

5. KEY COMPETENCES FOR LIFELONG LEARNING

5.1 Reading, Mathematics and Science Literacy

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MAIN MESSAGES**Key Competences for Lifelong Learning**

The proportion of low performers in reading literacy aged 15 has increased significantly, from 21.3% in 2000 to 24.1% in 2006. This should be seen against a benchmark for 2010 which anticipates a significant reduction of 20%.

Foreign language teaching in secondary education is increasing. In lower secondary education the average number of foreign languages learned per pupil is 1.4, and 1.6 in upper secondary general education. 86% of pupils were learning English in 2006. Although the bases are much lower, the number of pupils learning Spanish has increased by 50%, French by 22% and German by 5%.

Internet and computer use continues to increase. But the increase in daily use by highly educated people is much more marked than among the less educated. So the e-gap remains.

Recent research shows that increased educational attainment has a very positive effect on Active Citizenship. Higher education attainment has by far the biggest effect.

The Lisbon European Council of 2000 and the Barcelona European Council of 2002 both drew attention to the importance of basic skills. In 2002 the Council adopted a Resolution acknowledging the importance of acquiring basic skills. The Council adopted a benchmark of reducing the percentage of low-achieving 15-year-olds in reading literacy in the European Union by at least 20% by 2010, compared to 2000.

The Recommendation of the European Parliament and the Council on Key competences for lifelong learning of December 2006 (Council, 2006a) stated that “As globalisation continues to confront the European Union with new challenges, each citizen will need a wide range of key competences to adapt flexibly to a rapidly changing and highly interconnected world.” The Recommendation defined a framework with a combination of knowledge, skills and attitudes which all individuals need for personal fulfilment and development, active citizenship, social inclusion and employment. The framework consists of eight competences: (i) communication in the mother tongue; (ii) communication in foreign languages; (iii) mathematical competence and basic competences in science and technology; (iv) digital competence; (v) learning to learn; (vi) social and civic competences; (vii) sense of initiative and entrepreneurship; and (viii) cultural awareness and expression.

Five of these competences (literacy in reading, mathematics and science, language skills, learning to learn skills, ICT skills and civic skills) were identified as part of the coherent framework of indicators and benchmarks (Council, 2007a).

This chapter analyses the key competences where data are available. For the area of literacy in reading, mathematics and science, data come from the OECD PISA survey. In the area of language skills no data are currently available, hence the available data on the teaching of foreign languages in the Member States will be examined. Concerning ICT skills, available data from PISA and Eurostat on the use of and the attitudes to ICT will be examined and in the case of Active Citizenship data from the IEA CIVED will be analysed. The areas where there is no data yet will

require development of new indicators. (See part C)

5.1 Reading, Mathematics and Science Literacy

5.1.1 Low performers: European benchmark

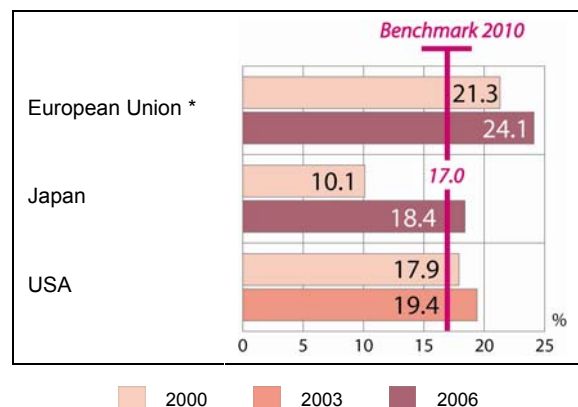
Acknowledging the importance of acquiring basic skills, the Council adopted in 2003 a specific benchmark targeting low performance in reading literacy. The benchmark to be reached by 2010 is to reduce the percentage of low-achieving 15-year-olds in reading literacy in the European Union by at least 20%, compared to year 2000.

European benchmark

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

Low achievers in reading on the PISA reading literacy scale

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



Data source: OECD, PISA 2003 and 2006 database.

The benchmark is based on an indicator taken from the PISA survey, which makes it possible to identify the share of pupils who have a low level of foundation skills such as literacy and numeracy. Reading literacy is defined in PISA as “understanding, using and reflecting on written texts, in order to achieve one’s goal, to develop one’s goals, to develop one’s knowledge and potential and to participate in society.” Pupils performing at level 2 are able to locate straightforward information, make low-level inferences of various types, work out

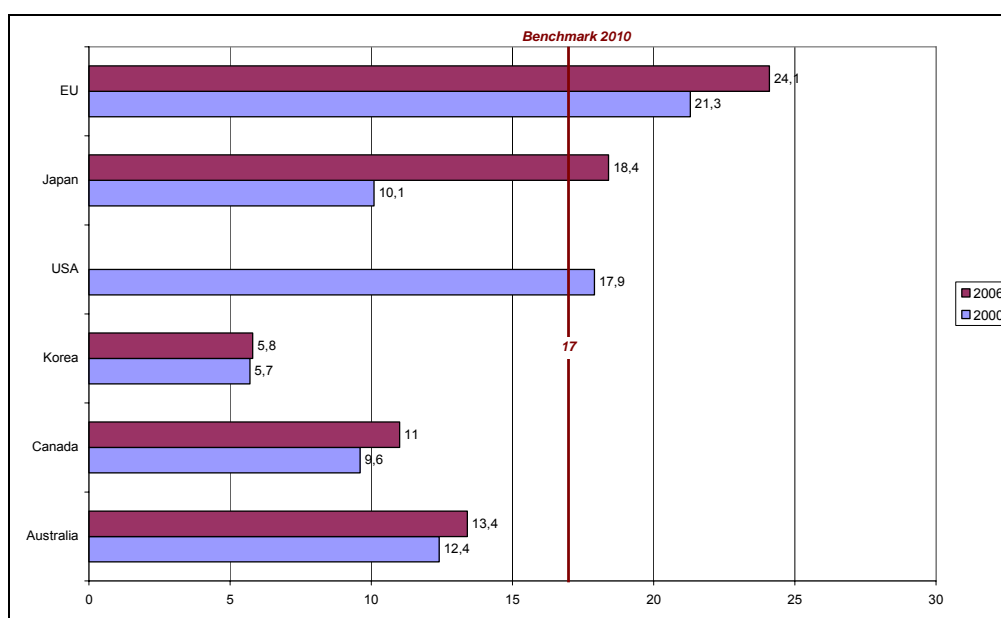
what a well defined part of a text means and use some outside knowledge to understand it (PISA 2006). Pupils who fail to reach level 2 can therefore be considered to be inadequately prepared for the challenges of the knowledge society and for lifelong learning. The benchmark measures the share of pupils with reading literacy proficiency level 1 or lower on the PISA reading literacy scale.

Chart 5.1 below shows the situation regarding the benchmark on low achievers in reading literacy. Reaching the European benchmark implies that the share of low achievers in the EU⁴⁶ will decrease from 21.3% in 2000 to 17% in 2010. In fact, the number of low achievers

in the EU increased from 21.3% in 2000 to 24.1% in 2006, a rise of more than 13%. A 30% reduction would now be needed to reach the benchmark. Clearly effective and innovative measures are required.

Compared to countries outside Europe, the average of participating EU countries has a relatively high share of low performers, though both the USA⁴⁷ and, especially, Japan showed a significant increase in the share of low performers from 2000 to 2006. The share of low performers in Korea, Canada and Australia was relatively stable in the period, and all these countries are at a level far below the EU benchmark of 17% low achievers.

Chart 5.1: Low achievers in reading on the PISA reading literacy scale in the EU and selected third countries. 2000, and 2006.
(PISA reading literacy scale)



Data source: OECD PISA 2000 and 2006 database

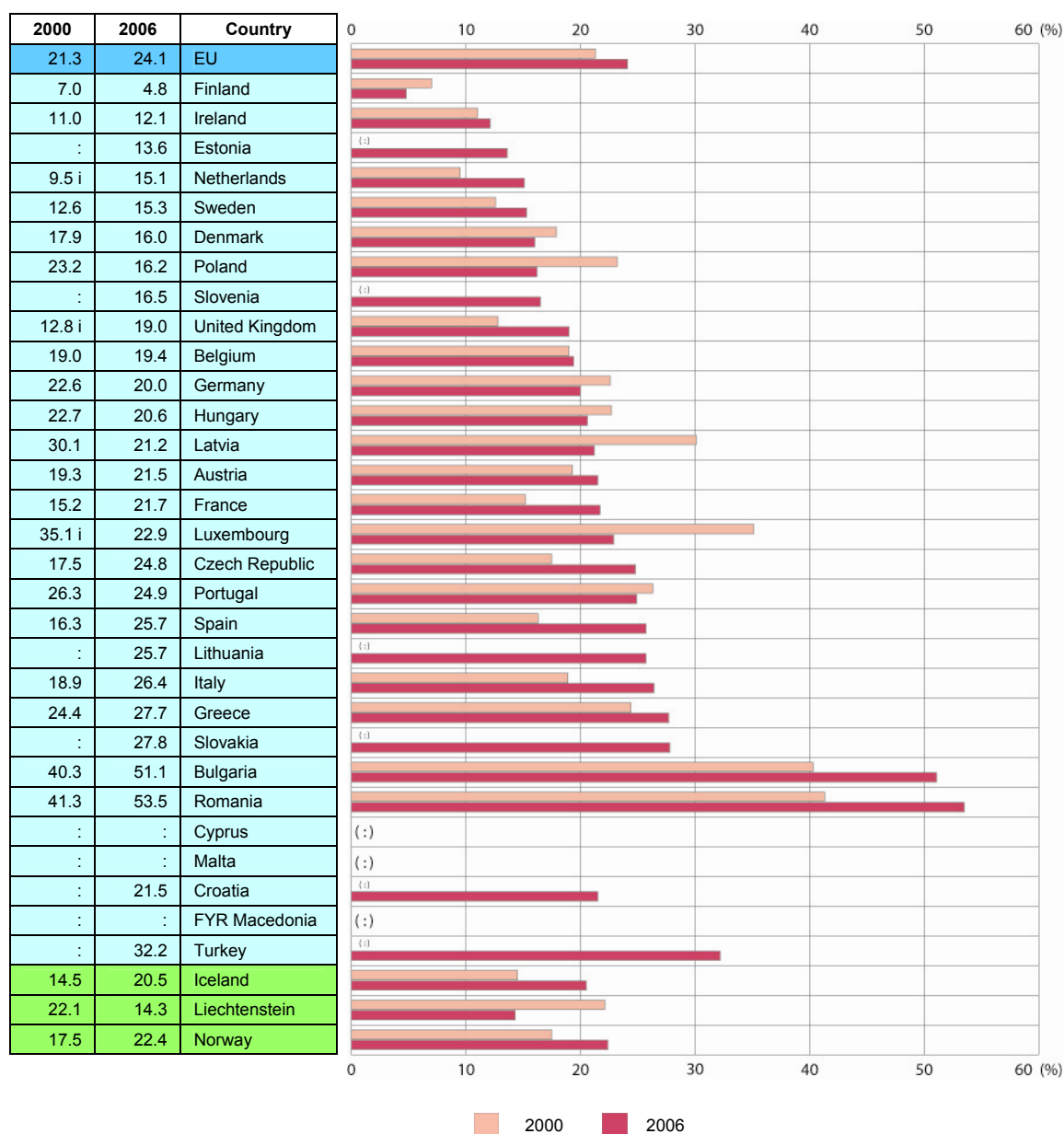
Reading literacy in the participating EU countries

In 2006 all EU countries except Malta and Cyprus participated in the PISA survey. The average share of low performers in these 25 countries was 23.1%. There are large differences in performance between the Member States. In 2006 only 4.8% of pupils in Finland were low performers in reading, followed by Ireland (12.1%), Estonia (13.6%), the Netherlands (15.1%) and Sweden (15.3%). The best performing countries in the EU are also among the best performers in the world. In

Bulgaria and Romania more than 50% of the pupils were low performers.

While performance deteriorated in many Member States from 2000 to 2006, some countries have been successful in reducing the share of low achievers, notably Poland (30.2% decrease), Latvia (29.6%), and Germany (11.5%). Finland, the top performer in 2000, managed to reduce its already low share of low achievers even further and reported the highest relative reduction in low performers with 31.4%.

Chart 5.2 Percentage of pupils with reading literacy proficiency level 1 and lower on the PISA reading literacy scale, (2000 and 2006)



Source: OECD PISA database 2000 and 2006.

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

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

Many other EU countries, including Spain (57.7%), France (42.8%), the Czech Republic (41.7%) and Italy (39.7%) show a large increase in the share of low achievers. Chart 5.2 spells out the development from 2000 for individual countries. 14 countries increased the share of low performers, while in 8 countries the share decreased.

Distribution and mean performance of pupils in reading

The average score for all participating countries in reading in PISA is 492 points. In

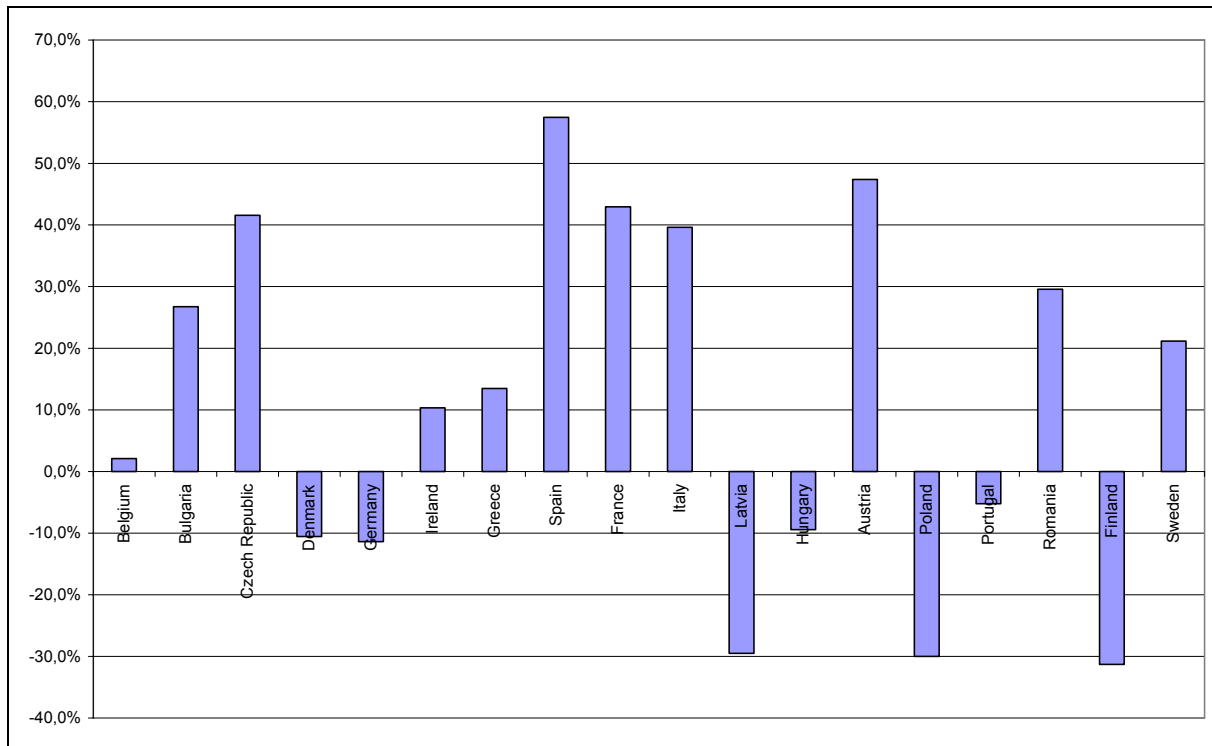
the EU countries for which data are available the average reading score fell from 491 points in 2000 and 2003 to 487 points in 2006. Performance deteriorated in a large number of Member States. The only EU country where average performance improved significantly was Poland and Latvia.

Japan scored 498 points, slightly above the EU, while there were problems with the US survey, meaning that no comparison can be made for this country for 2006. Between 2000 and 2006 Korea increased its average reading

performance by 31 points, reaching the highest performance of all participating countries with 556 points.

Finland has the highest score among the Member States, at second place with 547 points. Finland is the only European country among the top five performers.

Chart 5.3 Progress in the field of low achievers in reading (%). 2000-2006.



Source: OECD PISA database

The second best performing EU country was Ireland with 517 at rank 6. Among the 10 highest scores in 2006, five were European, including Liechtenstein.

The benchmark illustrates the share of low performers. The distribution between the low performers and the top performers makes it possible to show the performance gap between the best and the least performing pupils. Finland is the leading country in Europe (and the world) in terms of mean performance, but has also the smallest performance gap between the pupils. The gap between the 10th and the 90th percentile is 208 points among the Finnish pupils. Estonia, Spain, Denmark and Slovenia too have less than 230 points difference between the two categories of pupils. Bulgaria (303 points), Czech Republic (286 points) and Belgium (283 points) are the Member States with the largest performance gap. Chart 5.4 illustrates the distribution for each of the five proficiency levels of the PISA survey. In

Finland only 20% of students are at level 2 or below, while in Turkey more than three quarters of the pupils are in this category. At the upper end of the scale Finland (16.7%), Poland (11.6%) Ireland (11.3%), and Belgium (11.3%) have the highest share of pupils who reached level 5.

The next PISA survey will be carried out in 2009. The focus will be on reading. As the 2000 survey also focused on reading, the 2009 survey will yield a better comparison. Since the EU benchmark for 2010 concerns low performers in reading literacy the results of the PISA 2009 survey (to be published in 2011) will provide important information on developments in the EU over almost the full period of the Lisbon process.

Gender differences in reading skills

In 2006 almost twice as many boys as girls had low reading skills: 17.6% of 15 year old girls and 30.4% of boys in the same age group. In

all Member States females perform better on average than males. In Greece and Finland, girls were 57 and 51 points ahead. The smallest gender gaps were in the Netherlands and the United Kingdom with 24 and 29 points respectively. These differences between genders are very significant, bearing in mind that 40 points on the PISA scale can be considered equivalent to one year of instruction.

The wide performance gap between boys and girls implies a need to specifically address the low reading skills of boys in order to improve overall performance. The gender gap is significantly less when it comes to mathematics and science skills, as will be shown in the following analysis.

No impact on reading literacy — US experience (2004-2006) with the No Child Left Behind Act

Created under the No Child Left Behind Act of 2001, the Reading First program provides assistance to states and districts in the US in using research-based reading programs and instructional materials for students in kindergarten through third grade and in introducing related professional development and assessments. The program's purpose is to ensure that increased proportions of students read at or above grade level, have mastery of the essential components of early reading, and that all students can read at or above grade level by the end of grade 3.

This interim report presents the impacts of Reading First on classroom reading instruction and student reading comprehension during the 2004-05 and 2005-06 school years. The evaluation found that Reading First did have positive, statistically significant impacts on the total class time spent on the five essential components of reading instruction promoted by the program. The study also found that, on average across the 18 study sites, Reading First did not have statistically significant impacts on student reading comprehension test scores in grades 1-3.

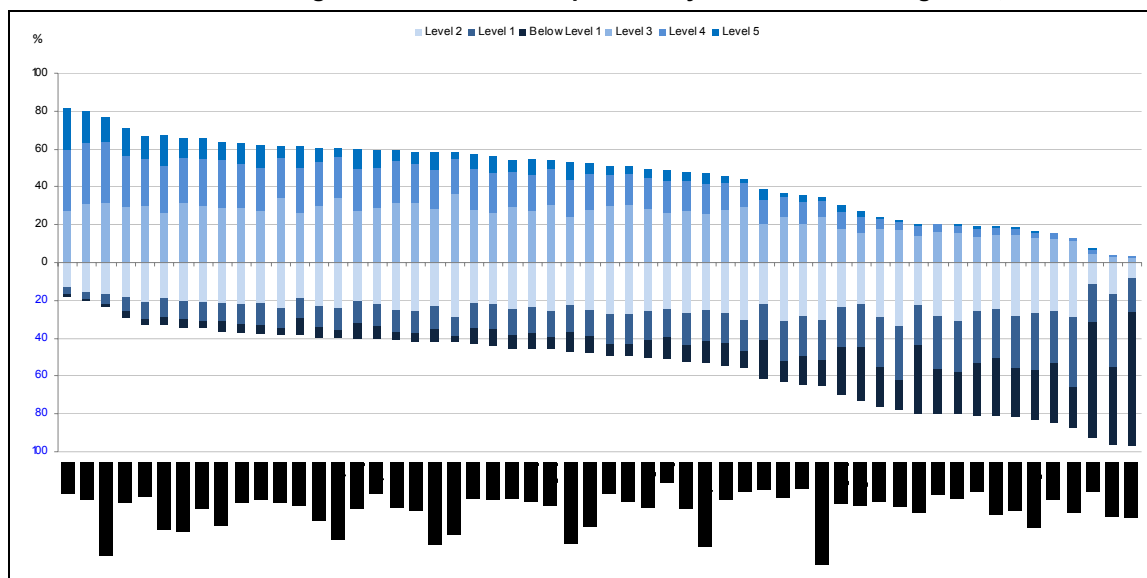
Institute of Education Science, National Centre for Educational Evaluation and Regional Assistance "Reading First Impact Study: Interim Report", Washington, May 2008.

Low performers in mathematics literacy proficiency

The average share of low performers in mathematics in the EU is lower than for reading, at 21.2%⁴⁸. Finland has easily the

smallest number of low performers in mathematics in the EU with only 6%, followed by the Netherlands (11.5%), Estonia (12.1%) and Denmark (13.6%) among the Member States.

Chart 5.4 Percentage of students at each proficiency level on the reading scale, 2006.



Source: OECD PISA database

In Romania and Bulgaria, more than half of the pupils are in this category. As a result of a change in the survey scope, only two of the four mathematics scales are comparable between 2000 and 2003. The two tests in 2003 and 2006 are however comparable and the majority of countries (13) reduced the share of low performing students in mathematics between 2003 and 2006. France reported a 34% higher share of low performers in mathematics; the Czech Republic and Iceland also recorded a more than 10% increase. Greece, Finland and Denmark all reduced the share of low performers by more than 10% from 2003 to 2006.

Less gender difference in mathematics

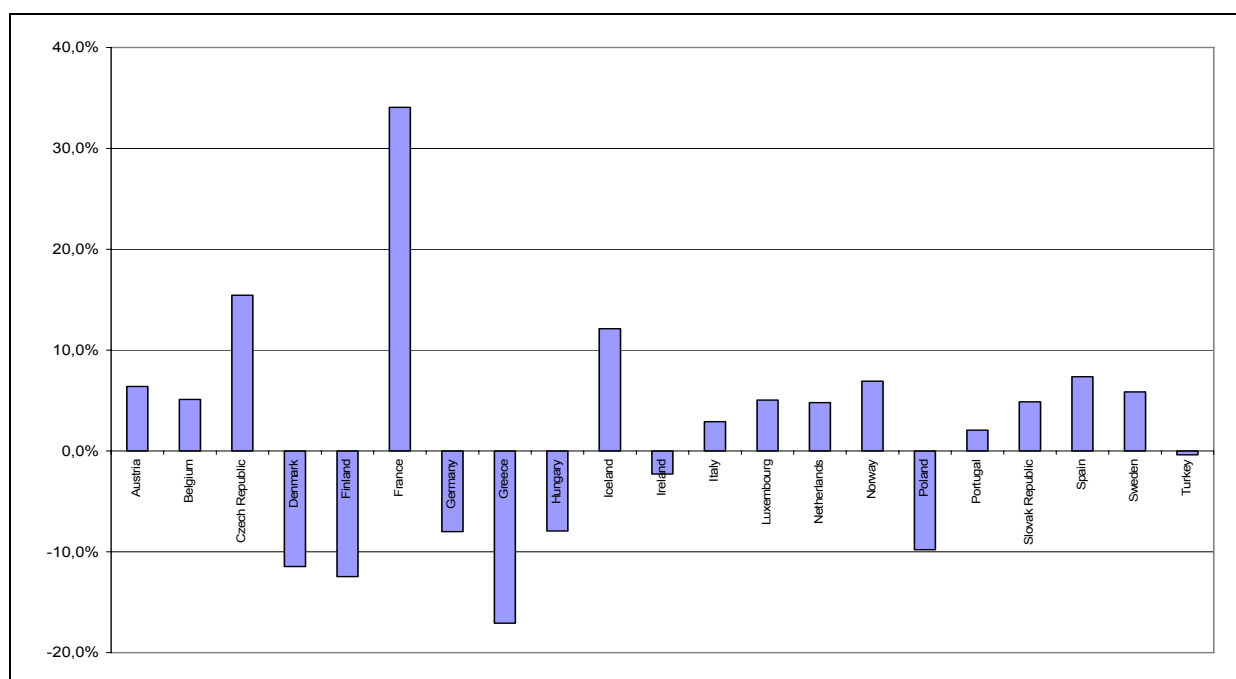
The overall gender difference in mathematics was less than a third as large as for reading,

and in all the Member States boys outperformed girls or there was no significant difference. The largest gender difference is found in Austria with an average of 23 points in favour of boys.

Comparing EU mathematics skills worldwide

Among the seven countries with the lowest proportion of low performers there are only two European countries. Finland is the best performing country in the OECD with only 6% low achievers followed by: Korea (8.9%), Hong Kong (9.5%), Azerbaijan (10.5), Canada (10.8%), Netherlands (11.5%), Macao-China (10.9%), Australia (13.0%) and Japan (13.0%)

Chart 5.5 Progress in the field of low achievers in mathematics (2003-2006) (%)



Source: OECD PISA database

Low performers in Science literacy

The PISA 2006 study includes a detailed profile of student performance in science, and in addition to reporting the score on tests in science it also covers students' attitudes to learning science, the extent to which they are aware of the life opportunities that science competences may open, and the science learning opportunities and environments which their schools offer (see OECD PISA 2006).

The average proportion of low performers in science for all the Member States (25) that participated in PISA in 2006 is 20.2%. In science too Finland has the smallest share of low performing pupils: only 4.1% received a score of 1 or less. Estonia (7.7%), Liechtenstein (12.9%), the Netherlands (13.0%) and Slovenia (13.9%) are the countries closest to Finland. More than 40% of pupils in Bulgaria and Romania are low performers in science.

Due to the change in the science test in PISA over the years, the 2006 results are not directly comparable with earlier years.

No gender differences in science skills

Unlike the tests in reading and mathematics, girls and boys showed no significant differences in average science performance in the majority of countries. This gender balance is also reflected in the attitudes to science in some countries. However in Germany, Iceland, Japan, Korea, the Netherlands and the UK, males reported more positive attitudes towards science. The largest gender difference was observed in students' self esteem regarding science, males rated their own science abilities significantly more highly than did females.

Comparing EU science skills worldwide

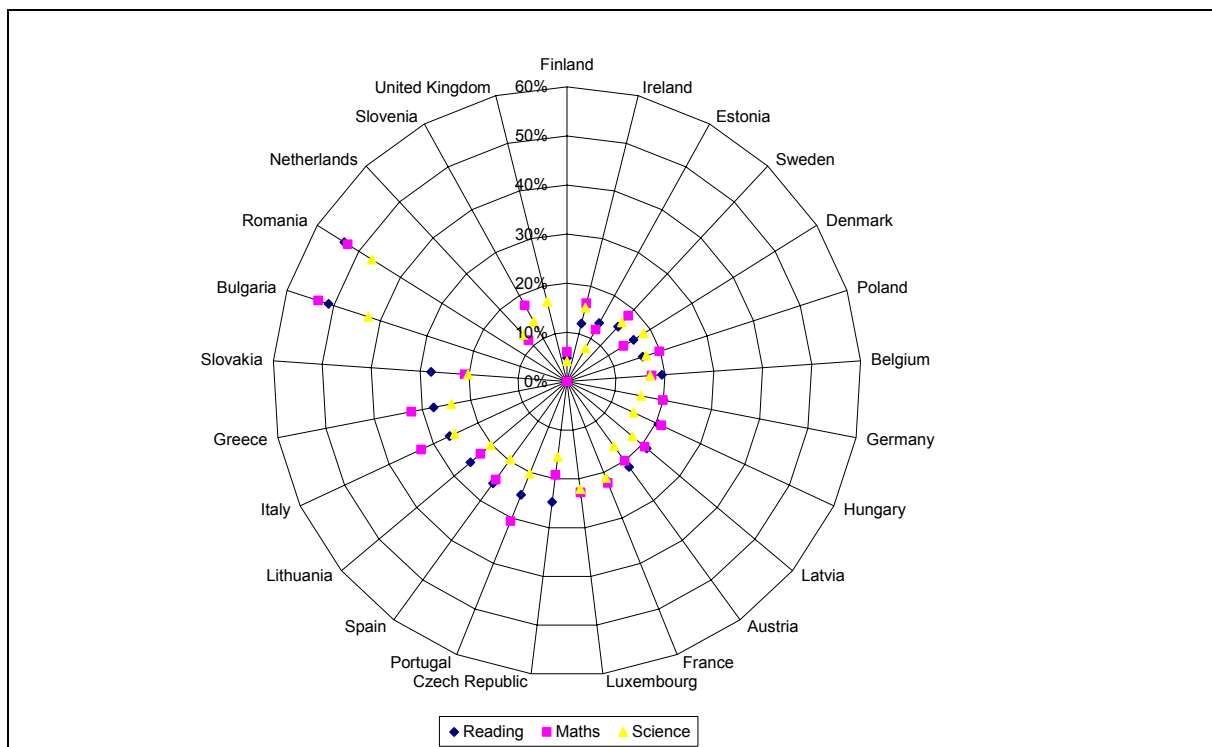
The average OECD figure for low performers in science is 19.2%. Of the 20 countries with less than 20% low performers, 10 are EU countries and 8 are from outside Europe. These countries are Hong Kong (8.7%), Canada

(10.0%), Macao-China (10.3%), Korea (11.2%), Chinese Taipei (11.6%), Japan (12.0%), Australia (12.9%) and New Zealand (13.7%),

The US performs below the OECD average with 24.4% low performers; Russia has a score of 22.2% low performers.

The proportion of low performers in reading, mathematics and science for all the participating countries is illustrated in Chart 5.6. There is a pattern in the countries for the three literacy skills — most countries have the smallest share of low performers in science. Denmark and the Netherlands are the only countries where the share of low performers in mathematics is higher than in science. Only four countries (Ireland, Denmark, Sweden and Poland) have a higher share of low performers in science than in reading, while there is an even spread of countries with more low performers in maths compared with reading.

Chart 5.6 Low achievers in mathematics, science and reading, 2006



Source: OECD, PISA database 2006

Progress in reading literacy: results from the PIRLS survey

The “Progress in International Reading Literacy Study” (PIRLS) was carried out in 2001 and 2006. 39 countries participated in 2006, including 19 Member States. While both the PIRLS and the PISA surveys aim to measure reading literacy, the PIRLS surveys use an alternative approach to the PISA surveys. PIRLS assesses reading at the fourth grade (approx. 10 year olds) whereas PISA is concerned with 15 year olds. The PIRLS surveys concentrate on how the curricula are run by targeting pupils in primary education who are just learning how to read and hence focus on the acquisition of reading literacy whereas the PISA survey mainly focuses on literacy levels and the ability to use knowledge and competences. PIRLS focuses on three aspects of reading literacy: for reading purposes, comprehension, and reading behaviours and attitudes.

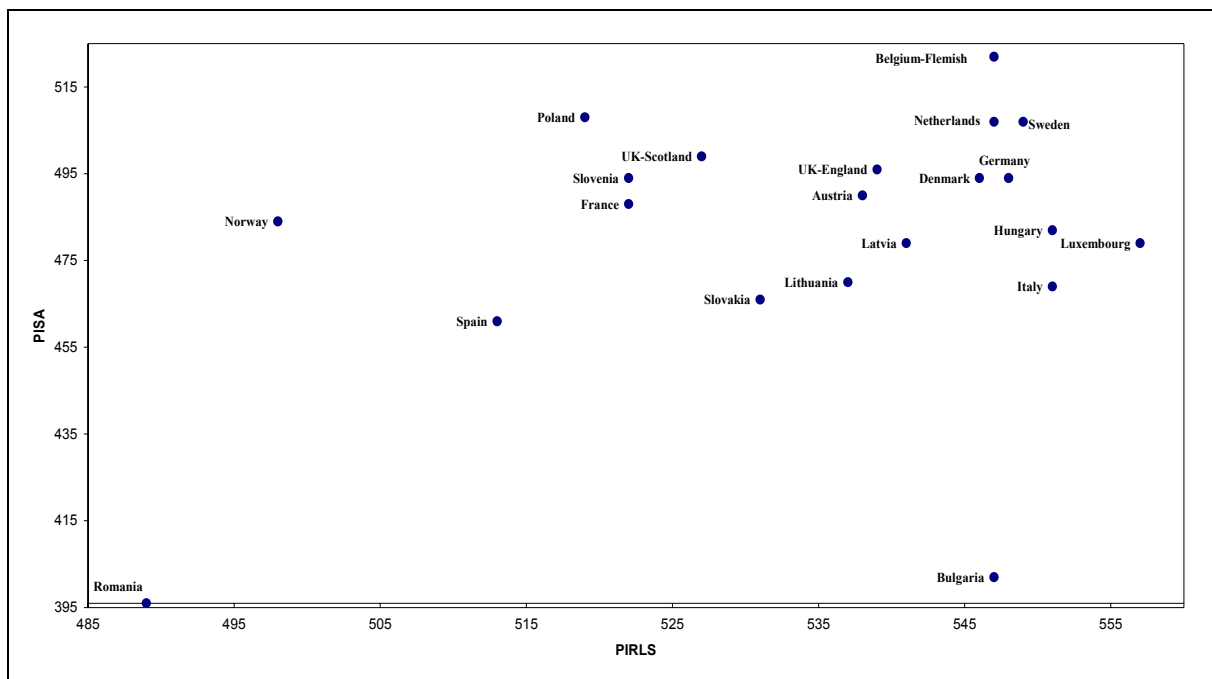
The first two form the basis of the written test in reading comprehension. The student background questionnaire addresses the third aspect. While all large EU countries are

covered by PIRLS 2006, two high performers in PISA (Finland and Ireland) are not participating in PIRLS.

PIRLS defines low performers as pupils who do not reach 400 points and the advanced international benchmark 625 points. 15% of EU education systems only reach this benchmark for low reading performance, and not the intermediate benchmark of 475 points. The Netherlands (8%) and Belgium FL (9%) have the lowest share of low performers, while Romania (23%) and Belgium WL (26%) have the highest share.

Among the Member States, Luxembourg was the top performer with the highest average score of 557 points, followed by Italy (551) and Hungary (551). The EU countries that show the most progress since 2001 are Slovenia (+20 points, from 502 to 522), Slovakia (+13 from 518 to 531) and Italy (+11 from 541 to 551). The countries where performance has declined most were Romania (-22, from 512 to 489), UK - England (-13, from 553 to 539) and Sweden (-12 from 561 to 549).

Chart 5.7 Country performances in PIRLS and PISA (2006)



Data source: OECD PISA database 2006, IEA, PIRLS 2006

5% of pupils in the participating EU education systems failed to reach the PIRLS benchmark for low reading performance. In Luxembourg and Lithuania only 1% are below this level, while in Romania the share is 16%.

Russia (565 points) performed best of the 45 participating educational systems, followed by: Hong Kong (564), the Canadian province Alberta (560) and Singapore (558). Luxembourg, the best performing EU country, scored 557 points at 6th place.

Also in the PIRLS, as in PISA, survey results show that girls had higher average achievement than boys in all participating countries. Internationally the average score for girls was 509 and 492 for boys. Boys in Germany and Italy are the only ones that showed an improvement over the 2001 survey.

Chart 5.7 illustrates the average scores for the participating countries in the PISA reading literacy (the Y-axis) and the results from the reading test in PIRLS (the X-axis). Reading the graph along the vertical axis provides information on where the country is in PISA scores, while reading it horizontally gives an indication of country positions in PIRLS.

These two score scales are not directly comparable since they refer to different tests and different age groups. A score of 400 in PISA is not equivalent to a score of 400 in PIRLS. It is important to note that they measure slightly different reading capacities: PISA measures literacy and application in a real-world context, while PIRLS is focused on curriculum knowledge.

The figure is constructed in such a way that each of the axes goes from the lowest and highest country average in the respective surveys. In this way, the position of the countries is relative to the minimum and the maximum in each survey. The diagonal line illustrates the points where the countries perform equally in both surveys in relation to the highest and lowest performers.

Most countries perform comparatively better in PISA than in PIRLS, especially Poland and Norway. Pupils from Belgium (Fl), the Netherlands and Sweden have high scores in both tests, while Bulgaria stands out with a relatively high score in PIRLS and low scores

in PISA. Romania has the lowest scores in both PISA and PIRLS among the participating countries.

Comparison between national scores in the two surveys is informative because of the different approaches to measuring skills. Why is it that countries such as Bulgaria, Italy or Luxembourg perform relatively better in PIRLS than in PISA? Are they more focused on curriculum knowledge than on real-world competences? Could it be that younger cohorts (4th graders) are better prepared in literacy terms? More research is needed to clarify and highlight the complementarities of the two surveys.

5.2 Language Skills: Learning and Teaching

The 2002 Barcelona European Council highlighted the importance of language learning in European integration and within the Lisbon process when it called for “the mastery of basic skills, in particular by teaching at least two foreign languages from a very early age.” (Council, 2002c, paragraph 44) As a consequence, knowledge of foreign languages is now recognised as one of the key competences that should be intensively cultivated within lifelong learning (Council, 2006a). The recommendation defined communication in foreign languages as the “ability to understand, express and interpret concepts, thoughts, feelings, facts and opinions in both oral and written form (listening, speaking, reading and writing) in an appropriate range of societal contexts — work, home, leisure, education and training — according to one’s wants or needs. Communication in foreign languages also calls for skills such as mediation and intercultural understanding.” (Council, 2006a)

Indicators for monitoring performance and progress

It is obligatory to learn at least one foreign language in compulsory education in all Member States (except Ireland and Scotland), and a second foreign language is often optional. (Eurydice, 2005b)

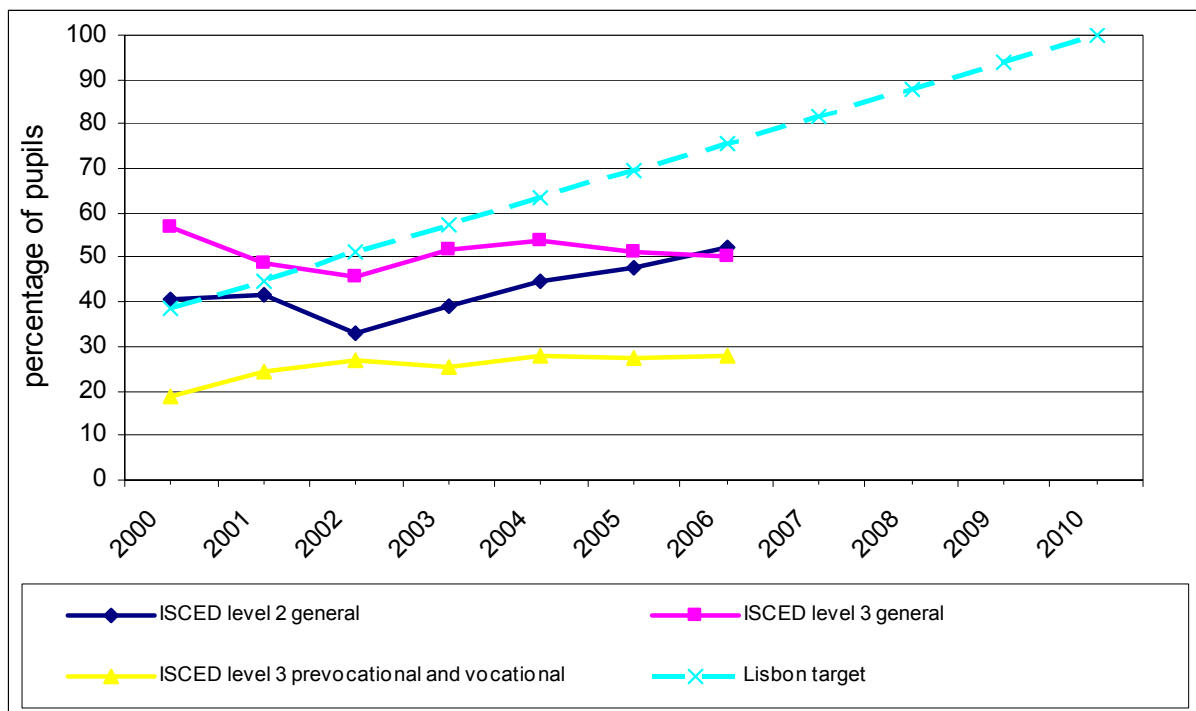
In 2006, more than half of the pupils in the EU were learning at least two foreign languages in secondary general education; 52.3% in lower

and 50.1% in upper secondary education. (See Chart 5.8)

In Denmark, Greece, Romania and Portugal more than 90% of pupils learn two foreign languages in lower secondary education, and in upper secondary general education this is true of the Czech Republic, Slovenia and Slovakia.

The number of students learning two foreign languages increased from 2005 to 2006 by 4.5 percentage points in lower secondary education and decreased by 1.0 percentage points in upper secondary education. The positive trend does not concern pre-vocational and vocational education, which decreased by 1.3 percentage points from 2005 for the average of the EU.

Chart 5.8 Percentage of pupils learning two foreign languages in EU. 2000-2006.



Source: Eurostat Data source: OECD PISA database 2006, IEA, PIRLS 2006

Foreign language teaching is arranged in the following ways (EURYDICE, 2005b):

Pupils in lower secondary education in all Member States have the possibility of learning a minimum of two foreign languages.

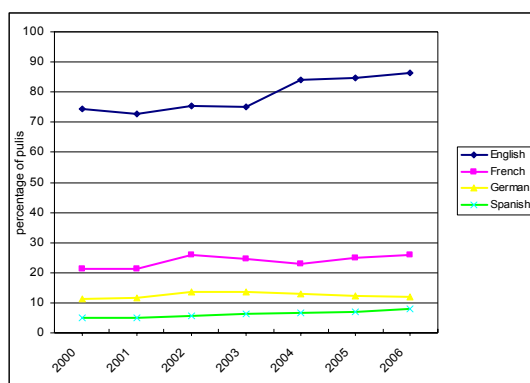
- In primary and lower and upper secondary pupils *must* learn at least two foreign languages for at least a year of full-time compulsory education (FI, SE, EE, LV, LT, DK, NL, BE NL, LU, FR, PT, IS, HU, SK, BG, RO, EL, CY, LI).
- The first foreign language is compulsory and pupils can learn the second for a year at least during full time compulsory education: NO, BE FR, BE DE, ES, SI
- Pupils *can* (DE, MT) and *must* (CZ, AT, PL) learn a minimum of two foreign languages from the beginning of upper secondary education.
- Two foreign languages are not available to all pupils but may be offered within the flexible curriculum. (IT, UK, IE)

Table 5.1: Average number of foreign languages learned in general lower and upper secondary education, and in pre-/vocational programmes in upper secondary education. 2006

	ISCED level 2 General	ISCED level 3 General	ISCED level 3, prevocational and vocational
EU 27	1.4	1.6	1.1
Belgium	1.3	2.2	1.3
Belgium Wallonia	1.0	1.8	0.8
Belgium Flanders	1.4	2.5	1.7
Bulgaria	1.3	1.8	1.2
Czech Republic	1.1	2.1	1.3
Denmark	2	2.2	0.9
Germany	1.3	1.4	0.5
Estonia	2	2.3	1.8
Ireland	1	0.9	0.9
Greece	1.9	1.1	0.8
Spain	1.4	1.2	1
France	1.5	2	1.1
Italy	1.7	1.3	1.4
Cyprus	1.9	1.7	1.2
Latvia	1.6	1.8	:
Lithuania	1.8	1.6	0.9
Luxembourg	2.5	3	1.9
Hungary	1	1.4	0.7
Malta	2.2	1.0	:
Netherlands	2.7	2.6	:
Austria	1.1	1.9	1.3
Poland	1.1	1.8	1.5
Portugal	1.9	0.7	0.9
Romania	2	1.9	1.4
Slovenia	1.3	2	1.4
Slovakia	1.2	2	1.3
Finland	2.2	2.7	:
Sweden	1.7	2.1	1.1
United Kingdom	0.6	0.1	:
Croatia	1.3	2	1.2
FYR Macedonia	1.7	:	:
Turkey	:	0.7	0.8
Iceland	2.1	1.9	0.7
Norway	1.6	:	:

Source: Eurostat, UOE.

For notes see: http://epp.eurostat.ec.europa.eu/portal/page?_pageid=0,1136184,0_45572595&_dad=portal&_schema=PORTAL

Chart 5.9 Proportion of pupils learning English, French, German, Spanish at ISCED level 2 in EU. 2000-2006

Source: Eurostat

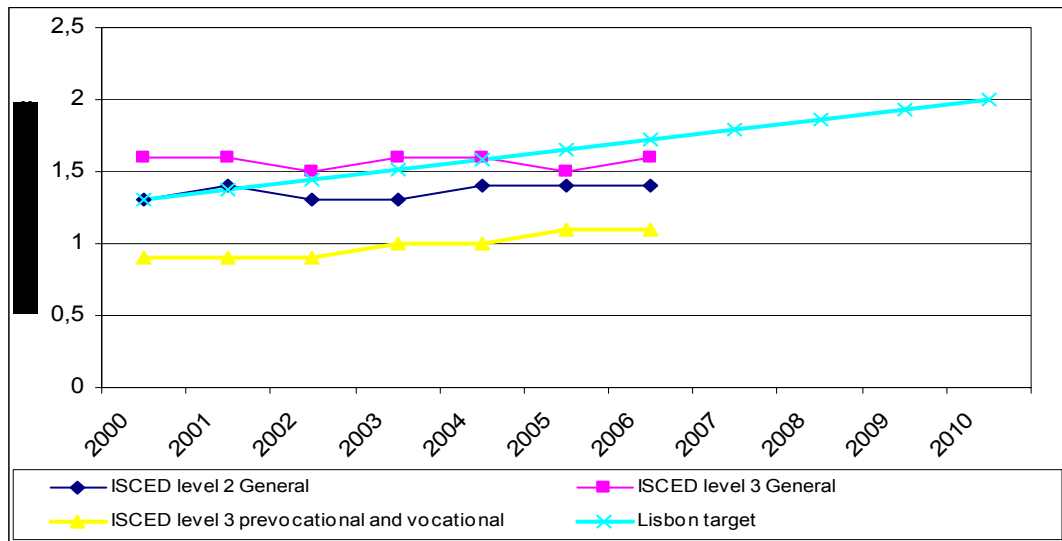
In some countries, the proportion of pupils learning two foreign languages has increased substantially. For example in lower secondary education in Italy it increased from 44% to 72% between 2005 and 2006.

The average number of foreign languages learned per pupil is higher in upper than in lower secondary general education (See Table 5.1). In upper secondary education, pupils learn two or more foreign languages in 12 countries. Luxembourg has the highest average number of foreign languages learned, with three, whereas in the United Kingdom it is only 0.1. In lower secondary education pupils

in eight countries learn at least two foreign languages. However it should be mentioned that in 11 Member States pupils continue to learn more languages in lower than in upper

secondary education, while in upper secondary general education this average increased by 0.1 percentage points from 2005 to 2006.

Chart 5.10 Average number of foreign languages learned per pupil in EU. 2000-2006.



Source: Eurostat UOE

For notes see:

http://epp.eurostat.ec.europa.eu/portal/page?_pageid=0,1136184,0_45572595&_dad=portal&_schema=PORTAL

Comparing the last two years, the European average number of foreign languages learned per pupil in lower secondary general education has remained unchanged.

In prevocational and vocational upper secondary education, the average number of foreign languages learned per pupil is lower than in general upper secondary education. In most countries at least one foreign language is learned, but in nine countries the average is lower than 1. The number of foreign languages learned ranged from 0.5 in Germany to 1.8 in Estonia and 1.9 in Luxembourg.

The proportion of pupils learning English in lower secondary education increased from 74.3% in 2000 to 86.4% in 2006. The highest relative increase is for the teaching of Spanish. Even if only 7.9% of pupils were learning Spanish in 2006, the increase is still more than 50% from 2000. The number of pupils learning French and German has also increased, at 22%

and 5% respectively. (See Chart 5.9)

In the great majority of Member States, English is the most widely taught language in general secondary education. Just two countries are exceptions: Belgium and Luxembourg in lower secondary education. In Denmark, Malta, Sweden for lower education and in the Czech Republic and the Netherlands for upper secondary education, English is learned by 100% of pupils. In Luxembourg, French and German are learned by all pupils in lower secondary education. In the Nordic countries and in Central and Eastern Europe, German is the second most widely taught language. In Southern Europe and especially the Latin countries (Spain, Italy and Portugal) as well as the German-speaking countries, French is the second most widely taught language. It is important to emphasise that for Estonia, Latvia, Lithuania and Bulgaria, Russian is the second most taught language. (See Table 5.2)

Table 5.2 Proportion of pupils learning English, French, German and Spanish in lower and upper secondary education. 2006

Country	Pupils learning English at ISCED level 2 (GEN) — as % of total pupils at this level	Pupils learning English at ISCED level 3 (GEN) — as % of total pupils at this level	Pupils learning French at ISCED level 2 (GEN) — as % of total pupils at this level	Pupils learning French at ISCED level 3 (GEN)- as % of total pupils at this level	Pupils learning German at ISCED level 2 (GEN) — as % of total pupils at this level	Pupils learning German at ISCED level 3 (GEN) — as % of total pupils at this level	Pupils learning Spanish at ISCED level 2 (GEN) — as % of total pupils at this level	Pupils learning Spanish at ISCED level 3 (GEN) — as % of total pupils at this level
EU 27	86.4	89.4	25.9	20.6	11.9	24.7	7.9	15.7
Belgium	44.2	94.4	56.2	48.1	0.7	28.4	-	4.7
Belgium Wallonia	38.9	90.0	-	-	1.7	5.8	-	6.9
Belgium Flanders	47.9	99.1	94.8	99.1	-	52.3	-	2.4
Bulgaria	69.1	86.1	10.4	15.3	17.4	40.3	1.4	7.6
Czech Republic	77.6	100	2.3	25.0	26.7	72.2	0.6	8.8
Denmark	100	99.9	12.1	22.6	89.4	71.9	-	27.9
Germany	96.4	94.3	24.3	28.7	-	-	2.1	15.1
Estonia	93.2	92.6	2.0	6.1	19.9	44.1	0.1	0.3
Ireland	-	-	67.9	60.5	22.4	18.2	8.0	8.8
Greece	98.9	94.0	57.9	8.6	37.8	2.9	-	-
Spain	98.5	94.6	38.4	27.1	2.4	1.1	-	-
France	96.7	99.4	-	-	14.4	22.8	34.7	62.4
Italy	96.0	96.9	61.3	21.4	6.8	7.7	8.0	5.0
Cyprus	99.1	88.1	93.6	38.3	0.9	2.4	0.2	7.7
Latvia	97.2	94.9	0.8	4.1	16.4	35.1	0	0.5
Lithuania	92.3	82.3	4.0	5.4	23.4	27.2	0	0.3
Luxembourg	52.8	97.0	100	97.0	100	97	-	7.6
Hungary	56.2	73.3	0.6	6.2	39.6	49.9	0.1	1.3
Malta	100	63.5	43.0	7.9	9.5	1.7	3.0	1.3
Netherlands	-	100	-	70.1	-	86.2	-	-
Austria	99.1	96.9	5.2	54.1	-	-	0.4	12.0
Poland	73.5	90	1.5	10.0	27.9	64.0	0.2	1.0
Portugal	98.8	50.7	93.3	15.1	0.5	1.6	2.0	0.9
Romania	95.1	94.8	87.6	83.6	10.6	11.6	0.5	2.2
Slovenia	95.1	98.9	2.6	10.2	33.0	77.0	0.8	5.7
Slovakia	68.6	97.7	1.7	16.0	35.4	72.6	0.2	4.7
Finland	99.2	99.5	6.8	19.7	14.1	35.4	-	10.3
Sweden	100	99.9	17.1	22.4	24.9	32.4	31.6	40.6
United Kingdom	-	-	34.8	6.0	13.1	2.6	7.8	2.5
Croatia	88.4	98.3	1.2	3.4	34.5	65.6	0.1	1.6
FYR Macedonia	98.3	-	45.5	-	20.9	-	-	-
Turkey	-	67.3	-	0.7	-	6.5	-	-
Iceland	99.3	76.1	1.9	17.1	4.2	30.7	3.4	17.2
Norway	-	-	17.6	-	28.1	-	7.8	-

Source: Eurostat, UOE

For notes see: http://epp.eurostat.ec.europa.eu/portal/page?_pageid=0_1136184_0_45572595&_dad=portal&_schema=PORTAL

5.3 ICT skills for young and adults

Use of ICT in education and training has been a priority in most European countries over the past decade, but progress has been patchy. There are considerable differences in “e-maturity”, both within and between countries and between schools in the same country (ICT report, 2006). Digital competence is defined in the European Parliament and Council Recommendation as a sound understanding and knowledge of the nature, role and opportunities of ICT in an everyday context: in personal and social life as well as at work.⁴⁹

Considerable evidence of the impact of ICT use on learning and learners is building up, providing a basis for a number of preliminary

conclusions. The PISA survey shows that, on average, pupils with access to a computer at school perform better than pupils without.

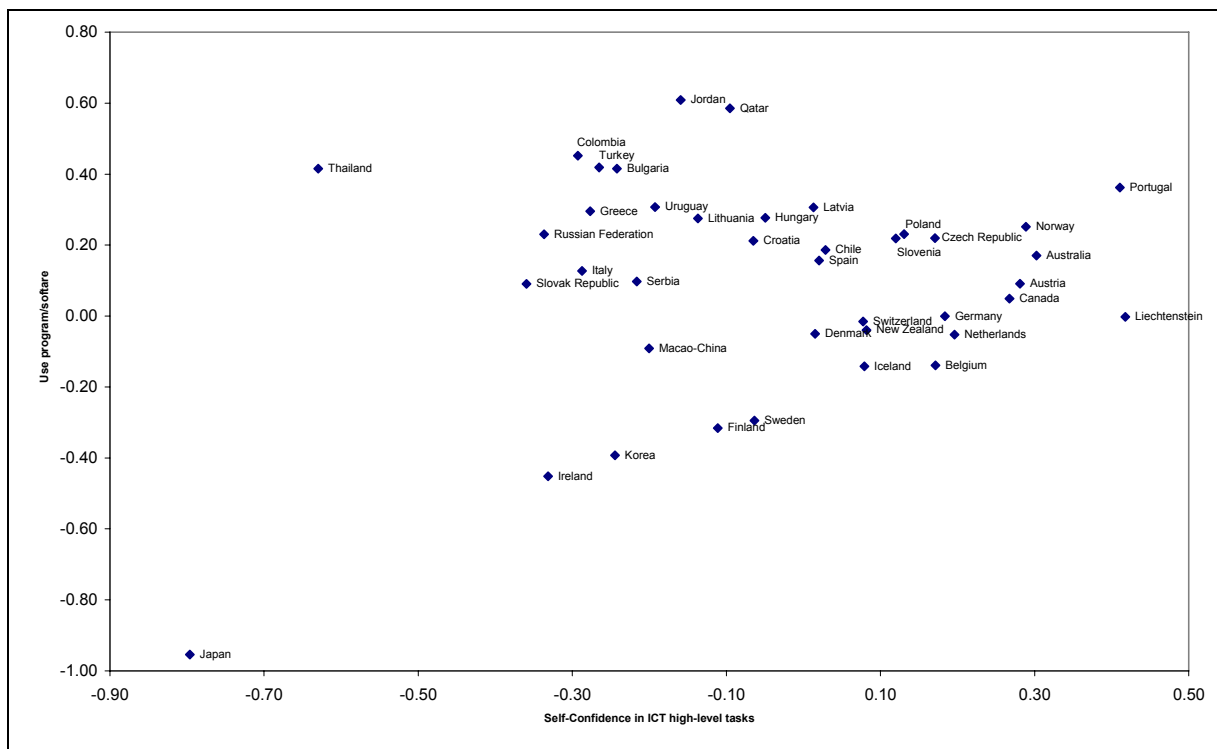
The IEA SITES study (Law et al., 2008) investigates to what extent and how ICT is used in education and how it supports and enhances teaching practice. Nine Member States participated in the study along with 13 other educational systems around the world. What it shows is that there have been great improvements in access to computers and internet since 1998 and participating EU countries have spent more on ICT during the last five years than the other participating educational systems. The study found that the impact of ICT on students’ performance, as perceived by teachers, was highly dependent

on teaching approaches. Students did better in acquiring skills when teachers provided more student-centred guidance and feedback and when they engaged more frequently in advising students on group work and inquiry projects. It was also found that higher levels of reported ICT use did not necessarily go hand in hand with higher levels of perceived learning gains from ICT use. However, the “Benchmarking Access and Use of ICT in European Schools 2006” report testifies to an increase in motivation and attention by students when ICT is used in classroom. Other studies, as reviewed by the European Schoolnet in the 2006 “ICT impact report” indicate further positive effects on attitudes and communication and more reflective skills on the learning process and its outcomes. Furthermore, a series of studies report that ICT does promote independent learning and teamwork with a variety of positive consequences on teaching and learning activities (greater responsibility, better organisation of learning etc.).

According to the Global Information Technology Report 2007-2008, Denmark is the most networked economy in the world, followed by Sweden. Korea and the US show the most notable improvements. The report stresses the importance of a coherent government vision on the importance of ICT, coupled with an early focus on education and innovation to lay the foundations for network readiness and sustainable growth.

PISA has a module on the “ICT familiarity component” in the student questionnaire. It does not directly assess ICT skills, but it asks students how well they do specific computer tasks: “I can do this very well by myself”, “I can do this with help from someone”, “I know what this means but I cannot do it” or “I don’t know what this means”. With these items, PISA has created two self-confidence scales on the use of ICT: in internet tasks and in “high level tasks” (see Chart 5.11).

Chart 5.11 Self-confidence in ICT high level tasks and use of ICT program/software 2006



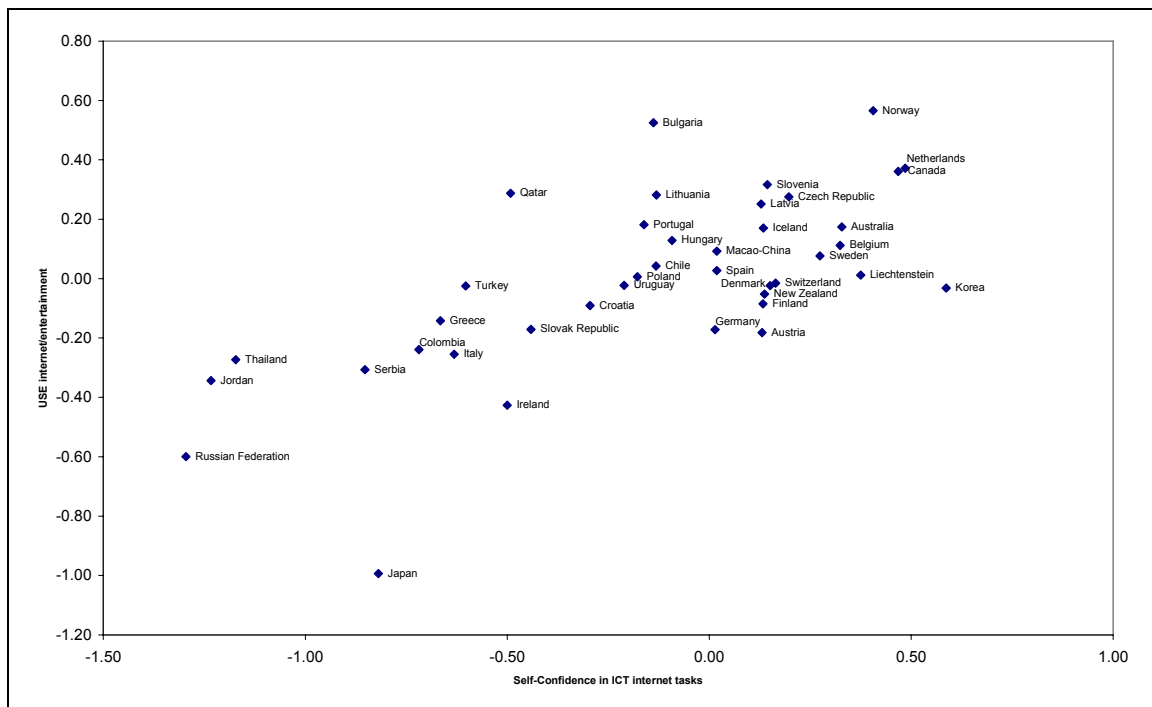
Source: OECD, PISA database 2006

The scales were created by PISA using IRT scaling techniques, higher levels of use or confidence in computers and internet. In addition, PISA has information on the frequency of computer use, where students are asked how often they use computers for the 16 tasks evaluated in their self-perception performance. Information on the place where students usually use computers is also available in PISA 2006 (see App 2 in the Appendix and the chapter on school development).

Compared to countries outside Europe, the European countries have a relatively high degree of self-confidence in the use of ICT, whereas Japan is singled out as the country with by far the lowest self-confidence levels in the field, and also the relatively lowest use of ICT. Korea is also performing below most European countries in these two domains. It is interesting to see Finland and Sweden among the lowest users of ICT in Europe. Jordan and Qatar are best performers, with Bulgaria and Portugal as the European countries with highest levels of use of ICT.

Chart 5.12 illustrates the same as Chart 5.11 but in relation to the internet. For internet confidence, Korea is out in front, with the Netherlands as the first European country. Bulgaria is the highest among the Member States on the use of internet scale, while Norway is the best performing among all countries. Ireland, Italy and Greece perform relatively low on these measures. While there is a positive and relatively clear relationship between self-confidence in internet tasks and use of internet, more use of computer programs does not seem to be related to higher confidence. In other words, countries where the 15 year olds report high confidence in internet use do not necessarily translate into high levels of computer use in general. This begs the question of how far self-confidence is interacting with actual ICT use. Cultural aspects might be driving the way people perceive their self-confidence, and the general level of computer awareness in a country might influence the perceived confidence in ICT use. Availabilities of computers might also play a role, since people can feel confident of doing something, but they might not have the opportunity to actually do it.

Chart 5.12 Self-confidence in internet tasks and use of internet/entertainment. 2006.



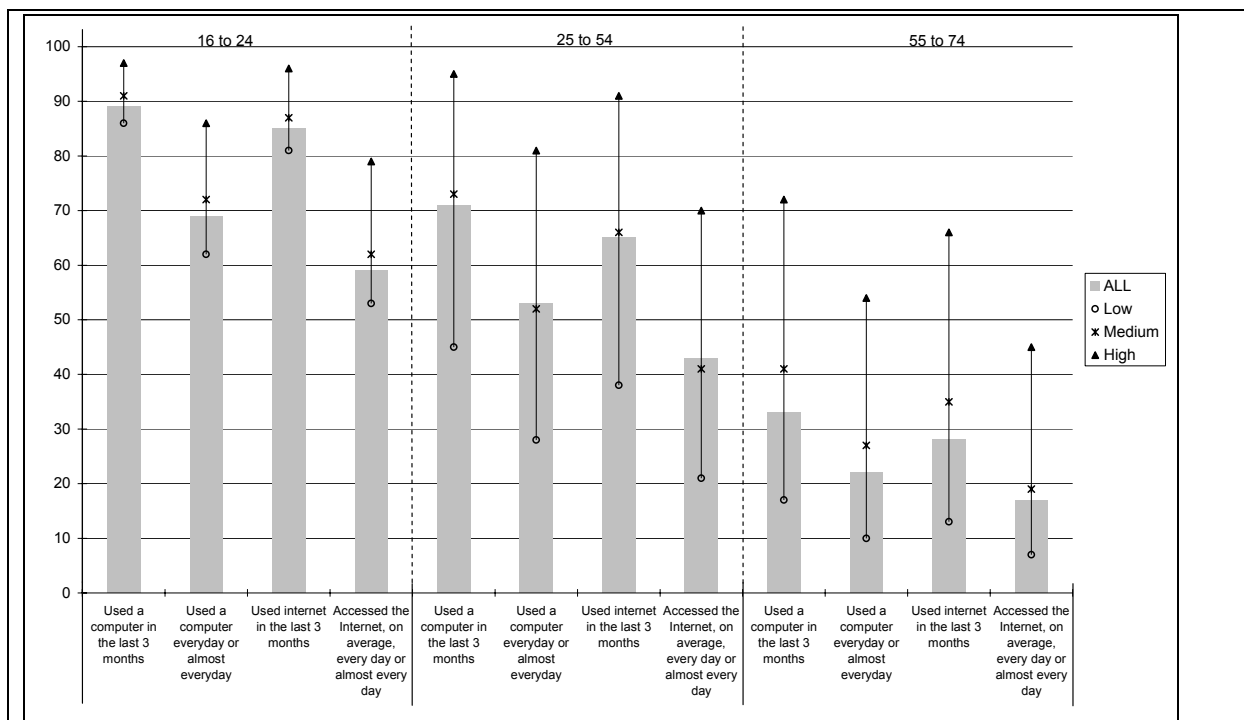
Source: OECD, PISA database 2006

At present only limited data are available on ICT competences amongst adults at European level. In terms of monitoring tools, an important source of comparative cross-national data on ICT skills and computer use can be found in EUROSTAT's Information Society Statistics (ISS). ISS uses two main surveys on "ICT usage in enterprises" and "ICT usage in households and individuals". The aggregate numbers can be obtained by breakdowns of

age group, sex, educational level, employment situation and region.

Chart 5.13 shows the percentage of individuals who have used a computer or the internet and the frequency of use by age and level of education. The chart illustrates the average situation for all Member States, but it gives a good picture of the general situation at country level.

Chart 5.13 Use and frequency of use of computers and internet by age and educational attainment. EU average. 2006



Source: Eurostat

There is a big difference between use and frequency of computer and internet use by age. While almost 90% of all individuals aged 16 to 24 years old have used a computer in the last three months, and around 70% use it almost everyday, the same figures for the age group 55 to 74 years old are 30% and 20% respectively. A similar pattern appears in internet use.

The chart also shows that higher levels of educational attainment are related to higher computer and internet use. For example, 65% of individuals with higher education use the internet every day or almost every day, while this is true of only around 20% of the population with a low level of education. Young cohorts present less differences

between well and low educated. But this is partially due to the fact that many in the young cohorts are still in education. Country differences are considerable in terms of the level of internet and computer use.

They range from almost 90% of all individuals in Sweden using a computer to less than 35% in Romania. In general terms, Scandinavian countries have less difference between young and old, and between well and low educated, while Eastern and Southern European countries have higher differences. In Portugal, for example, the differences are 60% between young and old cohorts in their use of computers. There are also considerable gender differences. Men use computers and the internet more often than women. Luxembourg

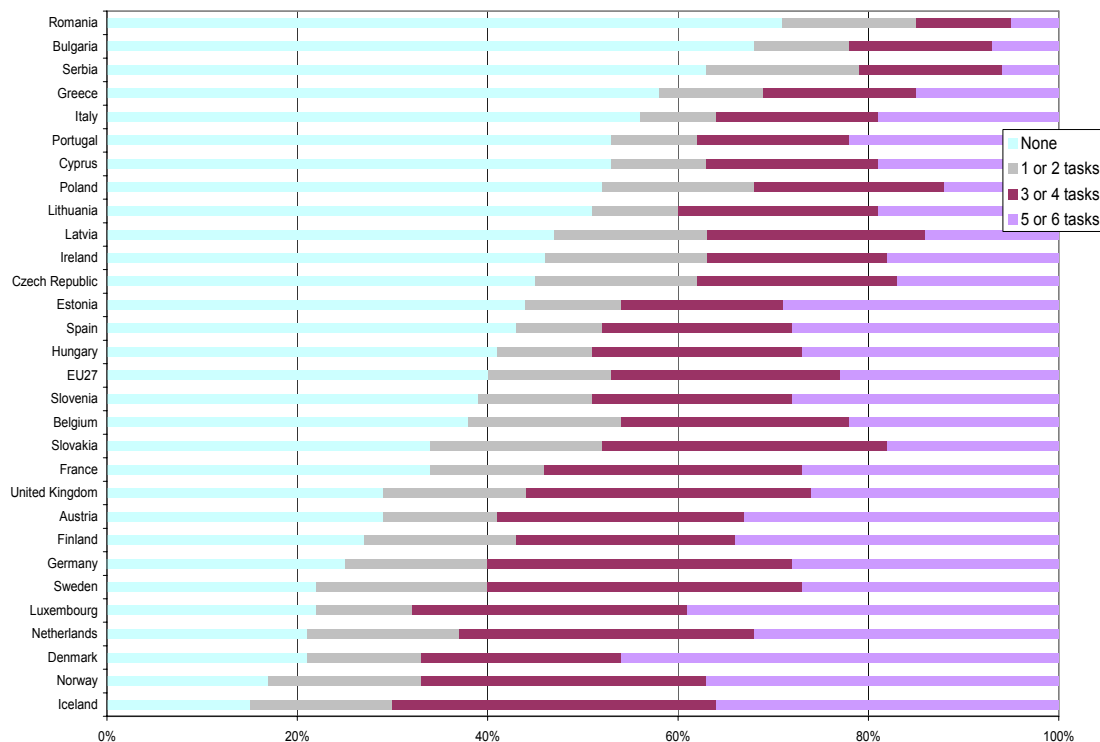
has the highest gender differences here: 68% of men but only 44% of women report using the internet every day or almost every day. Italy, Austria and Greece also have high gender inequalities. The Eastern European countries have smaller differences; in Bulgaria and Estonia, women use computers more than men.

In terms of trends, the percentage of people using the internet and computers has increased in the last three years in the EU27. However, the gap between low and high educated individuals has not narrowed EU. 19% more of the high educated individuals used the internet every day or almost every day in the EU as against 11% more of the low educated between 2004 and 2007.

In almost all EU countries the gap has remain stable or has increased. This is especially true of the frequency of internet use. Only the Netherlands, Luxembourg and the Scandinavian countries show higher growth among low educated individuals in the frequency of use of the internet. For frequency of computer use, low educated individuals are catching up in more EU countries, especially the Scandinavian countries. Gender differences are being reduced almost in all Member States, but the gap in terms of age group is growing.

Computer and internet use will necessarily affect the level of ICT skills, as we shall see later. The general pattern for internet and computer use holds true for ICT skills too.

Chart 5.14 Computer skills by number of tasks or actions. 2006.



Source: Eurostat

The information on skills *per se* available from EUROSTAT — ISS is limited. In terms of e-skills we can get the percentage of people who say they have done some of the following tasks in the last 3 months, in the last year:

- Moved files
- Copy and paste
- Basic arithmetic in a spreadsheet
- Compressed files
- Installed new devices
- Written a computer program

The six tasks could be considered within a gradient of difficulty, since some tasks are easier than others. However, the fast changing pace of ICT makes it hard to assess ICT-skills. Some of the tasks that at one point in time might have required quite sophisticated knowledge of computer use turn out to be easy a few years later.

For example, installing a new device was much more complicated before the widespread

introduction of “plug and play” functionality. Also important to note is that some of these tasks might simply be of no interest for some individuals. Most computer users will have no need to write a computer program or compress a file. Thus, the current way of measuring adults' ICT skills refer more to actual use than to competences.

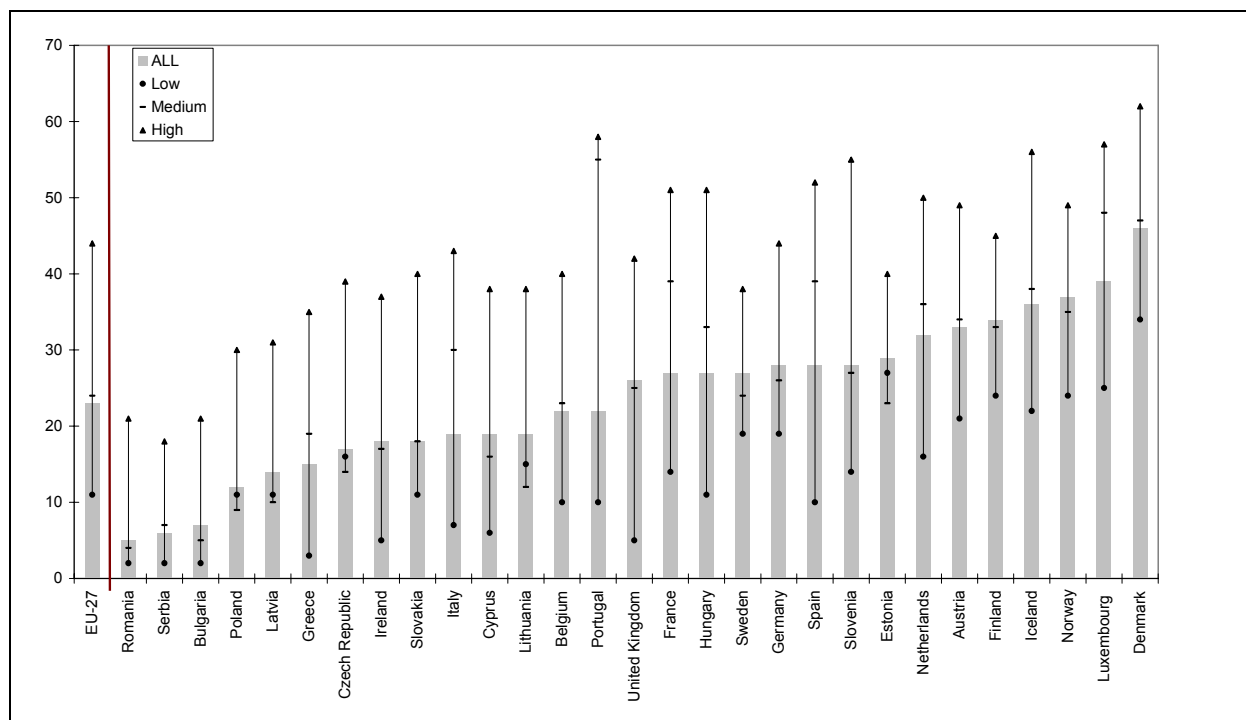
The current measures of ICT skills and use do not explain how ICT are used for complex problem solving, creativity and innovation. Further improvements to ICT measurement should be encouraged.

Looking at the percentage of individuals carrying out each of these tasks per country, we see that Scandinavian countries together

with the Netherlands are among the countries with the lowest proportion of people who have not carried out at least two of the tasks. The range of people who have done none of the six tasks is from 71% in Romania to 15% in Iceland. The Netherlands is the Member State with the lowest percentage (21%).

The percentage with high computer skills (carried out 5 or 6 of the tasks) ranges from less than 5% in Romania to around 45% in Denmark. As in the case of computer and internet use, ICT skills differ by age, gender and educational level. Individuals with higher education report a high level of computer ICT skills compared with individuals with a low level of education.

Chart 5.15 Percentage of individuals that report having carried out 5 or 6 computer tasks by level of education. 2006.



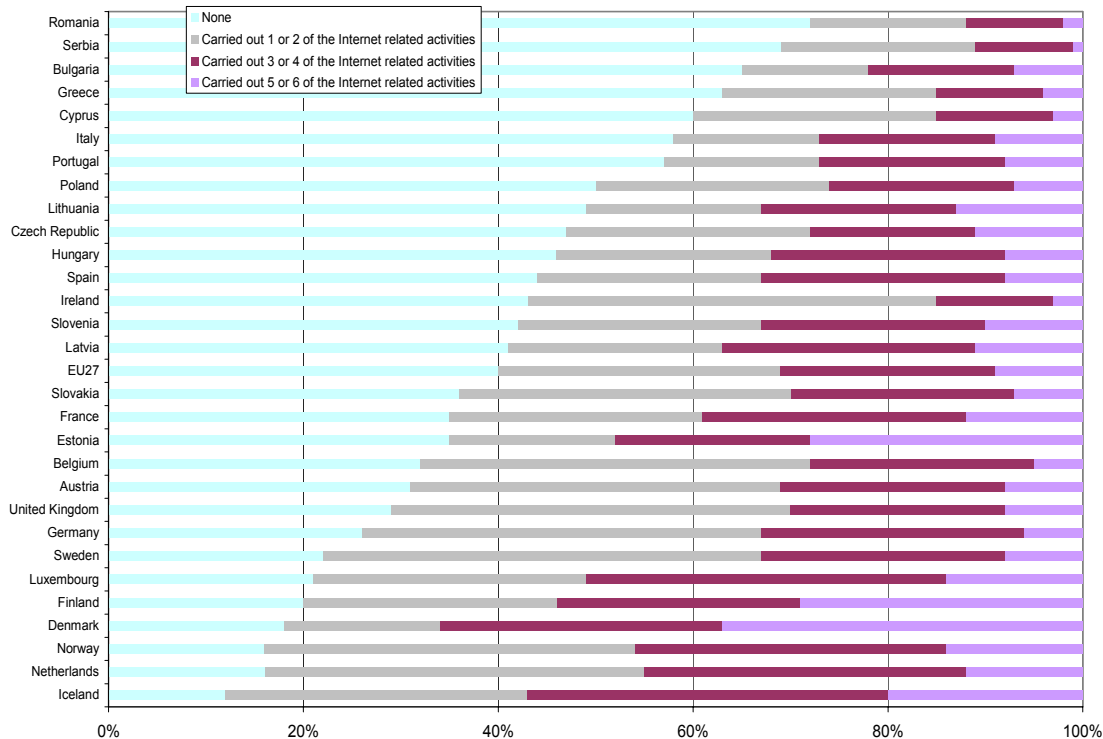
Source: Eurostat

For the EU, there is a difference of 33 percentage points between the low and high educated. Young cohorts tend to carry out more tasks than the older ones. It is interesting to note that the pattern of computer use is similar for young and older individuals. Elderly people report similar ICT skills to youngsters, albeit at a lower level. In both age groups, moving a file and copy and pasting show the highest proportion of individuals,

while writing a computer program or compressing a file has the lowest return.

A similar pattern applies by level of education, but the percentage of people doing each of the tasks is always greater for the better educated individuals. It happens in all countries where data exists. Differences between levels of education are especially marked in Portugal, Hungary, Spain and Slovenia, with a more than 40% gap between low and high educated.

Chart 5.16 Use of Internet, 2006.



Source: Eurostat

Chart 5.16 shows the percentage of individuals carrying out none, one or two, three or four, and five or six internet-related tasks. As in the case of computer use, the differences are quite marked from country to country. Scandinavian countries, together with the Netherlands, are among the ones with the lowest proportion of people who have not carried out at least two of the tasks.

The range of people who have done none is from 71% in Romania to 15% in Iceland. The Netherlands is the Member State with the lowest percentage (21%). EUROSTAT provides information on the use of internet by asking individuals if they have carried out one of the following tasks:

- used a search engine;
- sent an email with attached files;
- posted messages to chat rooms, etc.;
- used the Internet to make phone calls;
- used peer-to-peer file sharing;
- created a Web page

Measuring internet skills is as tricky as measuring computer ICT skills. In this case, the tasks are less clear on the gradient of difficulty. The data are therefore more clearly

an indication of the level of internet use, rather than the level of skill.

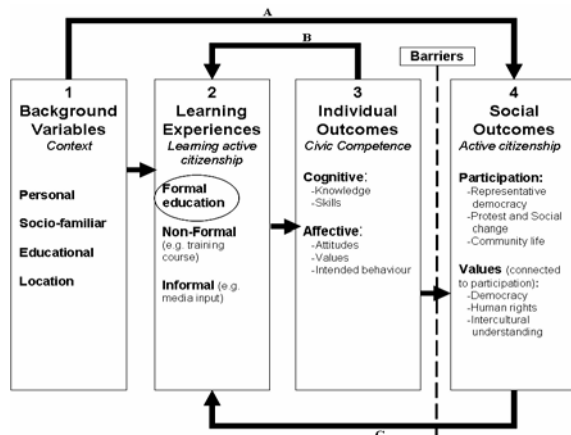
A similar pattern as for computer use appears for the percentage of individuals who report having carried out each of the activities in the last three months by country. Nordic countries and the Netherlands are at the top, while Southern European together with Romania and Bulgaria return lower percentages. Differences are quite big among countries. Romania has the highest percentage of people who have never carried out any of the internet tasks, while the Netherlands is the EU country with the lowest proportion. There is a clear difference in the pattern of internet use by the young and the older cohort. While no more than 10% of older individuals report using chat rooms, 60% of young Europeans do so. The level of education and age differences are thus similar in all countries.

EUROSTAT has been collecting ISS statistics for the last three years in all the Member States. In the five years for which we have data, changes have been slow in general terms. The difference between low and well educated has not been reduced, and this is true for both young and old.

5.4 Civic skills and active citizenship

Exploratory research has taken place on indicator development for active citizenship and civic skills (Hoskins et al 2006a, Hoskins 2008a, and Kerr and Losito 2008). The working definition of Active citizenship which has been used is 'Participation in civil society, community and/or political life, characterised by mutual respect and non-violence and in accordance with human rights and democracy' (Hoskins, 2006b). Two composite indicators have been developed – one on active citizenship (actions), see column 4 chart 5.17, and one on civic competence (knowledge, skills, attitudes and values), see column 3 of the same chart.⁵⁰

Chart 5.17 Measuring Active Citizenship working model



Research in this field has been limited due to the lack of breadth and timeliness of data; nevertheless some interesting findings can be derived from existing data. In order to improve this situation the IEA is carrying out a new study (see part C) which will support the measuring of civic competences. However, how to measure the full breadth of active citizenship activities and values remains unresolved; one possibility would be for Eurostat to collect this data in their future surveys.

Civic competence

In the field of civics a number of exploratory studies on indicators from existing data have been carried out, including the development of a composite indicator on civic competence from IEA CIVED data 1999 by CRELL (Hoskins, 2008). This was based on the notion of competence measurement as described in

the introduction to Chapter 9 and has been further developed by exploring the nature of civic competence, in particular by reflecting on the attributes described in the European Commission Reference Framework on Key Competences and the further developments taken place by the Council of Europe, the research network Active Citizenship for Democracy and the research of Veldhuis and Abs (2006). This list below can be considered a useful basis for discussion on possible curriculum development. The data and scales used to measure the knowledge, skills, attitudes and values from the list below are from the IEA 1999 international Civic Education study of 14-year-olds in school. Not all dimensions however, were available from this data⁵¹.

Based on an empirical⁵² analysis of the IEA CIVED data a framework of four domains of civic competence was established: **Citizenship values**, **Social justice** (both values and attitudes), **Participatory attitudes** and **Cognition about democratic institutions**.⁵³ The results reflect only the situation for 14 year old pupils and not for the general population. Equal weights were given for each dimension and sub-dimension, and the composite indicator proved to be very robust (see Hoskins et al 2008a for further details).

In contrast to what is often observed in rankings such as the Active Citizenship Composite Indicator, the Civic Competence Composite Indicator ranking does not in general show clear geographical patterns.

There is some tendency for Southern European countries to be in the upper part of the ranking, with Cyprus and Greece doing particularly well in the overall Civic Competence Composite Indicator and in the domains of **Citizenship values**, **Participatory attitudes** and **Cognition about democratic institutions**. A common cultural heritage of the foundations of democracy could be a factor in this. However, a Northern European country like Norway can also be found in the top part of the overall Civic Competence Composite Indicator ranking, along with some new Member States such as Poland, Slovakia and Romania. Other Northern European countries such as Denmark and Finland are found in the lower-middle part of the Civic Competence Composite Indicator

rankings, together with some other new Member States such as Lithuania, Slovenia and Hungary.

Two Baltic States close the Civic Competence Composite Indicator rankings together with Belgium (FR). Certain regional results deserve further exploration.

Chart 5.18 The ideal list of knowledge, skills, attitudes, values and intended behaviour.

<p>Knowledge:</p> <ul style="list-style-type: none"> ➤ Key elements of the political and legal system (human rights, social rights and duties, Parliamentary government, the importance of voting) (local, national, European level) ➤ Basic institutions of democracy, political parties, election programmes and the proceedings of elections ➤ The role of the media in personal and social life ➤ Social relations in society ➤ The history and cultural heritage of own country; of predominance of certain norms and values ➤ Different cultures in the school and in the country ➤ Main events, trends and change agents of national, European and world history ➤ The function and work of voluntary groups ➤ Knowledge of current political issues 	<p>Skills:</p> <ul style="list-style-type: none"> ➤ To be able to evaluate a position or decision, take a position and defend a position ➤ To distinguish a statement of fact from an opinion ➤ To resolve conflicts in a peaceful way ➤ To interpret media messages (interests and value systems that are involved etc.) (critical analysis of the media) ➤ To be capable of examining information critically ➤ To possess communication skills (to be able to present one's ideas in verbal and/or written form) ➤ To be able to monitor and influence policies and decisions including through voting ➤ To use the media in an active way (not as consumer but as producer of media content) ➤ To build coalitions; to co-operate; to interact ➤ To be able to live and work in a multicultural environment
<p>Attitudes</p> <ul style="list-style-type: none"> ➤ To feel responsible for your decisions and actions in particular in relationship to other citizens ➤ To feel confident to engage politically ➤ To trust in and have loyalty towards democratic principles and institutions ➤ To be open to difference, change of own opinion and compromise 	<p>Values:</p> <ul style="list-style-type: none"> ➤ Acceptance of the rule of law ➤ A belief in social justice and the equality and equal treatment of citizens ➤ Respect for differences including gender and religious differences ➤ Negative towards prejudice, racism and discrimination ➤ Respect for human rights (freedom, diversity and equality) ➤ Respect for the dignity and freedom of every individual ➤ Tolerance of difference ➤ A belief in the importance of democracy ➤ A belief in the need to preserve the environment
<p>Intended behaviour:</p> <ul style="list-style-type: none"> ➤ To be active in the political community ➤ To be active in the community ➤ To be active in civil society 	

See App1 in the Appendix

Citizenship values

Romania and Lithuania are high performing countries, with Southern European countries again giving the best results, Greece and Cyprus being the highest performers. In contrast, Northern and Western Europe tends to perform less well, with Denmark, England, Belgium (French speaking) and Finland closing the ranking for this dimension, together with Estonia, an outlier, which joins this group at the end of the table.

Participatory attitudes

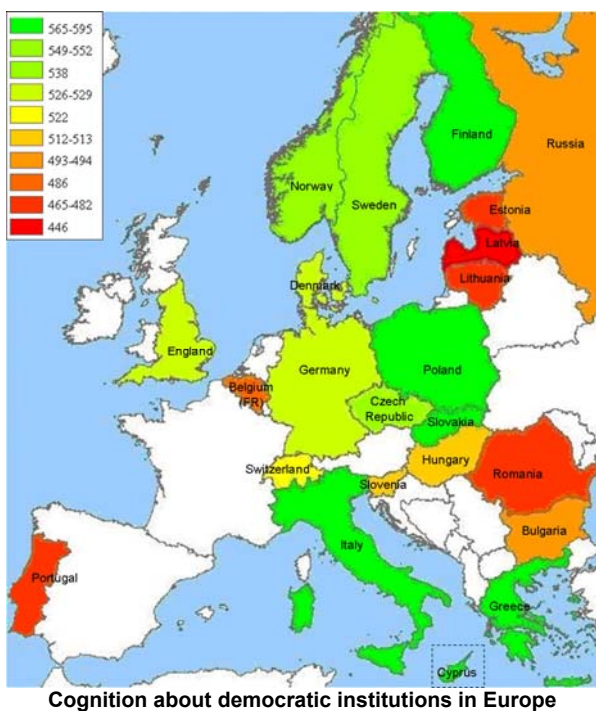
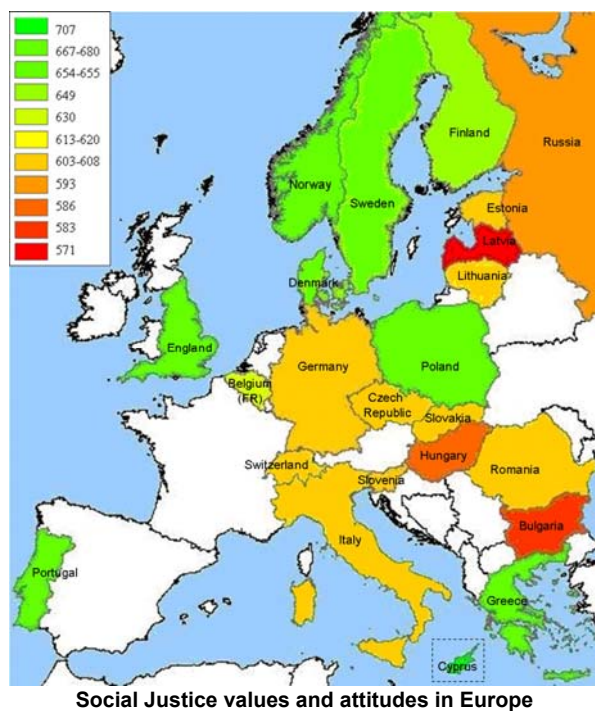
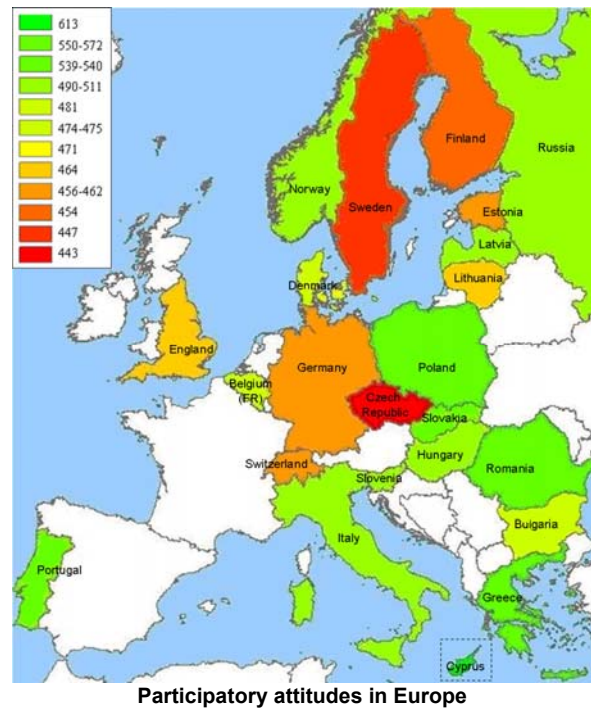
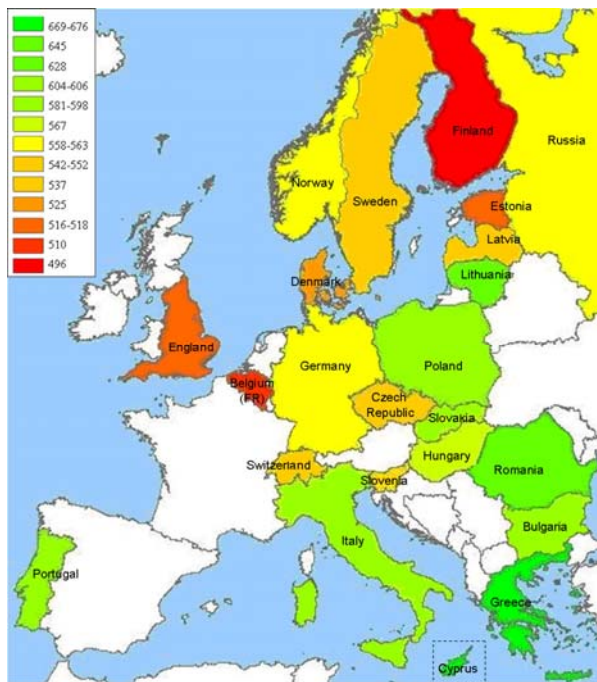
The results for participatory attitudes are similar. Overall, Southern and Eastern European countries tend to perform better in this domain; in particular Cyprus, Portugal, Romania, Poland, and Slovakia are high

performing countries for this dimension. Most of the Northern European countries taking part in the survey (Denmark, Sweden and Finland), and most of the Western European countries that participated (Germany, England and Switzerland) are at the foot of the rankings.⁵⁴

Social justice values and attitudes

For the dimension of Social justice values and attitudes, the results are different, Cyprus, Portugal, Norway and England performing well, in contrast to the Russian Federation, Hungary, Bulgaria and Latvia, all former Communist countries, which are the lower performers in this domain. Poland is the outlier by being both a former Communist country and a high performer.

Map 5.1-4: Civic Competences of young people in Europe (14 year olds)⁵⁵
(Composite Indicator)



Source: IEA, Data 1999

Cognition about democratic institutions

The regional results are less strong for Cognition about democratic institutions, but still follow a similar pattern to that of social justice values and attitudes, with Northern, Southern and Western European countries being found in the top half of the table, with the exception of Slovakia and Poland, which

are high performing countries for this dimension. In contrast, Eastern European countries tend to be located in the bottom half of the table, with Romania, and the Baltic states of Estonia, Lithuania and Latvia giving low performances. The outlier in this case is Portugal, which likewise does not perform well (Hoskins et al., 2006b and Buk-Berge, 2006).

The country trends for **Social justice values and attitudes** and **cognition** and the trends for **Participatory attitudes** and **Citizenship values** can also be found when the data are looked at on the individual level. Here, the closest correlations were found between **Participatory attitudes** and **Citizenship values**, supporting the theory that there is a connection between these two phenomena. Importantly for education purposes there was a higher correlation also between **Social justice values and attitudes** and **Cognition**.

Citizenship values, however, seemed relatively independent of cognition. In addition to the country level trends, there was also a link on the individual level between Social justice values and attitudes and Participatory attitudes. As Social justice correlates with all the dimensions it therefore seems to some extent an underlying principle of civic competence

Active citizenship.

Framework of indicators

CRELL, in cooperation with the Council of Europe, recently developed the Active Citizenship Composite Indicator (Hoskins et al. 2006, and revised in Hoskins and Mascerni (forthcoming)). The measurement model comprises four dimensions: *Protest and social change* (civil society action that hold governments to account), *Representative democracy*, *Community life*, and *Democratic values*. Northern European countries generally deliver the highest performances, with Sweden gaining the highest results across the different domains. Western Europe and Finland turned in mid-table performances. Southern and Eastern European countries achieved the lowest scores (more details on the results can be found in the report (Hoskins 2006)).

While the Active Citizenship Composite Indicator, which uses ESS 2002 data, encompasses a broad range of participatory activities, this breadth is not available in the 2004 or 2006 edition. Thus we have chosen a smaller number of indicators with which it is possible to measure trends. We have two indicators for representative democracy (voting and membership of a political party) and a mini composite of five indicators for the domain of Protest and social change (i) worked in an organisation or association, (ii) worn or displayed a campaign badge/sticker, (iii) signed a petition, (iv) taken part in a lawful public demonstration, or (v) boycotted certain products).

The “Protest mini composite” is strongly correlated with the whole Active Citizenship Composite Indicator and thus constitutes a good proxy for it.

A picture of Europe: Active Citizenship 2002-2004-2006

In order to develop an understanding of whether active citizenship in Europe is changing from the original results of the 2002 Active Citizenship Composite Indicator we have created a time series on these selected indicators for 2002, 2004 and 2006. However, it should be noted that a time series of four years is not a particularly long period from which to draw strong conclusions. For these indicators we have established above we have 13 countries which took part in each round. What can be immediately seen from table 5.3 is that over the four year period the indicators for Protest and social change, and Representative democracy (voting and membership of political parties) remain fairly constant, with continued marked differences in regional levels of participation across Europe.

Table 5.3 Development of Voting, Membership in political parties and Protest and Social change in 13 European countries. 2002, 2004 and 2006.

	Voting			Membership of political parties			Protest and social change		
	2002	2004	2006	2002	2004	2006	2002	2004	2006
Belgium	87.6	93.5	95.6	7.5	7.1	7.2	55.4	37.1	49.8
Germany	85.1	80.9	79.7	3.5	3.1	3.9	52.8	51.5	48.8
Denmark	94.2	92.1	93.6	5.8	6.4	7.0	50.3	56.1	60.7
Spain	80.2	83.3	81.0	3.1	4.2	2.5	32.4	51.4	37.1
Finland	82.2	79.4	84.1	7.4	7.3	7.7	57.5	58.9	62.1
France	75.6	77.2	78.6	2.4	1.8	2.2	53.0	52.2	52.2
Hungary	80.9	77.5	76.9	1.6	0.8	1.5	10.4	10.2	9.9
Poland	66.3	64.6	65.9	1.7	1.0	1.0	15.5	9.1	12.0
Portugal	73.4	72.1	77.0	4.0	3.2	3.5	14.3	12.2	12.1
Sweden	87.8	89.6	89.9	8.5	6.7	6.4	62.9	69.6	66.9
UK	72.9	69.9	72.9	3.0	2.6	2.9	53.7	46.4	53.0
Norway	85.3	86.3	86.8	9.2	8.8	9.3	61.7	62.1	63.9
Switzerland	70.2	67.2	66.9	9.3	8.1	8.2	60.6	54.3	54.7

Voting

Self reported voting (which is certainly higher than actual voting measures) stays very much the same across the four years. As would be expected Belgium tops the voter turnout, thanks presumably to the compulsory voting laws. Belgium also has the largest increase in reporting voters, showing an 8 percentage point increase over the four years to 96% in 2006. Denmark is also high, even without compulsory voting, remaining in the low nineties throughout. Sweden remains constant at just below 90% over the four year period. Switzerland shows the greatest decline in voting over this period, with a 4 percentage point change from 70% to 66%, most probably as a result of the high number of national referendums in the country during this period. Poland reports the lowest voter turnouts across Europe, scoring roughly 65% across the four years.

Membership of political parties

Membership of political parties is quite low across Europe and the scores remain fairly static. Norway has the highest results with about 9% of the population claiming to be a member of a political party. Denmark is the country with the highest increase, going up by 1.1% to almost 7%. Sweden is the country with the largest decrease, of 2.1 percentage points to 6.4%. What should be noted are the very low and declining scores for Poland, which dropped from 1.7% in 2002 to 0.9% in 2006, and Hungary, which in 2004 had 0.9% declaring membership of a political party, with a slight recovery to 1.5% in 2006.

Protest and Social Change

For the indicator of Protest and Social change the general patterns for country groupings remain the same, with high participation in Northern Europe and very low participation in Eastern Europe. Sweden recorded the highest rate in 2004 with almost 70% participation. Denmark increased its participation most, rising by 10 percentage points to 60%. France, UK and Germany remain fairly constant at around the 50% mark. Hungary, Poland and

Portugal consistently record 12% or less participation levels.

The trends show that the gap between the regional results seem to be increasing rather than narrowing and the younger democracies are not looking positive in the development of their civil society. If we then take the domain of Protest and social change as a proxy for the total of active citizenship activities, the marked differences between regions within Europe highlight a need for further work towards on democracy and social cohesion for Eastern European countries.

5.4.1 Impact of formal education on active citizenship

Using the same indicator from ESS 2006 to measure active citizenship (voting, membership of a political party and five indicators compressed into a mini composite on Protest and social change) CRELL research centre has measured the impact of years of formal education on active citizenship (Hoskins, D'Hombres and Campbell, 2008). Their results uniformly suggest that there is a significant democratic return associated with formal education. They found that education is positively and significantly correlated with Active Citizenship behaviour. Tertiary education has by far the biggest affect, with a 27.3% impact on participation in the domain of Protest and Social change. Since this domain can be used as a proxy for the whole active citizenship composite indicator, this would be another strong argument for the democratisation of tertiary education. However, it is difficult to say for sure that this correlation is causal: many variables have been controlled for, but there could be other factors involved. The study by Elchardus and Spruyt (2007) in Belgium (Fl) highlighted that it may not actually be the learning experience of tertiary education but the access to it that creates the positive identity of active citizen and that the lack of access to higher education can introduce negative attitudes, identity and behaviour.

Appendix

App 1

The knowledge, skills, attitudes, values required to be an active citizen, based on the attributes described in the European Commission Reference Framework on Key Competences, and further development by the Council of Europe and under the research of Veldhuis and Abs (2006).

The above list can be used to aid curriculum development on civic competence. It should, however, be recognised that school is only one of the learning opportunities for civic competence, and that the full spectrum of learning opportunities, e.g. community, family, media and youth NGOs, can be brought in.

App 2

ICT Internet/entertainment use

The **index of ICT Internet/entertainment use** was derived from students' responses about the frequency with which they use computers for the following reasons: *i*) browse the Internet for information about people, things, or ideas; *ii*) play games; *iii*) use the Internet to collaborate with a group or team; *iv*) download software from the Internet (including games); and *v*) download music from the Internet and *vi*) for communication (e.g. e-mail or "chat rooms"). A five-point scale with the response categories "almost every day", "once or twice a week", "a few times a month", "once a month or less" and "never" was used. All items were inverted and positive values on this index indicate high frequencies of ICT use.

ICT program/software use

The **index of ICT program/software use** was derived from students' responses about how much they use computers for the following reasons: *i*) write documents (e.g. with <Word® or WordPerfect®>); *ii*) use spreadsheets (e.g. <Lotus 1 2 3® or Microsoft Excel®>); *iii*) drawing, painting or using graphics programs; *iv*) use educational software such as mathematics programs; and *v*) writing computer programs. A five-point scale with the response categories "almost every day", "once or twice a week", "a few times a month", "once a month or less" and "never" was used. All items were inverted, and positive values on this index indicate high frequencies of ICT use.

Self-confidence in ICT Internet tasks

The **index of self-confidence in ICT Internet tasks** was derived from students' beliefs about their ability to perform the following tasks on a computer: *i*) chat online; *ii*) search the Internet for information; *iii*) download files or programs from the Internet; *iv*) attach a file to an e-mail message; *v*) download music from the Internet; and *vi*) write and send e-mails. A four-point scale with the response categories "I can do this very well by myself", "I can do this with help from someone", "I know what this means but I cannot do it" and "I don't know what this means" was used. All items were inverted for IRT scaling, and positive scores on this index indicate high self-confidence.

Self-confidence in ICT high-level tasks

The index of self-confidence in ICT high-level tasks was derived from students' beliefs about their ability to perform the following tasks on a computer: *i*) use software to find and get rid of computer viruses; *ii*) edit digital photographs or other graphic images; *iii*) create a database (e.g. using <Microsoft Access®>); *iv*) use a word processor (e.g. to write an essay for school); *v*) use a spreadsheet to plot a graph; *vi*) create a presentation (e.g. using <Microsoft PowerPoint®>); *vii*) create a multi-media presentation (with sound, pictures, video); and *viii*) construct a web page. A four-point scale with the response categories "I can do this very well by myself", "I can do this with help from someone", "I know what this means but I cannot do it" and "I don't know what this means" was used. All items were inverted for IRT scaling, and positive values on this index indicate high self-confidence.

Source: OECD PISA