMS.



Progress of performance Five European Benchmarks for 2010

Progress towards meeting the 5 benchmarks (EU average)



Inequity still a reality in educational systems in the EU

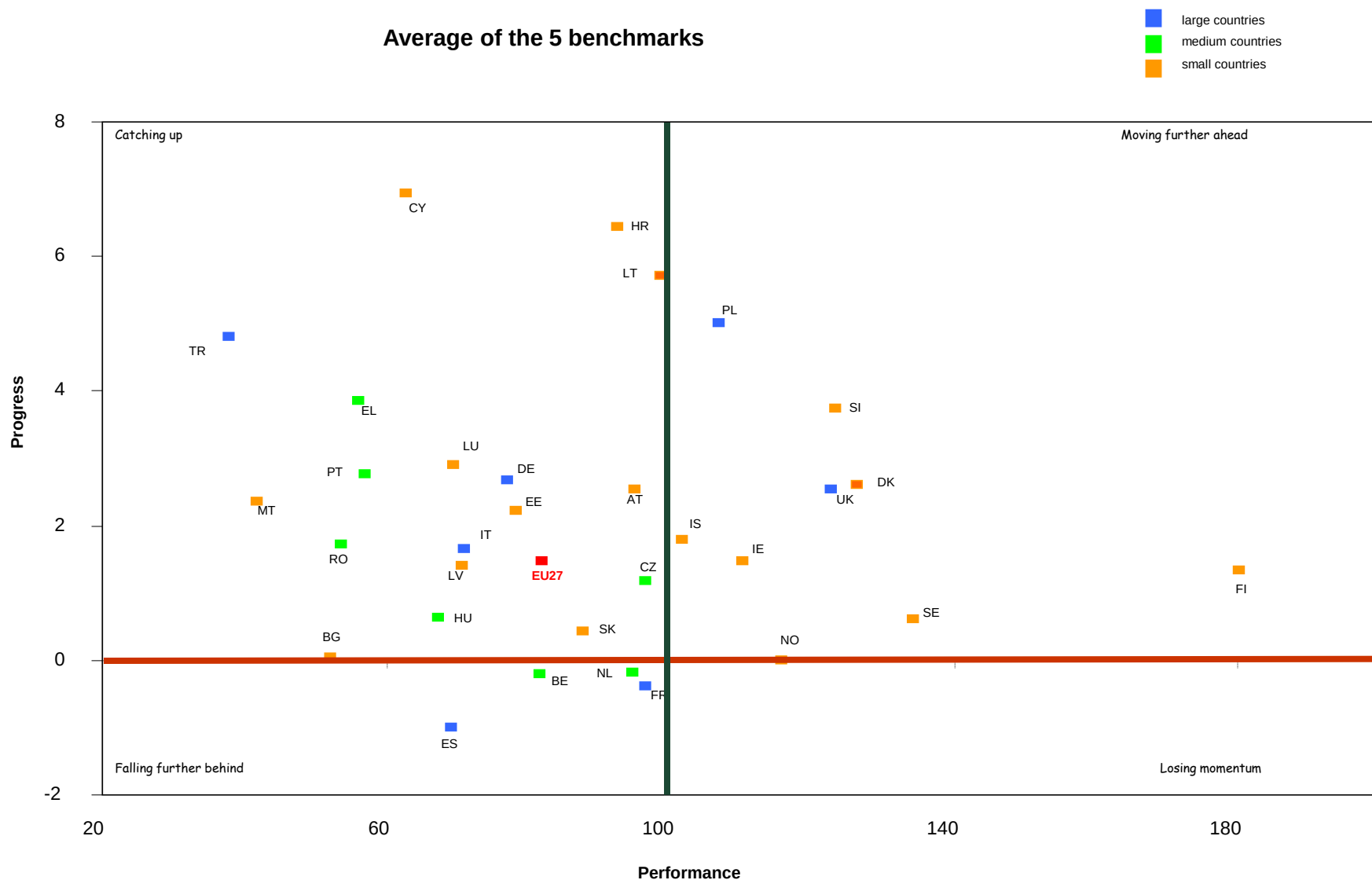
- ❖ **1 in 7 (6 million young people, 18-24 years old) have only achieved compulsory education or less.**
- ❖ **Adults are 3 times more likely to participate in lifelong learning if they have completed at least upper secondary education.**
- ❖ **1 in 7 of the 4 year-olds are not enrolled in education**
- ❖ **Gender inequalities remain.**
 - Boys** do less well at reading and have more special education needs.
 - Girls** do less well at mathematics and women are underrepresented among mathematics, science and technology students and graduates.



Average levels of country performance (2006) and progress (2000-2006) across the five benchmark areas



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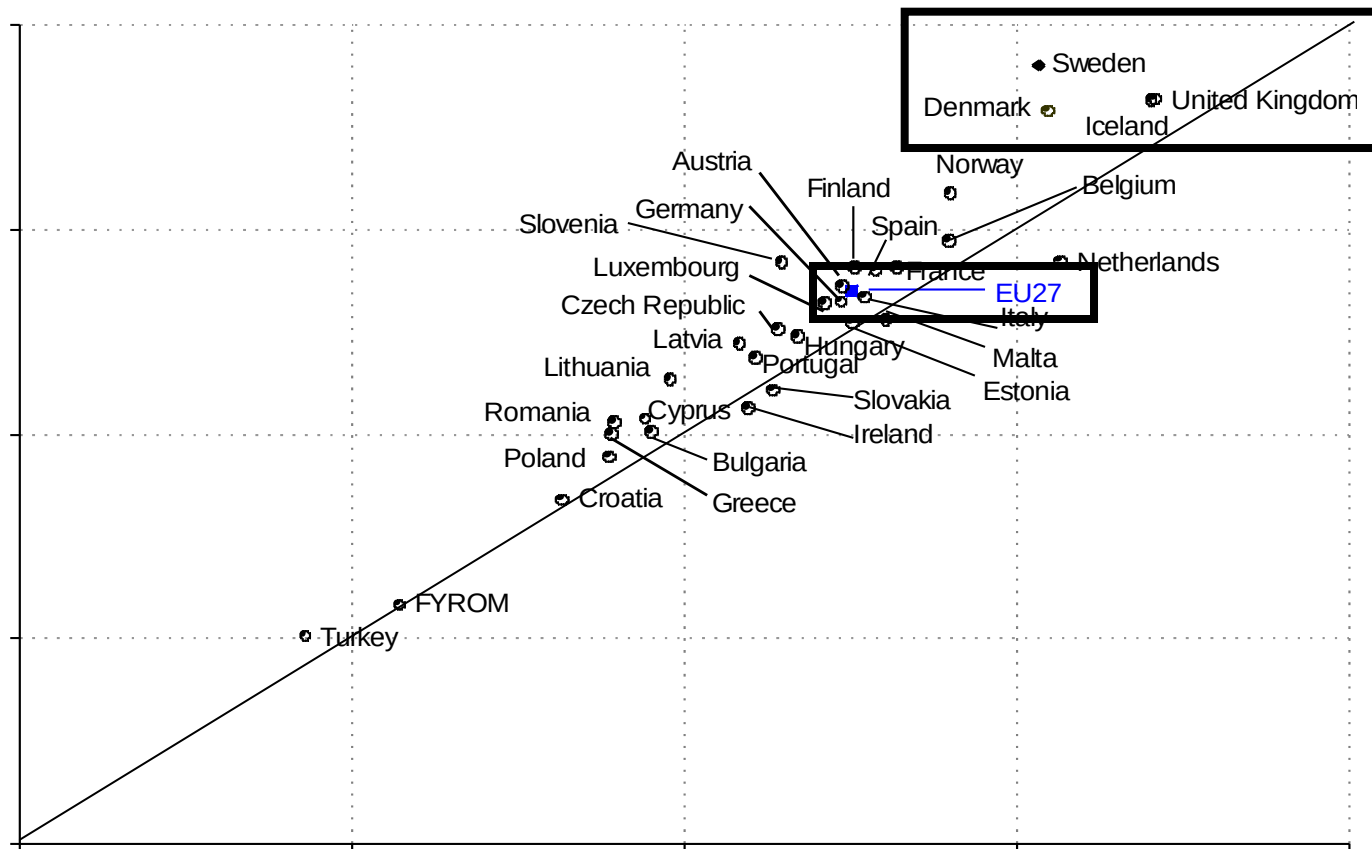


« Making Lifelong Learning a Reality »

A Composite indicator on lifelong participation



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Data source: Eurostat

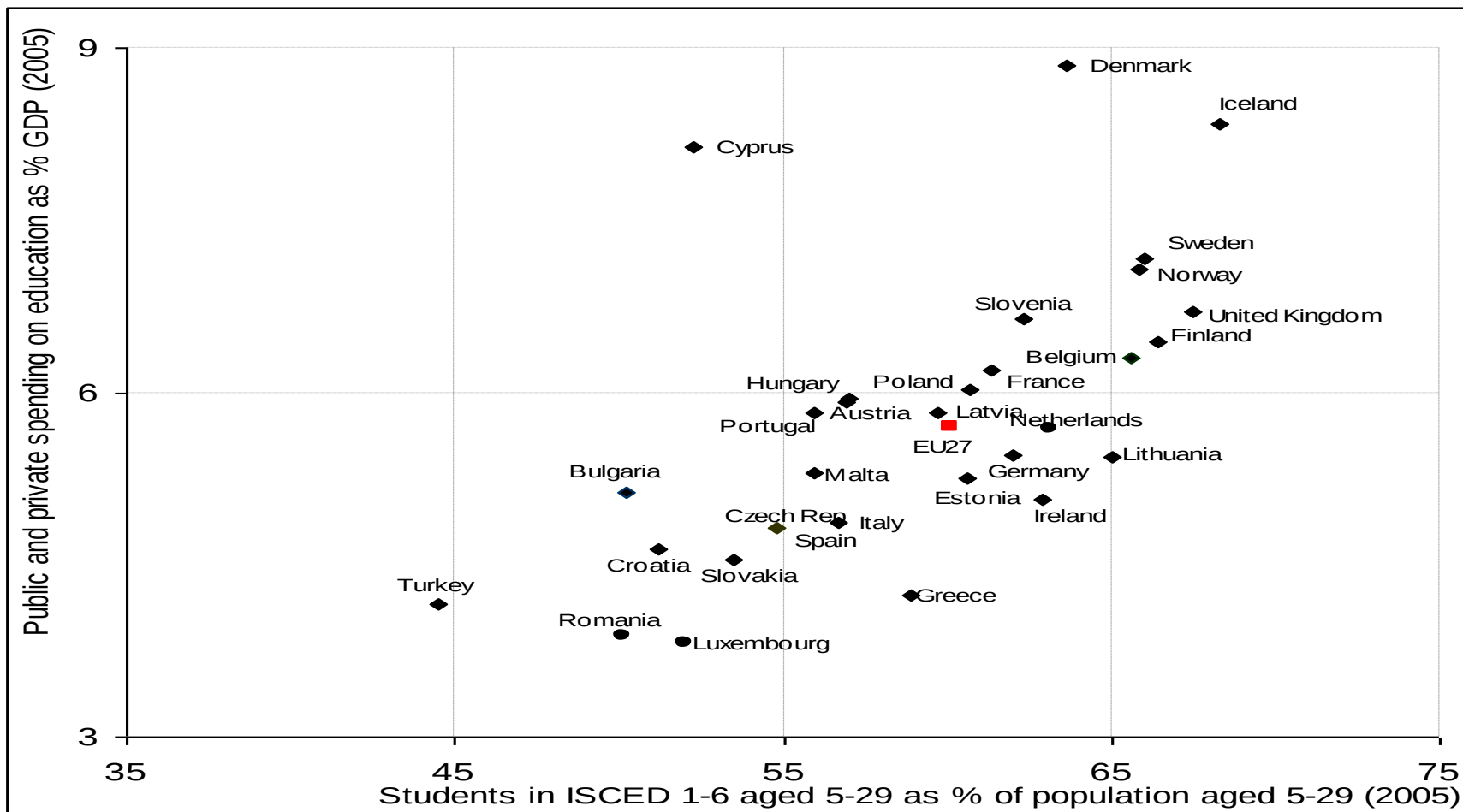
Crell/JRC, 2008



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



Education and Culture



The four-pillars of learning

Learning to Know

By combining a sufficiently **broad general knowledge** with the opportunity to work in depth on a small number of subjects. This also means **learning to learn** so as to benefit from the opportunities provides throughout life.

Learning to Do

In order to acquire not only an **occupational skill** but also, more broadly, the competence to deal with many situations and work in teams. It also means **learning to do in the context of young people's various social and work experiences** which may be informal, as a result of the local or national context, or formal, involving courses, alternating study and work.

Learning to Live Together

By developing **an understanding of other people and an appreciation of interdependence** — carrying out joint projects and learning to manage conflicts — in a spirit of **respect for the values of pluralism, mutual understanding and peace.**

Learning to Be

So as better to develop one's personality and be able to act with even **greater autonomy, judgment and personal responsibility.** In that connection, education must not disregard any aspect of a person's potential: memory, reasoning, aesthetic sense, physical capacities and communication skills.

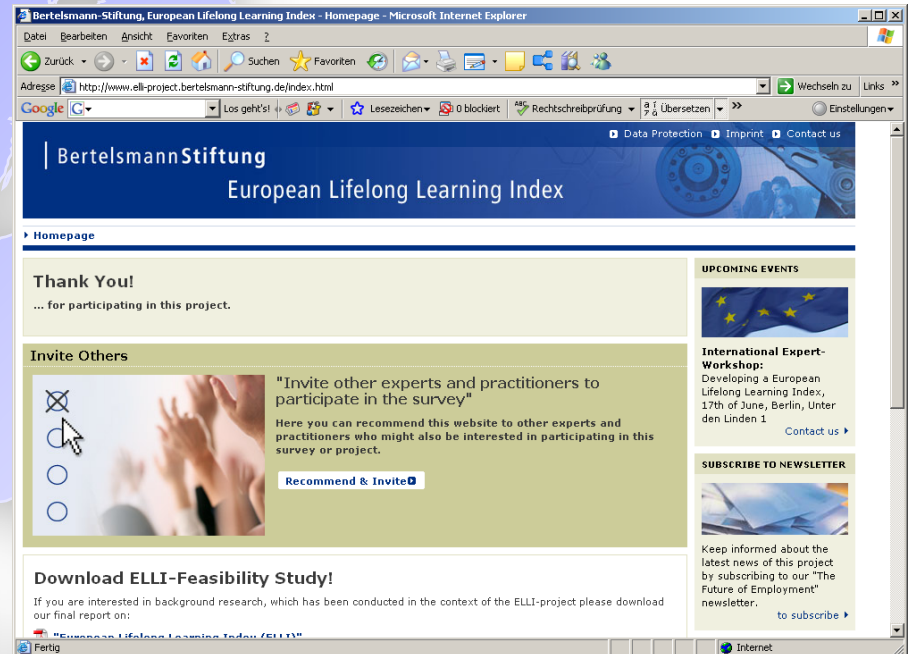
(DELORS ET AL., 1996: 37)

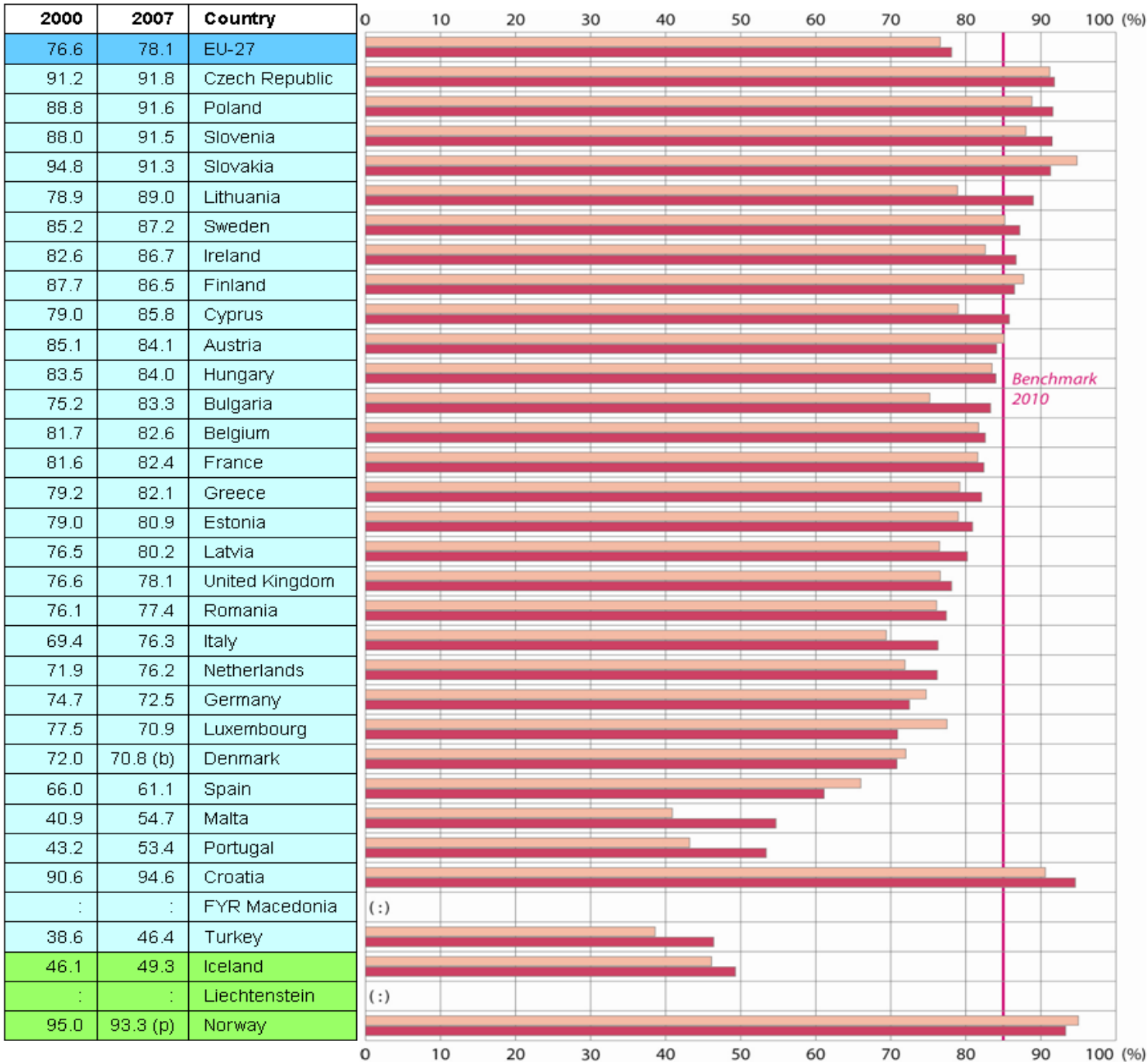


The European Learning index - the ELLI project

www.elli.org

www.elli-project.bertelsmann-stiftung.de



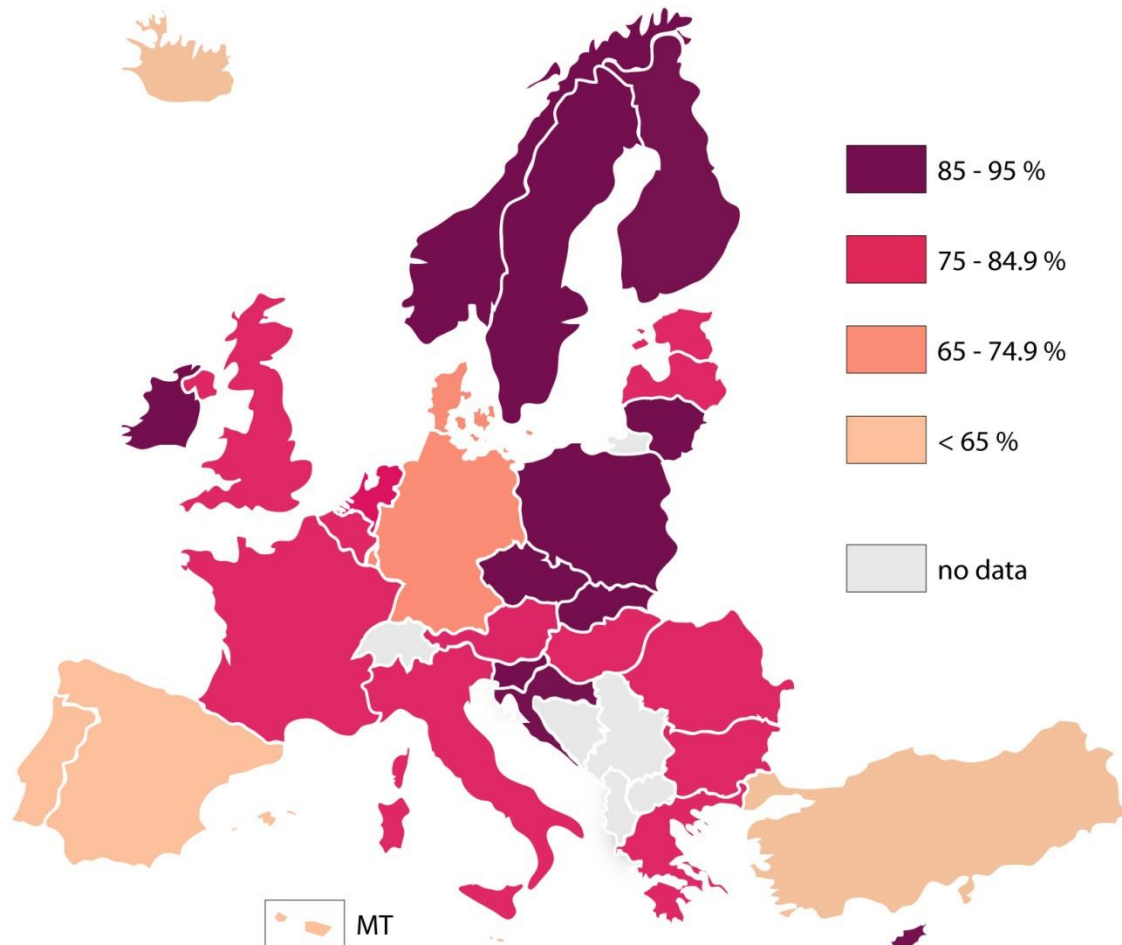


Education and Culture

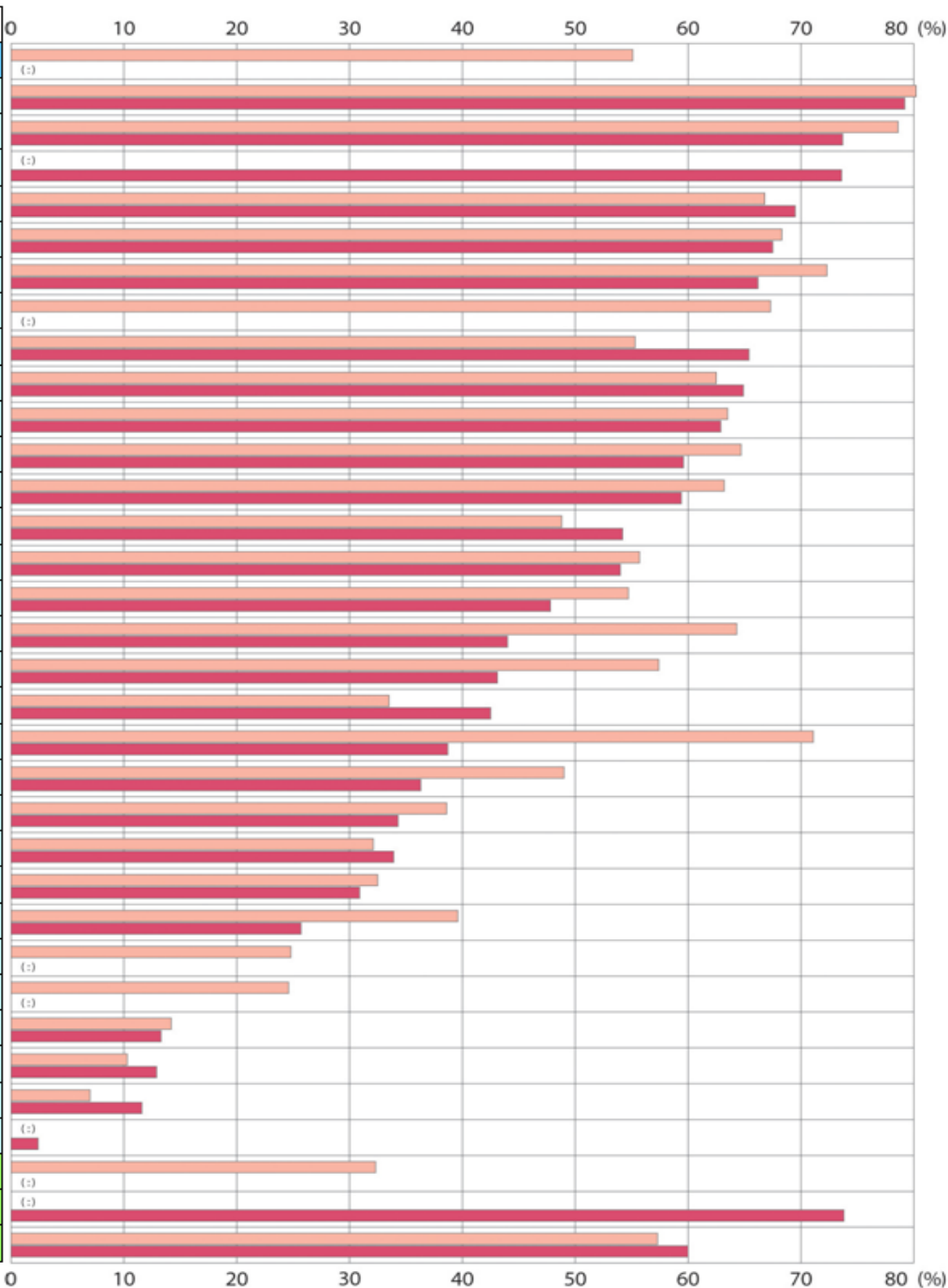
Upper secondary graduates

Percentage of the population aged 20-24 having completed at least upper-secondary education

Percentage of the population (20-24) having completed at least upper secondary education by group of countries, 2006



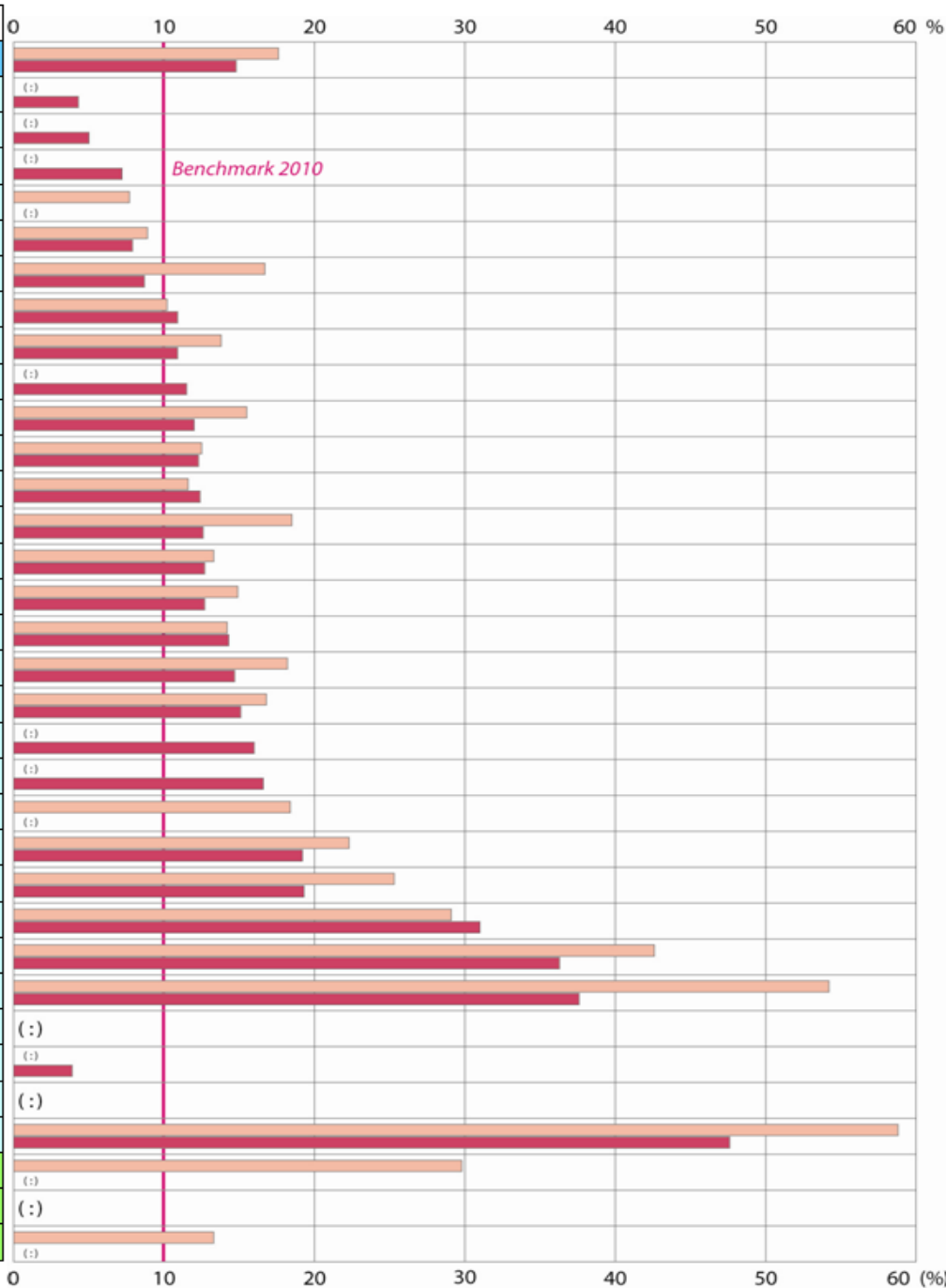
2000	2006p	Country
55.1	:	EU-27
80.2	79.2	Czech Rep.
78.6	73.7	Slovakia
:	73.6	Croatia
66.8 i	69.5	Belgium
68.3	67.5	Netherlands
72.3	66.2	Slovenia
67.3 i	:	United Kingdom
55.3	65.4	Finland
62.5	64.9	Romania
63.5	62.9	Luxembourg
64.7	59.6	FYR Macedonia
63.2	59.4	Germany
48.8	54.2	Sweden
55.7	54	Bulgaria
54.7	47.8	Denmark
64.3	44	Poland
57.4	43.1	France
33.5	42.5	Spain
71.1	38.7	Austria
49	36.3	Turkey
38.6	34.3	Latvia
32.1	33.9	Greece
32.5	30.9	Estonia
39.6	25.7	Lithuania
24.8	:	Malta
24.6	:	Italia
14.2	13.3	Cyprus
10.3	12.9	Hungary
7	11.6	Portugal
:	2.4	Ireland
32.3	:	Iceland
:	73.8	Lichtenstein
57.3	60	Norway



Participation patterns in initial VET in EU countries

Students in vocational programmes (pre-vocational and vocational streams) at ISCED level 3 as percentage of all ISCED 3 students

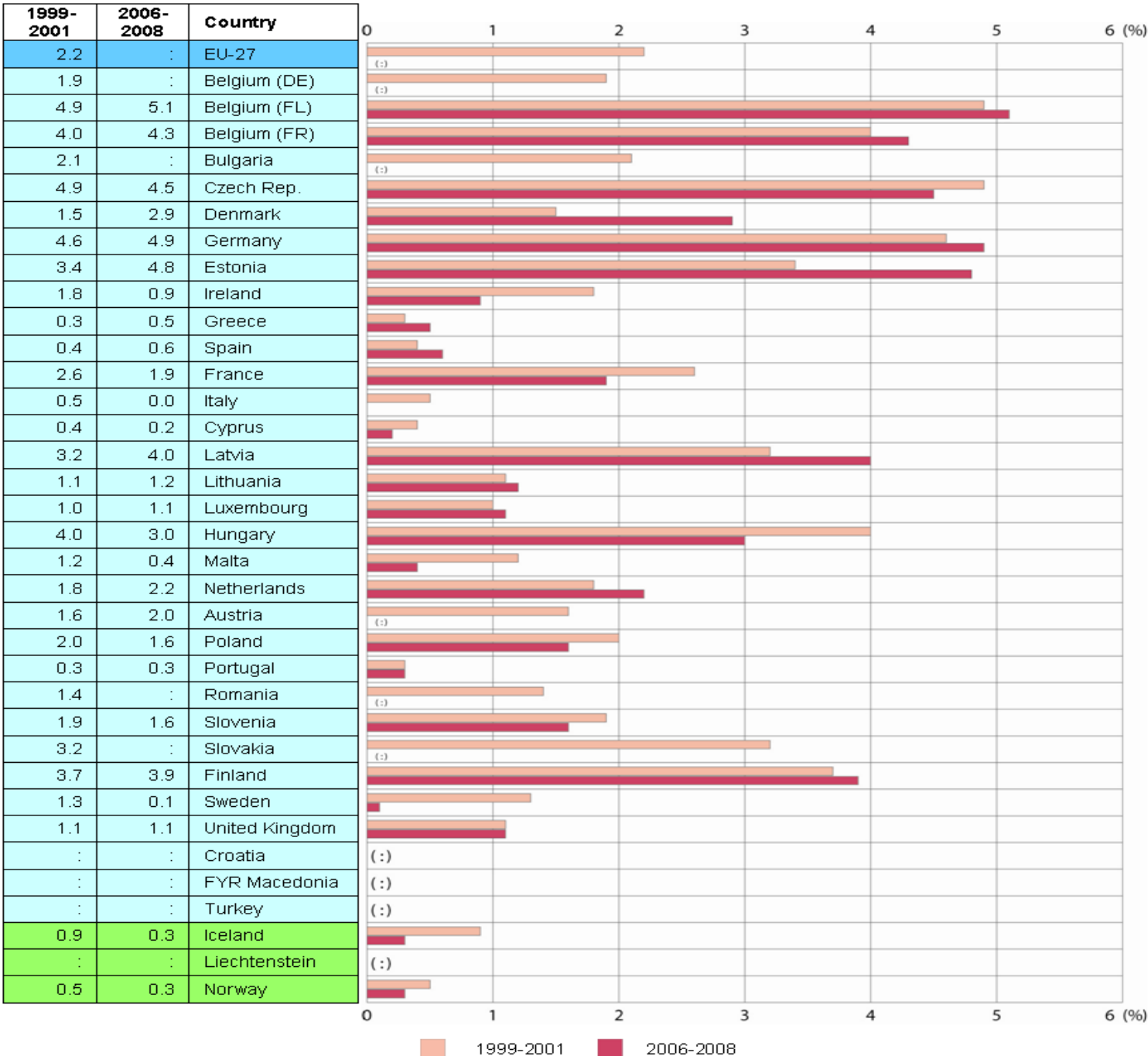
2000	2007	Country
17.6	14.8	EU-27
:	4.3	Slovenia
:	5.0	Poland
:	7.2	Slovakia
7.7	:	Sweden
8.9	7.9	Finland
16.7	8.7	Lithuania
10.2	10.9	Austria
13.8	10.9	Hungary
:	11.5	Ireland
15.5	12.0	Netherlands
12.5	12.3	Belgium
11.6	12.4	Denmark
18.5	12.6	Cyprus
13.3	12.7	France
14.9	12.7	Germany
14.2	14.3	Estonia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



Education and Culture

Early school leavers

Percentage of the population aged 18-24 with only lower secondary education and not in education or training



Education and Culture

Special needs education

Percentage of pupils in compulsory education with special needs in segregated settings

2000	2006	Country
19.5	21.2	EU-27
7	4.8	Finland
11	12.1	Ireland
:	13.6	Estonia
9.5	15.1	Netherlands
12.6	15.3	Sweden
17.9	16	Denmark
23.2	16.2	Poland
:	16.5	Slovenia
12.8	19	United Kingdom
19	19.4	Belgium
22.6	20	Germany
22.7	20.6	Hungary
30.1	21.2	Latvia
19.3	21.5	Austria
15.2	21.7	France
35.1	22.9	Luxembourg
17.5	24.8	Czech Rep.
26.3	24.9	Portugal
16.3	25.7	Spain
:	25.7	Lithuania
18.9	26.4	Italy
24.4	27.7	Greece
:	27.8	Slovakia
40.3	51.1	Bulgaria
41.3	53.5	Romania
:	:	Cyprus
:	:	Malta
:	21.5	Croatia
:	:	FYR Macedonia
:	32.2	Turkey
:	:	Iceland
:	:	Liechtenstein
17.5	22.4	Norway



Education and Culture

Reading literacy

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

Best performing countries relating to school education

	Target for 2010	Best performing countries in the EU			EU-27	USA	Japan
Early school leavers (18-24) (%)	No more than 10%	2007					
		Poland 5.0%	Czech Rep. 5.5% (06)	Slovakia 7.2%	14.8%	-	-
Low-achievers in reading (15-year-olds, %)	At least 20% decrease	Change in the percentage of low achievers in %, 2000-2006					
		Finland -31.4	Poland -30.2	Latvia -29.6	+13.1%	-	+82.2%
		% of low achievers in 2006					
		Finland 4.8%	Ireland 12.1%	Estonia 13.6%	24.1 %	-	18.4
Upper secondary attainment (20-24, %).	At least 85%	2007					
		Czech Rep. 91.8%	Poland 91.6	Slovenia 91.5%	78.1	-	-

Source: DG education and culture



Best performing countries on benchmarks relating to higher education and lifelong learning

	2010 target for EU	Best performing countries in the EU			EU-27	USA	Japan
Graduates in Mathematics Science Technology (per 1000 young people)	Increase of at least 15% graduates	Average annual increase 2000-2005					
		Poland +13.7%	Slovakia +12.3%	Portugal +13.1	+4.7%	+3.1%	-1.1%
		Graduates per 1000 population (aged 20-29) in 2005					
		Ireland 21.4	France 20.7	Lithuania 19.5	13.2	10.3	14.4
		% of female graduates in 2005					
		Estonia 42.9 %	Bulgaria 41.2 %	Greece 40.9 %	31.3 %	31.3 %	14.6 %
Lifelong Learning participation (25-64, %)	At least 12.5%	2007					
		Sweden 32.0 (06)	Denmark 29.2%	UK 26.6% (p) (06)	9.7%(p)	-	-

Source: DG Education and Culture



University World Ranking



	Academic Ranking of World Universities (ARWU)			World University Ranking (THES)
	Number of universities in the top 500	Number of universities in the top 500 per 100 000 terti. students	Number of univ. in the top 100	Number of universities in the top 100
EU-27	197	1.08	29	33
Denmark	4	1.84	1	0
Germany	41	1.76	6	3
Ireland	3	1.60	0	1
France	23	1.06	4	2
Italy	23	1.16	0	0
Netherlands	12	2.21	2	4
Austria	7	2.94	0	1
Finland	5	1.67	1	1
Sweden	11	2.56	4	1
United K.	42	1.87	11	19
Japan	32	0.79	6	4
USA	166	0.98	54	37
China	25	0.13	0	3
India	2	0.02	0	0
Russia	2	0.02	1	0

Indicator development needs

- Teachers and trainers
- Adult skills
- Civics
- Learning to learn skills
- Languages
- Creativity



New international surveys

Civics (ICCS/IEA)

Teachers and Trainers (TALIS/OECD - IEA)

Adult skills (PIAAC/OECD)

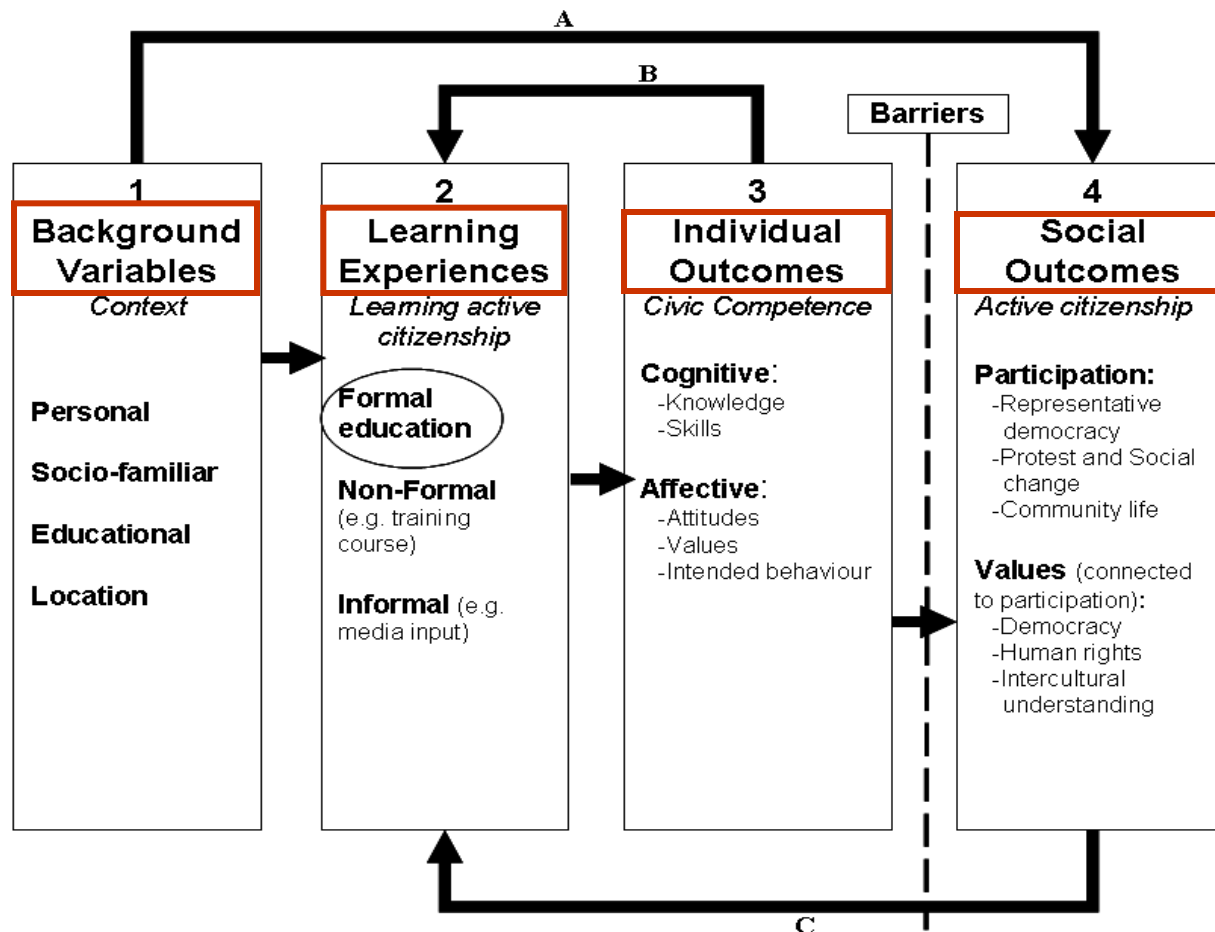
Language skills (EU)



Civics (IEA/ICCS)



Measuring Active Citizenship working model



Active citizenship definitions for the development of new indicators



Education and Culture

Active citizenship: Participation in civil society, community and/or political life , characterized by mutual respect and non-violence and in accordance with human rights and democracy

Education and training for active citizenship: Learning opportunities (formal, non-formal and in-formal) that occurs at any stage of the life cycle that facilitate or encourage active citizenship



Learning to learn skills



- ***‘Learning to learn’ is the ability to pursue and persist in learning, to organise one’s own learning, including through effective management of time and information, both individually and in groups. This competence includes awareness of one’s learning process and needs, identifying available opportunities, and the ability to overcome obstacles in order to learn successfully. This competence means gaining, processing and assimilating new knowledge and skill as well as seeking and making use of guidance. Learning to learn engages learners to build on prior learning and life experiences in order to use and apply knowledge and skills in a variety of contexts: at home, at work, in education and training. Motivation and confidence are crucial to an individual’s competence..’***

(Education Council Conclusions, 2006)



‘LEARNING TO LEARN’

Is:

- *the ability to pursue and persist in learning,*
- *to organise one’s own learning, including through effective management of time and information, both individually and in groups.*

Includes;

- *awareness of one’s learning process and needs,*
- *identifying available learning opportunities*
- *the ability to overcome obstacles in order to learn successfully.*

Means

- *gaining, processing and assimilating new knowledge and skills*
- *seeking and making use of guidance.*

It engages learners to:

- *build on prior learning and life experiences*
- *use and apply knowledge and skills in a variety of contexts: at home, at work, in education and training.*

Motivation and confidence are crucial to an individual’s competence.

The learning to learn framework

The **affective dimension** is comprised of 3 sub-dimensions;

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

The **cognitive dimension** is based on the 4 sub-dimensions;

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

Meta-cognition which comprises 3 subdimensions;

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

Pilot survey on Learning to Learn skills

Draft instrument

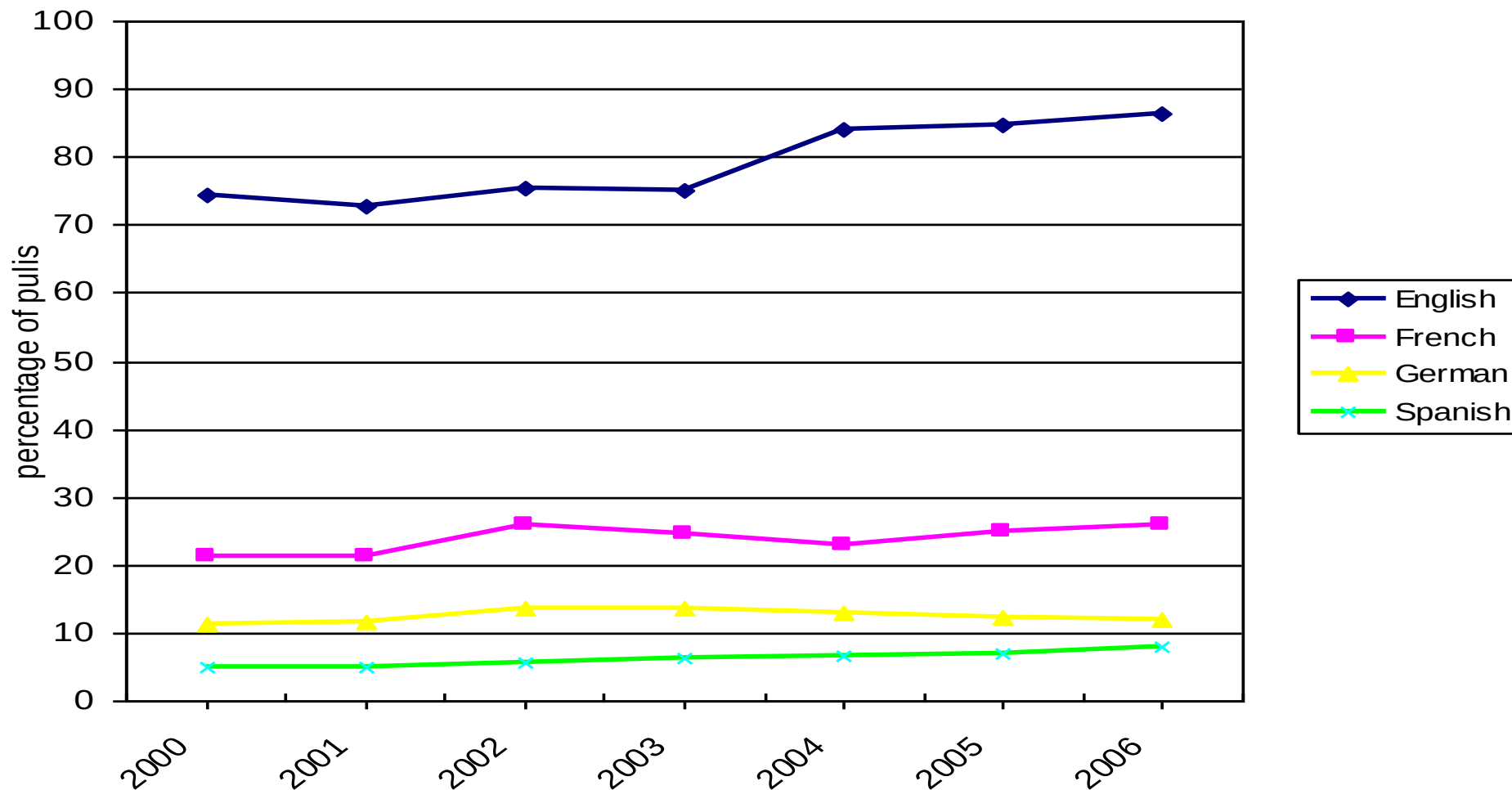
- **In eight countries: France, Italy, Cyprus, Slovenia, Finland, Austria, Spain and Portugal.**
- **Took place in April- June 2008;**
- **Tested 14-year-olds;**
- **2310 students in 49 schools;**
- **National reports to evaluate the merits of the instruments and to propose steps ahead;**
- **Final overall report on the pilot survey by University of Helsinki (Fin) (September/October 2008).**



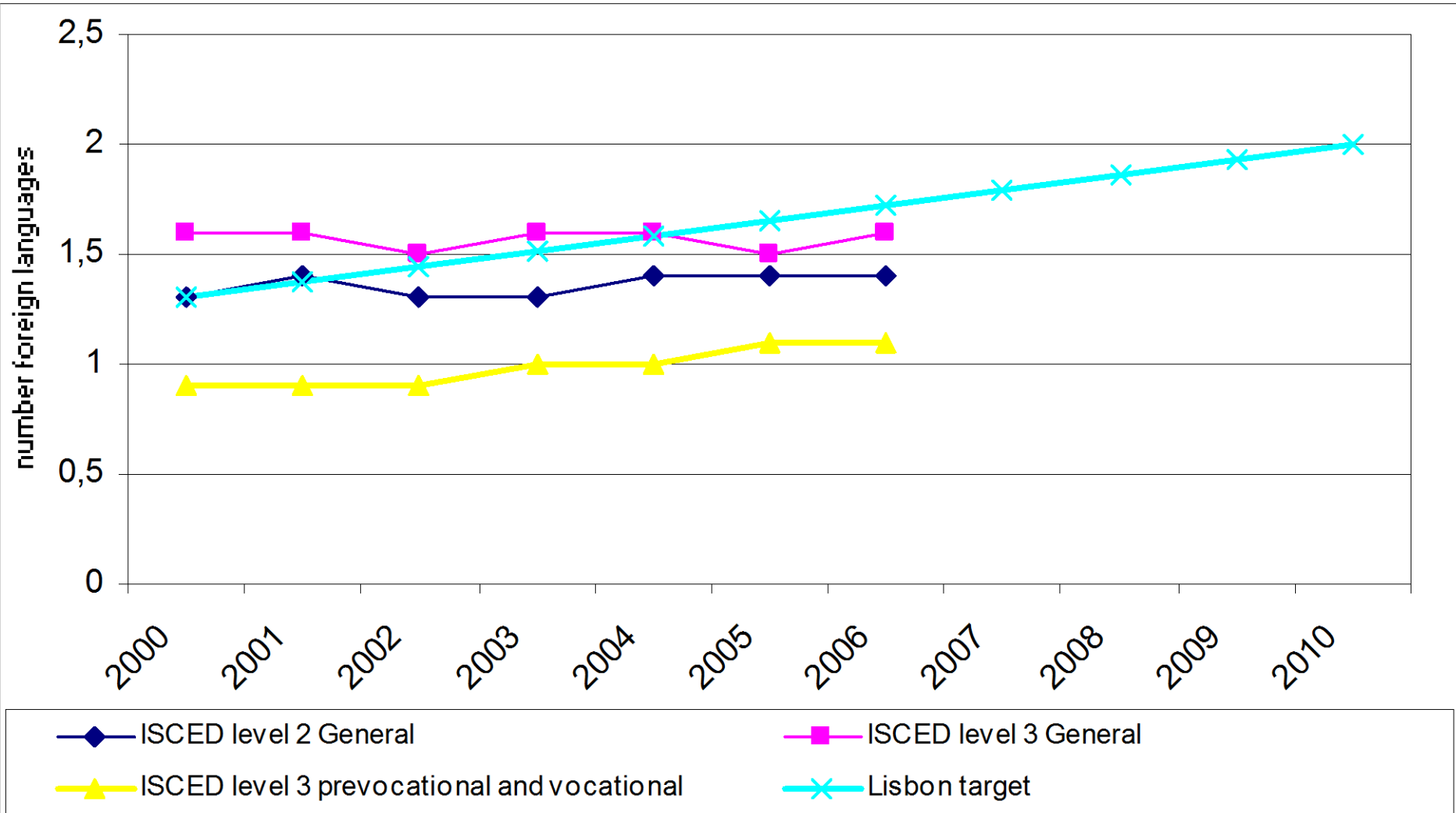
Languages skills



Share of pupils learning English, French, German, Spanish at ISCED level 2 in EU. 2000-2006



Average number of foreign languages learned per pupil in EU. 2000-2006.



First round: Three competencies

The survey covers the three language competences, which can be assessed most readily

**Reading
Comprehension**

**Listening
comprehension**

Writing



First round

Five languages will be tested

**The survey covers competences in the
first and second most taught foreign official
European languages**

English, French, German, Italian and Spanish



Survey calendar



Education and Culture

2008	Development and implementation of test trials
2009	Development of full set of tests
2009	Implementation of the field trial
2010	Implementation of the survey
2011	Final report



Creativity

2009 -European Year of creativity and innovation



Creativity

Five commonalities in the research of creativity

- ✓ involves thinking that aims at producing ideas or products that are relatively novel
- ✓ has some domain-specific - needs some specific knowledge
- ✓ domain-general elements - cuts also across different domains.
- ✓ is measurable, at least to some extent.
- ✓ it can be developed and promoted
- ✓ is not highly rewarded in practice

(Stenberg, 2005)



Torrance Test of Creative Thinking

TTCT - Verbal and Figural with two parallel tests.

Each test pertains to measure

- Fluency: (The number of ideas) Total n. of relevant responses
- Originality: (The rarity of ideas) N. of statistically infrequent ideas. The score is 0 if the idea is common, and 1 all the other valid responses.
- Elaboration: The number of added ideas
- Flexibility: Number of categories of the relevant responses



European creativity index



Education and Culture

Index	Sub-Indexes	Description	Source
Talent	Creative Class	Employed in creative occupations as percentage of total employment	ILO (2002) [http://laborsta.ilo.org , data extracted on October 2002]
	Human Capital	Percentage of population 25-64 with a bachelor degree or above	OECD (2001)
	Scientific Talent	Number of researchers in scientific disciplines per thousand workforce	European Commission-Eurostat (2001)
Technology	Innovation Index	Patents applications to the US Patent Office per million population	USPTO as reported by the European Commission, DG Research, In: "Towards a European Research Area. Key Figures 2001".
	Technology Innovation Index	High-Tech Patents per million population (US Patent Office)	USPTO as reported by the European Commission, DG Research, In: "Towards a European Research Area. Key Figures 2001".
	R&D Index	R&D expenditure as percentage of GDP	European Commission-Eurostat (2001)
Tolerance	Attitudes Index	Percentage of population that express tolerant attitudes toward minorities	European Monitoring Centre on Racism and Xenophobia, EUMC and SORA Institute for Social Research Analysis (2001)
	Values Index	Degree to which a country is based on traditional values versus more rational/secular values	World Values Survey, University of Michigan [http://wvs.isr.umich.edu]
	Self Expression Index	Degree to which a country recognizes and accepts self expression values.	World Values Survey, University of Michigan [http://wvs.isr.umich.edu]



Monitoring and Analysing Progress

SIXTEEN CORE INDICATORS

- | | |
|----|--|
| 1. | Participation in pre-school education |
| 2. | Special needs education |
| 3. | Early school leavers |
| 4. | Literacy in reading, maths and science |
| 5. | Language skills |
| 6. | ICT skills |
| 7. | Civic skills |
| 8. | Learning to learn skills |

- | | |
|-----|--|
| 9. | Upper secondary completion rates of young people |
| 10. | Professional development of teachers |
| 11. | Higher education graduates |
| 12. | Cross-national mobility of students |
| 13. | Participation of adults in lifelong learning |
| 14. | Adults' skills |
| 15. | Educational attainment of the population |
| 16. | Investment in education and training |

Secondary analysis - many needs !

Some major examples

Tracking and disparities

Instruction time / homework

Socio-economic background

Student motivation

Gender differences

School autonomy

School evaluation

School resources

Support of parents

.....

Teacher/trainer support

Investment

Migrant background

Informal learning

Special education needs

Student assessments

School climate

Adult learning

ICT



IMPORTANT EVENT !



International conference :
**Secondary analysis of results from
international surveys on student
achievements**

(May 2009)

Organised by the European Commission
(Dg EAC, CRELL/JRC)



Thank you for your attention !

The Progress report (2008) is available on the web.

http://ec.europa.eu/education/policies/2010/progressreport_en.html



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