

EDUCATION AT A GLANCE 2015

Education at a Glance: OECD Indicators is the authoritative source for accurate and relevant information on the state of education around the world. It provides data on the structure, finances, and performance of the education systems in the 34 OECD countries, as well as a number of G20 and partner countries.

For all the Indicators based on the joint UNESCO/OECD/Eurostat data collection, an EU21 average is presented. EU21 countries are those that are members of both the European Union and the OECD. These 21 countries are: Austria, Belgium, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Poland, Portugal, Slovenia, the Slovak Republic, Spain, Sweden and the United Kingdom.

European Union

The European Union's involvement in education has a long history, first with education programmes (the COMETT programme, in 1987, followed by the most recent Life Long Learning Programme, and the ERASMUS+ programme) and then with policy cooperation. Although each EU country is responsible for its own education and training (ET) system, EU policy is designed to support national actions and help to address common challenges in attaining the ET2020 benchmarks. Although systems are converging to achieve those goals, significant differences remain across countries. This Country Note on the European Union focuses on six major topics covered in the 2015 edition of *Education at a Glance: OECD Indicators*. These topics are:

- Initial education
- Equity in education and the labour market
- Educational attainment, skills and participation in the labour market
- Tertiary education: Short cycle, bachelor's, master's and doctoral programmes (based on the new ISCED 2011 classification)
- Financing of education (from primary to tertiary)
- The teaching profession

Findings related to Europe 2020 Strategy benchmarks are noted with the label "ET2020" in this note.

Initial education

Early childhood education is almost universal in most EU 21 countries.

"ET2020: At least 95% of children (from 4 to compulsory school age) should participate in early childhood education"

For most children enrolled in EU-21 and in OECD countries, formal education begins well before they are five years old. On average in 2013, 91% of 4-year-old children in EU 21 countries were enrolled in early childhood education (the OECD average is 88%). In Belgium, Denmark, France, Germany, Italy, Luxembourg, the Netherlands, Spain and the United Kingdom but also in Iceland, Israel, Japan, New

Zealand and Norway, more than 95% of 4-year-olds were enrolled (Table C2.1 and Chart C2.1). This is important, given that 15-year-old students who had attended at least one year of pre-primary education perform better on the OECD Programme for International Student Assessment (PISA) than those who had not attended – even after accounting for their socio-economic background.

Participation in early childhood education is particularly beneficial for children with an immigrant background.

Among immigrant children of comparable socio-economic status who had arrived in their OECD host country before the age of 6, those who had attended pre-primary education scored better in the PISA reading assessment, when they were 15 years old, than those who had not attended pre-primary education in their OECD host country. The performance gap between the two groups is 75 score points, the equivalent of around two years of schooling (the performance gap related to pre-school attendance among non-immigrant 15-year-old students is narrower, but still considerable). The benefits of early childhood education for immigrant children are particularly significant in France and Finland but also in Israel and the United States. This finding has special resonance in the United States, where proportion of immigrant children who are enrolled in early childhood education is relatively small.

In addition, early arrival in the host country (e.g. before the age of six) and thus full participation in mandatory schooling contributes to better results among immigrant children. Those who arrived in their OECD host country before the age of 6 score 19 points higher in the PISA reading test, on average, than those who had arrived between the ages of 6 and 10. In Germany, the gap is 58 score points – the equivalent of around one-and-a-half years of schooling (see Table 13.A1.6 in *Indicators of Immigrant Integration 2015: Settling In*).

Across EU-21 countries and OECD countries, the percentage of low achievers in the three core subjects measured in PISA 2012 is below 15%. However, significant differences are observed between boys and girls.

“ET2020: Fewer than 15% of 15-year-olds should be under-skilled in reading, mathematics and science. “

PISA finds that 15-year-old boys are more likely than girls the same age to be low achievers. In 2012, on average across EU 21 countries, 13% of boys and 9% of girls did not attain the PISA baseline level of proficiency in any of the three core subjects measured in PISA – reading, mathematics and science (the OECD average is 14% for boys and 9% for girls).

On average across EU21 countries, girls outperformed boys in all three core PISA subjects by an average of 4 percentage points; but across countries, differences (in favour girls) range from almost zero percentage points in Luxembourg and the United Kingdom to 8 percentage points in Sweden and 11 percentage points in Greece (Table A10.1).

The sizeable number of boys who fail to attain the baseline level of proficiency in all three core PISA subjects is a major challenge for education systems. Students who perform poorly in all subjects are hard to motivate and keep in school. Because of their low levels of skills, these students may also feel disconnected from and disengaged with school.

Familiarity with computers helps 15-year-old boys with digital reading; but using computers intensively at school is associated with significantly poorer performance.

Only 17% of students spend one hour or more at school using the Internet, on average across OECD countries, while more than 33% of them do not spend any time using the Internet at school. The association between the intensity of Internet use at school and PISA performance in reading is not linear.

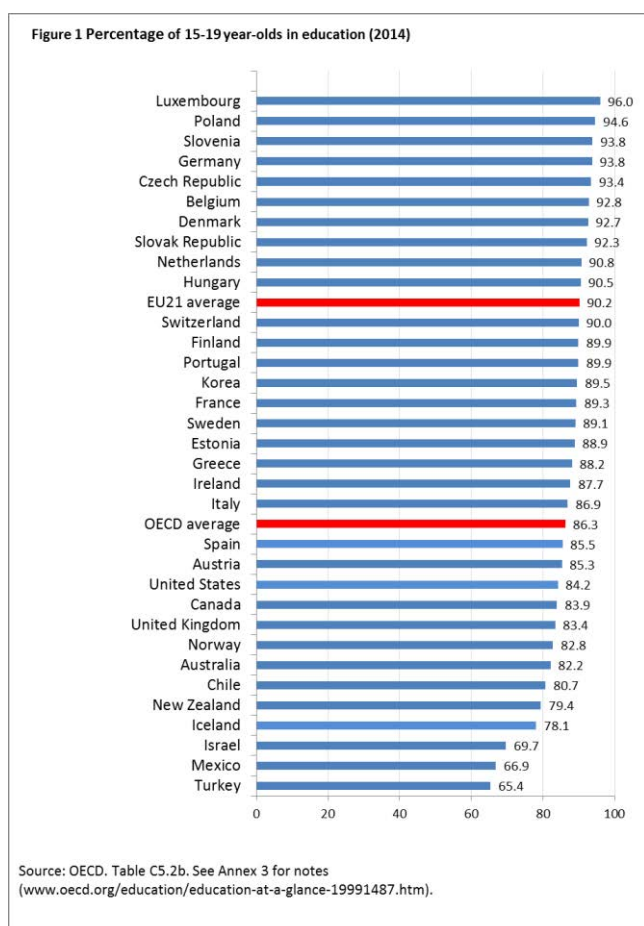
While PISA results suggest that limited use of computers at school may be better than not using computers at all, using computers more intensively than the OECD average tends to be associated with significantly poorer student performance in most OECD countries (see more details in the OECD publication “Students, Computers and Learning : Making the Connection”). The use of ICT is linked to better student performance only in certain contexts, such as when computer software and internet connections help to increase study time and practice (Table D8.1).

On average, 15-year-old boys score 4 points higher on the computer-based PISA reading test than on the paper-based reading test, which were both conducted in PISA 2012. By contrast, 15-year-old girls perform 8 points lower in digital reading than in the paper-based reading test, on average. As a result, in all countries and economies that participated in PISA 2012, the gender gap in reading performance was narrower in digital reading than in print reading. Girls outperform boys in digital reading by an average of 26 score points, compared to an average of 38 score points – the equivalent of nearly one year of schooling – in print reading (Table D8.3).

Equity in education and the labour market

On average across EU-21 countries, around one in five 20-24 year-olds is neither employed nor in education or training.

“ET2020: The rate of early leavers from education and training should be below 10%.”



Early school leavers are defined by the European Union as 18-24 year-olds who have only lower secondary education or less, and are no longer in education or training. *Education at a Glance* measures the number of young people who are neither employed nor in education or training (NEET) among 15-19 year-olds, 20-24 year-olds and 25-29 year-olds, at all levels of attainment, and among 15-29 year-olds and 25-29 year-olds by level of attainment. On average across EU21 countries in 2014, 15.6% of 15-29 year-olds, 6.3% of 15-19 year-olds, 17.9% of 20-24 year-olds and 21.1% of 25-29 year-olds were NEETs (Table C5.2a). The most important age to study when analysing the NEET population are 20-24 year-olds. At this age, compulsory education does not affect the proportion of inactive or unemployed persons. In 2014, Greece, Italy and Turkey were the only OECD countries where more than 30% of 20-24 year-olds were NEETs (Table C5.2a and Chart C5.1).

The proportion of 15-19 year-olds in education has grown over time, as in most OECD and EU21 countries, education policy seeks to encourage young people to complete at least upper secondary education. The result of these efforts is

seen in young people's participation in education beyond compulsory schooling. Many countries have attained near-universal access to education among 15-19 year-olds. On average across EU21 countries,

90% of 15-19 year-olds were in education in 2014 – a proportion 4 percentage points larger than the OECD average. Since 2005, this rate increased by almost 3 percentage points across OECD countries (Figure 1). Between 2005 and 2014, the largest increases were observed in some EU21 countries (Greece, Ireland, Italy, Portugal, Spain and the United Kingdom) and in Mexico (Table C5.2b).

The expansion of education has given many young people an opportunity to attain a higher level of education than their parents...

There are now more people participating in education than ever before. Indeed, both the highest tertiary attainment rates (39% for EU21 countries and 41% for OECD countries) and the smallest proportion of people who have not completed at least upper secondary education (15% for EU21 countries and 17% for OECD countries) are found among 25-34 year-olds (Tables A1.2a and A1.3a). This shows that in most countries for which information is available, there has been an expansion of access to education.

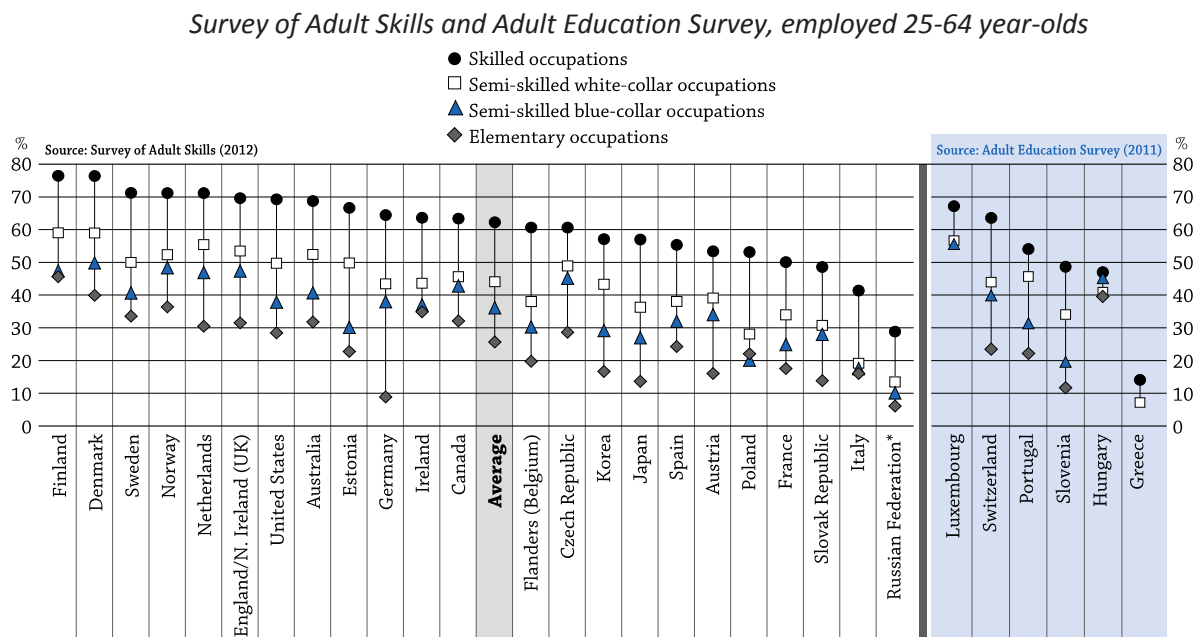
On average among the countries participating in the 2012 Survey of Adult Skills (PIAAC), about 32% of 25-34 year-olds non students have a higher level of education than their parents (upward mobility). In most countries, educational upward mobility is considerably more common than downward mobility, especially in France, Ireland, Italy, Korea, the Russian Federation and Spain, where the difference between generations equalled or exceeded 40 percentage points. In Estonia, Germany, Norway and Sweden, educational downward mobility is more pervasive than upward mobility. However, in most countries, 40% to 50% of adults have the same educational attainment as their parents (status quo). This share is even larger in the Czech Republic and the Slovak Republic, where more than two out of three 25-34 year-olds attained the same level of education as their parents (Table A4.1a).

Higher levels of education and skills lead to the acquisition of more skills.

“ET2020: At least 15% of 25-64 year-olds should have participated in formal and non-formal learning during the last four weeks.”

Some 22% of 25-64 year-olds across EU 21 countries (the OECD average is 24 %) have not attained upper secondary education. These adults would benefit greatly from participating in lifelong learning activities. Achieving inclusive growth with a rapidly ageing population means that Europe will have to fully exploit the talent pool among the school-age population, but also among the working-age population. Offering opportunities for re-skilling and up-skilling is thus essential. The EU benchmark on adult education and training captures training activities undertaken by individuals in the four weeks before the survey, while *Education at a Glance* reports results from the 2012 Survey of Adult Skills (PIAAC) on participation in adult education or training during the 12 months preceding the survey (Table A1.2a).

Education at a Glance finds that, across countries and sub-national entities that participated in the Survey of Adult Skills, about 49% of all employed adults participate in employer-sponsored formal and/or non-formal education in a given year. The proportion ranges from more than 60% in Denmark, Finland, the Netherlands and Norway, to less than 40% in France, Italy, Poland, the Russian Federation and the Slovak Republic (Table C6.2a).

Figure 2: Participation in employer-sponsored education, by occupation (2011, 2012)


Notes: The data for the countries having participated in the Survey of Adult Skills refer to “employer-sponsored formal and/or non-formal education”. The data for the countries having participated in the Eurostat Adult Education Survey (AES) refer to “employer-sponsored”, job-related, non-formal education and training”.

* See note on data for the Russian Federation in the *Methodology* section.

Countries are ranked in descending order of participation in employer-sponsored formal and/or non-formal education among people in skilled occupations.

Source: OECD. Table C6.2c.

See Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink  <http://dx.doi.org/10.1787/888933284342> (Education at a Glance 2015, Chart C6.2)

Participation in employer-sponsored formal and/or non-formal education in all countries is strongly related to proficiency levels in key skills, such as literacy and numeracy, as well as to educational attainment. The group of workers in the most skilled occupations is thus more likely to participate in employer-sponsored formal and/or non-formal education than the group of workers in semi-skilled white-collar occupations. The difference in likelihood between the two groups varies from 1.1 in Hungary where participation of skilled workers (47%) is close to that of semi-skilled workers (41%), to 2.2 in Italy, where participation of skilled workers (41%) is more than double that of semi-skilled workers (19%) (Figure 2). Moreover, on average across countries, about 60% of workers in the most skilled occupations participate in employer-sponsored formal and/or non-formal education, while only about 25% of workers in elementary occupations do.

Those least likely to participate in adult learning tend to be the adults who would need it most. Adult learning is least prevalent among low qualified, older and unemployed adults. This points to a low-skills trap: those with the greatest need for up-skilling participate the least in lifelong learning and so are unable to improve their often precarious situation in the labour market.

Educational attainment, skills and participation in the labour market

The vast majority of young people in EU21 and OECD countries will complete upper secondary education over their lifetime. For those who do not go on to tertiary education, vocational qualifications offer a surer route to employment.

Graduating from upper secondary education has become increasingly important in all countries, as the skills needed in the labour market are becoming more knowledge-based and workers are progressively required to adapt to the uncertainties of a rapidly changing global economy. Based on current patterns, it is estimated that an average of 85% of today's young people in OECD (and EU21) countries will complete upper secondary education over their lifetimes. Analysing those countries for which comparable trends data are available, the first-time graduation rate at the upper secondary level increased across EU21 countries and also across OECD countries from 80% in 2005 to 85% in 2013 (Table A2.4).

There are substantial differences across OECD countries in the prevalence of vocational qualifications. In most OECD countries, most adults with upper secondary or post-secondary non-tertiary education as their highest level of education have vocational qualifications. By contrast, in Greece, Portugal and Spain as well as in Canada, Chile and Israel, more than 60% of adults at this level of attainment have general qualifications. In Australia, Turkey and the United Kingdom, both programme orientations are equally represented (Table A5.1a and Chart A5.3).

The labour market outcomes of the population with upper secondary or post-secondary non-tertiary education vary according to the type of programme pursued. Across EU21 countries, 75% of 25-64 year-olds with a vocational upper secondary or post-secondary non-tertiary qualification are employed – a rate that is 6 percentage points higher than that among individuals with a general upper secondary education as their highest qualification (Table A5.5a and Chart A5.3).

In OECD and EU21 countries, there is a relatively large pool of individuals with an upper secondary qualification who are either unemployed or inactive.

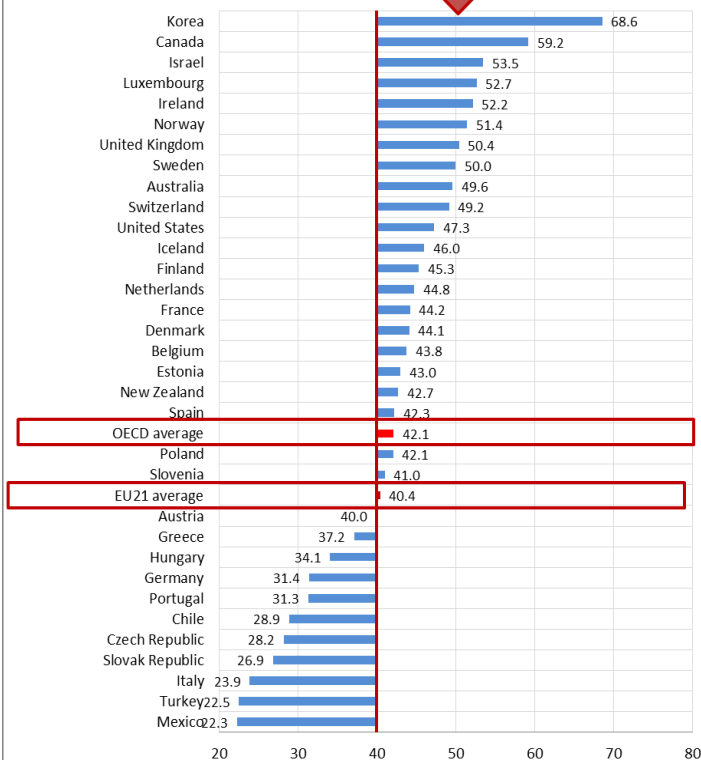
Across EU21 countries in 2014, 20% of adults who have upper secondary or post-secondary non-tertiary education as their highest level of attainment, regardless of the orientation of the education programme, were inactive (14% among men and 26% among women), and 9% were unemployed (8.4% among men and 10% among women) (Tables A5.5a and A5.5b). Data for men broken down by programme orientation shows that, on average across EU21 countries (as well as the OECD average), 25-64 year-old men with general upper secondary or post-secondary non-tertiary education as their highest level of attainment are more likely to be unemployed (9.4%) than those with vocational upper secondary education (9.2%) and are also much more likely to be inactive (16% among those in general programmes versus 11% among those in vocational programmes). It should be borne in mind, however, that those with a diploma from general programmes are more likely to continue education after they graduate from secondary school (Table A5.5a). Access to higher levels of education has expanded steadily over the past decade, yet there are significant differences across countries.

“ET2020: At least 40% of people aged 30-34 should have completed some form of tertiary education”

Over the past few decades, all OECD and EU-21 countries have seen significant increases in the educational attainment of their populations. Tertiary education has expanded markedly, and in most EU-21 countries, a large majority of 25-64 year-olds now has attained at least upper secondary education. Many OECD and EU21 countries can expect a significant increase in the proportion of their population that attains tertiary education, especially among young adults. In 2014, an average of 40% of 30-34 year-olds in EU21 countries had completed tertiary education, compared with the OECD average of 42% and an

Figure 3 :Percentage of 30-34 year-olds who have attained tertiary education (2014)

At least 40% of people aged 30-34 should have completed some form of tertiary education



Source: OECD, Table A1.3a. See Annex 3 for notes
(www.oecd.org/education/education-at-a-glance-19991487.htm).

average of 47% for example in the United States. In 2014, only 7 out of the EU21 countries covered in *Education at a Glance 2015* had not reached this goal (Table A1.3a and Figure 3).

However, changes in attainment rates vary greatly across countries. Differences in the increase in tertiary attainment rates between 2000 and 2014 across EU21 countries range from 4 percentage points in Germany, 8 percentage points in Italy and 9 percentage points in Sweden to 17 percentage points in the United Kingdom, 19 percentage points in Ireland and 28 percentage points in Luxembourg. Meanwhile, during the same period, southern EU-21 countries were able to reduce the proportion of people without upper secondary or post-secondary non-tertiary education. For example, this proportion shrank by 24 percentage points in Portugal, 19 percentage points in Greece, 18 percentage points in Spain and 17 percentage points in Italy; while in Austria, Estonia and Germany, the decrease in this proportion has been smaller, probably because the percentage of people without this level of education was already low (Table A1.4a).

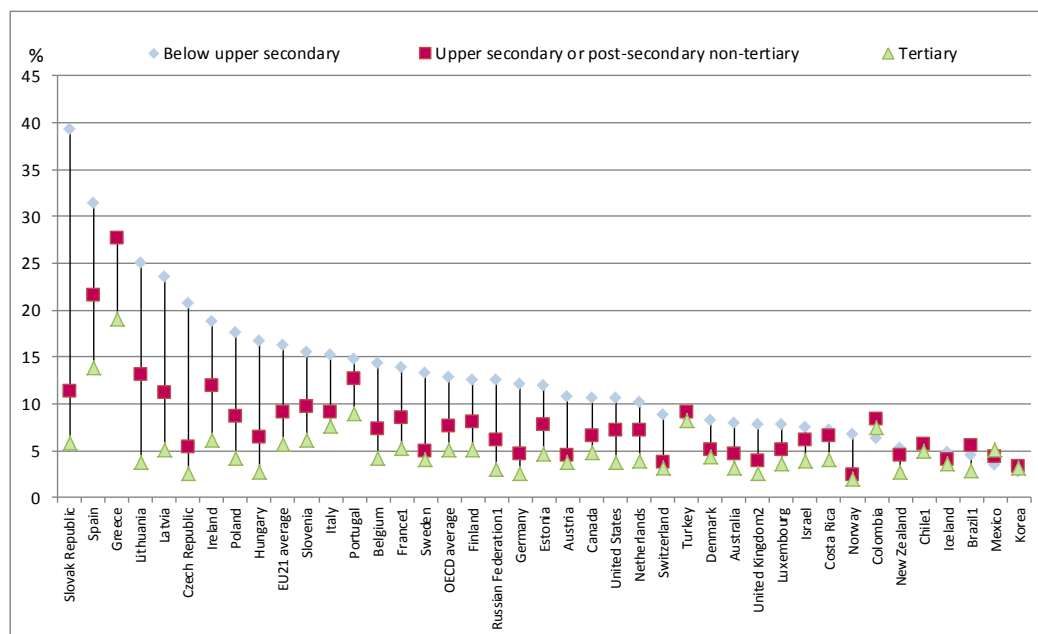
Higher are the levels of education attained, higher are the employment rates. Tertiary education continues to offer insurance against economic downturns but unemployment rates vary considerably between countries.

Even during the financial crisis, employment rates were consistently higher for people with a tertiary education than for those without that level of education. In 2014, the employment rate among people with a tertiary degree was, on average across EU21 countries, 10 percentage points higher than that among people with upper secondary education (10 percentage points across OECD countries) and 31 percentage points higher than that among people without upper secondary education as their highest level of attainment (28 percentage points across OECD countries, Table A5.3a).

Thus, having a tertiary education increases the likelihood of being employed and reduces the likelihood of being unemployed. As shown in Figure 4, this finding is not limited to EU21 countries; it also holds true across all OECD and G20 countries. On average across EU21 countries, the unemployment rate among tertiary-educated adults was 5.7% in 2014, compared with 9.1% among people with upper secondary or post-secondary non-tertiary education, and 16.2% among people with below upper secondary education. However, there are significant differences across EU-21 countries. For example, in the Slovak Republic, the gap in unemployment rates between people who hold a tertiary qualification and those whose highest qualification is below upper secondary is larger than 30 percentage points and almost 20 percentage

points in the Czech Republic and Spain. By contrast, this difference is less than 5 percentage points in Denmark and Luxembourg (Table A5.4a and Figure 4).

Figure 4: Unemployment rates (25-64 year-olds), by educational attainment (2014)



1. Brazil, Chile, France, the Russian Federation: Data for year 2014 refer to year 2013.


2. The United Kingdom: Data for upper secondary attainment includes completion of a sufficient volume and standard of programmes that would be classified individually as completion of intermediate upper secondary programmes (18% of the adults are under this group).

Countries are ranked in descending order of the unemployment rate of adults with below upper secondary education.

Source: OECD. Table A5.4a. See Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

Source: OECD. Table A5.4a.

See Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink  <http://dx.doi.org/10.1787/888933283600> (Education at a Glance 2015, Chart A5.1)

Tertiary education (based on the new data collected with ISCED 2011 classification)

ISCED 2011 is implemented for the first time in Education at a Glance 2015. The new data show large differences in international mobility, field of study, and subsequent earnings between individuals enrolled in short tertiary cycle, bachelor's, master's and doctoral programmes. There is a large differentiation even between tertiary education levels.

Tertiary systems have expanded at different rates across EU21 countries during the past few decades, and there are large differences in the levels of tertiary education most people have attained.

The proportion of people with at least a bachelor's degree is at least 20 percentage points higher among 25-34 year-olds than among 55-64 year-olds in Finland, Ireland, Poland and Slovenia, while in Germany, the proportions of the two age groups are about the same (Table A1.3a).

In addition, there are large differences in the levels of tertiary education most people have attained across OECD countries. For instance, in Austria and Canada, about half of all tertiary-educated adults have a qualification from a short-cycle tertiary programme, while less than 1% of tertiary-educated adults in the Czech Republic and Poland hold such a qualification. Across EU21 countries, 26% of 25-64 year-olds have at least a bachelor's degree or equivalent. In Belgium and Luxembourg, over 35% of adults hold this degree, but in Austria, Chile, France, Italy, Mexico and Turkey, less than 20% of adults do. On average across EU21 countries, 12% of 25-64 year-olds have earned a bachelor's degree or equivalent (16% on

average across the OECD countries), 13% have earned a master's degree (11% on average across the OECD countries), and about 1% has earned a doctoral degree or equivalent (as on average across the OECD countries) (Table A1.1a).

For the youngest generations, the entry rate into bachelor's degree programmes is much higher than the entry rate into master's programmes. Half of the new entrants into bachelor's programmes pursue studies in education, humanities or social sciences.

First-time entry rates into more advanced tertiary programmes, such as master's and doctoral programmes, tend to be lower than first-time entry rates into bachelor's programmes. About 56% of young adults across EU21 countries (the OECD average is 57%) are expected to enter a bachelor's degree or equivalent programme over their lifetime (Table C3.1). By contrast, 26% of young adults across EU21 countries (the OECD average is 22%) are expected to enter a master's level programme.

Across EU21 countries, half (53%) of those who enter a bachelor's programme choose to study education, humanities or social sciences (the OECD average is 54%) while 27% pursue an engineering or science programme (the OECD average is also 27%). (Table C3.3).

Across EU21 countries, 18 % of first-time graduates were awarded a master's degree as part of a long first-degree programme, but a vast majority (70%) will be awarded a bachelor's degree.

An estimated 45% of young people across EU21 countries (the OECD average is 50%) are expected to graduate from tertiary education at least once during their lifetime (Table A3.1). Among these first-time graduates across EU21 countries, 70% will be awarded a bachelor's degree; 18% a master's degree as part of a long first-degree programme, and 13% will graduate from short-cycle tertiary programmes (Table A3.2).

Across OECD and EU21 countries, despite narrowing or closing gender gaps in educational attainment, women are still under-represented in the science, technology, engineering, and mathematics fields (STEM).

In all countries and economies that distributed the PISA parent questionnaire, parents were more likely to expect their sons, rather than their daughters, to work in a STEM field. In Germany, 39% of 15-year-old boys' parents expected that they would work in STEM occupations; only 14% of girls' parents reported so. The gender gap in the percentage of 15-year-old boys and girls whose parents expected them to work in STEM occupations is larger than 30 percentage points in Hungary and Portugal as well as in Chile for non EU21 countries (Box A10.1).

Differences in the percentages of 16-65 year-old men and women who reported that they had studied engineering, manufacturing and construction are larger than 19 percentage points in all countries and economies examined. Among EU21 countries, these differences are particularly wide in Austria (45%), the Czech Republic (45%), Finland (44%), Germany (44%) and the Slovak Republic (43%), where men are over 40 percentage points more likely than women to have studied these subjects, according to their reports. Differences are smallest in Estonia, Italy and the United Kingdom (Table A10.3).

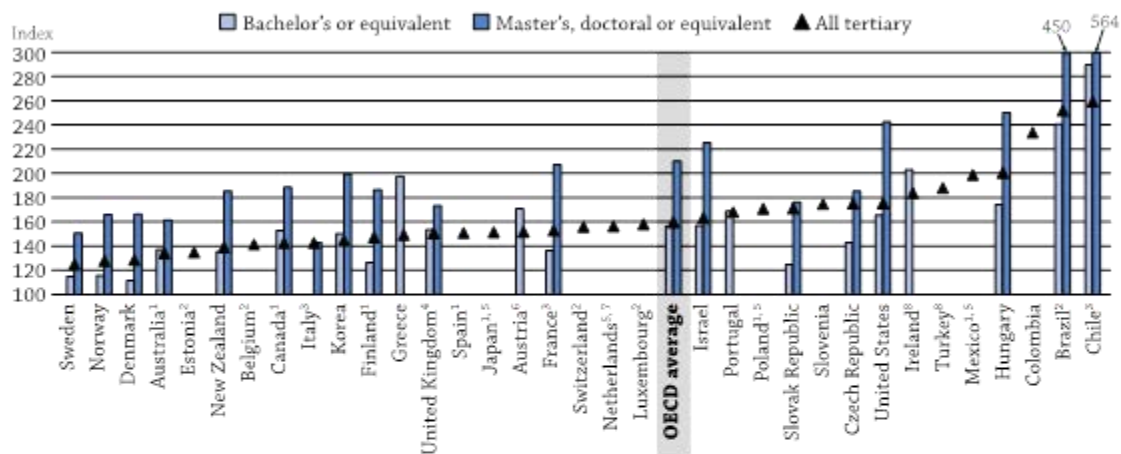
Adults with master's degrees and doctorates are rewarded with considerably higher earnings than those with bachelor's degrees; and tuition fees, in public institutions, for the two higher levels of education are not much higher than those charged for bachelor's degree programmes.

Compared with adults with upper secondary education with income from employment, those with a bachelor's or equivalent degree earn, on average across OECD countries, about 60% more (those with a short-cycle tertiary degree earn only about 30% more). Adults with a master's or doctoral or equivalent

degree earn more than twice as much as those with upper secondary education as their highest level of attainment (Table A6.1a). Among EU21 countries, in the Czech Republic, Hungary, Ireland, Poland, the Slovak Republic and Slovenia, relative earnings of 25-64 year-olds are more than 70 percentage points higher among individuals with tertiary education than among those with upper secondary education (Figure 5).

In all OECD countries, people with a master's or doctoral or equivalent degree have better labour market opportunities compared to those with only a bachelor's degree. However, in one-third of OECD countries, tuition fees charged by public institutions for master's and doctoral or equivalent programmes are not much higher than those charged for bachelor's degree programmes. The difference in tuition fees between bachelor's and master's degree programmes is more than EUR 1 100 only in non-EU21 countries (Australia, Colombia, Korea and the United States).

Figure 5: Relative earnings of tertiary-educated workers, by level of tertiary education (2013)
25-64 year-olds with income from employment; upper secondary education = 100



Note: Tertiary education includes short cycle tertiary, bachelor's, master's, doctoral or equivalent degrees.

1. Australia, Canada, Finland, Japan, Mexico, Poland, Spain: Year of reference 2012.

2. Belgium, Brazil, Estonia, Luxembourg, Switzerland: Index 100 refers to the combined ISCED levels 3 and 4 of the educational attainment levels in the ISCED 2011 classification.

3. Chile, France, Italy: Year of reference 2011.

4. The United Kingdom: Data for upper secondary attainment includes completion of a sufficient volume and standard of programmes that would be classified individually as completion of intermediate upper secondary programmes (18% of the adults are under this group).

5. Japan, Mexico, the Netherlands, Poland: Index 100 refers to the combined ISCED levels 3 and 4 of the educational attainment levels in the ISCED-97 classification.

6. Austria: Master's, doctoral or equivalent are included in bachelor's or equivalent.


7. The Netherlands: Year of reference 2010.

8. Ireland, Turkey: Earnings net of income tax.

Countries are ranked in ascending order of the relative earnings of 25-64 year-olds with tertiary education.

Source: OECD. Table A6.1a.

See Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink  <http://dx.doi.org/10.1787/888933283686> (Education at a Glance 2015, Chart A6.1)

Some 2.7% of today's young adults in EU21 countries are expected to enter advanced research programmes during their lifetime, significantly above the OECD average of 2.4%.

Doctoral-level research plays a crucial role in driving innovation and economic growth, and contributes significantly to the national and international knowledge base. Many OECD countries invest heavily to provide doctoral-level education. Table C3.1a shows that 7 out of the top 10 countries in the percentage of students who will pursue doctoral studies are members of the European Union. In Germany and Switzerland, one in 20 students is expected to enter an advanced research programme, while in Austria and the United Kingdom, one in 25 students is expected to enter such a programme.

More than 66% of new students in advanced research programmes in EU21 countries entered before the age of 30 (the OECD average is 61%), and there are significant differences among countries in students' age at entry into these programmes. In Belgium, the Czech Republic, the Netherlands and Poland, more than 75% of students are younger than 30 when they enter this level of education, while in Iceland, Israel, Korea, Mexico and Portugal, less than 40% of students are younger than 30 when they enter doctoral studies (Table C3.4).

Several countries are developing doctoral programmes or changing their funding policy to attract the best students from around the world to ensure a leading role in research and innovation.

Among EU21 countries, nine out of ten new entrants into doctoral programmes in Luxembourg, 40% or more in the Netherlands, Sweden and the United Kingdom, around 33% in Austria and Denmark, and about 25% in the Czech Republic, Finland, Germany and Portugal are international students (Table C3.4).

The doctoral level of education has close to gender parity across EU21 countries. Some 56% of new entrants into short-cycle tertiary programmes (ISCED 5), 57% of new entrants into master's or equivalent programmes (ISCED 7), and 49% of new entrants into doctoral or equivalent programmes (ISCED 8) are women (Table C3.4).

Most doctoral students across EU21 countries graduate from sciences and engineering programmes. Among all doctoral graduates, 30% graduate from "science" programmes and 21% graduate from "engineering, manufacturing and construction" programmes (Table A3.5).

Some 71% of international students enrolled in EU21 countries come from another EU21 country, as a result of EU mobility programmes.

"ET2020: At least 20% of tertiary education graduates and 6% of 18-34 year-olds with an initial vocational qualification should have spent some time studying or training abroad"

The European Union's COMETT programme, designed to stimulate contact and exchanges between universities and industry, was begun in July 1987. This programme was rapidly followed by the ERASMUS programme, which promotes inter-university contacts and co-operation, as well as substantial student mobility (as did the 1989 "Youth for Europe" programme, the EU's first youth exchange support scheme).

Within the OECD area, EU21 countries host the largest proportion (35%) of international students. Some 71% of international students enrolled in EU21 countries come from another EU21 country, also as a result of the EU mobility programmes. In 2013, 530 000 citizens from EU21 countries were enrolled abroad. Luxembourg has the largest proportion of citizens studying abroad (68%), followed by the Slovak Republic (14%) and Ireland (8%). By contrast, Poland (1.2%), Spain (1.5%) and the United Kingdom (1.5%) reported the smallest proportions of citizens studying abroad (Table C4.5).

Financing of education (from primary to tertiary)

Spending per student increases with the level of education and education is mostly funded from public sources.

On average in 2012, EU21 countries spent USD 10 361 (about EUR 8 000) per student from primary through tertiary education (the OECD average is USD 10 220), with large variations between levels of education. Educational institutions in OECD countries spent an average of 1.2 times more per secondary student and 1.8 times more per tertiary student than per primary student. Across OECD countries, education is mostly publicly funded, but tertiary institutions obtain the largest proportion of funds – 30% – from private sources (only 22% for EU21 countries).

EU21 countries with large enrolments in dual-system apprenticeship programmes tend to spend more per upper secondary student than other countries.

Countries with large enrolments in dual-system apprenticeship programmes at the upper secondary level (e.g. Austria, Finland, Germany, Luxembourg and the Netherlands) tend to have higher expenditure per student in vocational programmes than in general programmes. For example, in Germany, the average expenditure per year per student in a general programmes is USD 10 433, whereas it is USD 13 073 per student enrolled in a vocational programme. However, it is to underline that a considerable part of the financing of vocational programmes in Germany comes from the private sector.

The share of private expenditure on tertiary institutions increased in EU21 countries from 15% in 2000 to 22% in 2012.

High private returns to tertiary education suggest that a greater contribution to the costs of education by individuals and other private entities may be justified, as long as there are ways to ensure that funding is available to students regardless of their economic backgrounds.

The balance between public and private financing of education is an important policy issue in many countries, especially at the tertiary level of education. In 2012, even if the share of private expenditure had increased across EU21 countries, it was far below the 30% observed across OECD countries (Table B3.1). However, there are large differences across EU 21 countries. For example, the proportion of expenditure on tertiary institutions covered by individuals and other private sources ranges from less than 6% in Austria, Finland and Luxembourg, to around 29% in the Netherlands and more than 40% in Hungary, Portugal and the United Kingdom (Table B3.1).

On average across the 20 OECD countries for which trend data are available for all reference years, the share of public funding for tertiary institutions decreased by more than four percentage points between 2000 and 2012, from 68.8% in 2000 to 64.9% in 2005, and continued to decrease slightly over the following years to 64.5% in 2012. The decrease in this share is particularly large in some, mostly European, countries where there had been large increases in private funding, from tuition fees and/or as enterprises participated more actively, largely through grants to tertiary institutions.

At the tertiary level of education, expenditure on R&D and ancillary services represents 37% of all expenditure per student by tertiary institutions, on average.

On average across EU21 but also OECD countries, expenditure on R&D and ancillary services at the tertiary level represents 37% of all expenditure per student by tertiary institutions. In 10 of the 23 OECD countries for which data on R&D and ancillary services are available separately from total expenditure – Australia, Estonia, Germany, Israel, Italy, Norway, Portugal, the Slovak Republic, Sweden and Switzerland – expenditure on R&D and ancillary services represents at least 40% of total tertiary expenditure per student by educational institutions. This can translate into significant amounts: in Australia, Germany, Norway, Sweden and Switzerland, expenditure for R&D and ancillary services amounts to more than USD 6 000 per student (Table B1.2).

GDP rose, in real terms, in most countries between 2010 and 2012, and public expenditure on educational institutions fell in more than one out of three OECD countries as a result of fiscal-consolidation policies.

In 2012, 4.9% of GDP was devoted to expenditure on educational institutions (from primary to tertiary education), on average across EU21 countries with available data (the OECD average is 5.2%); in Finland, Portugal and the United Kingdom, more than 5.8% of GDP was devoted to education. At the other end of

the spectrum, Hungary, Luxembourg and the Slovak Republic spent less than 4% of their GDP on education (Table B2.2).

During 2010-12, the crisis had a stronger impact on public expenditure on education. While GDP decreased between 2008 and 2010 in two-thirds of the countries with available data, it stayed constant or increased between 2010 and 2012 in all countries except five. The GDP decreased in Greece (by 15%), Italy (by 2%), Portugal (by 5%), Slovenia (by 2%) and Spain (by 3%) (Table B2.4).

Public expenditure on educational institutions started to fall between 2010 and 2012 – later than decreases in GDP, as a result of the necessary time gap to adjust public budgets. Over the whole period 2010-2012, public expenditure on educational institutions decreased in 11 OECD countries, and by 5% or more in Hungary, Italy, Portugal, Slovenia and Spain (Table B2.4).

The teaching profession

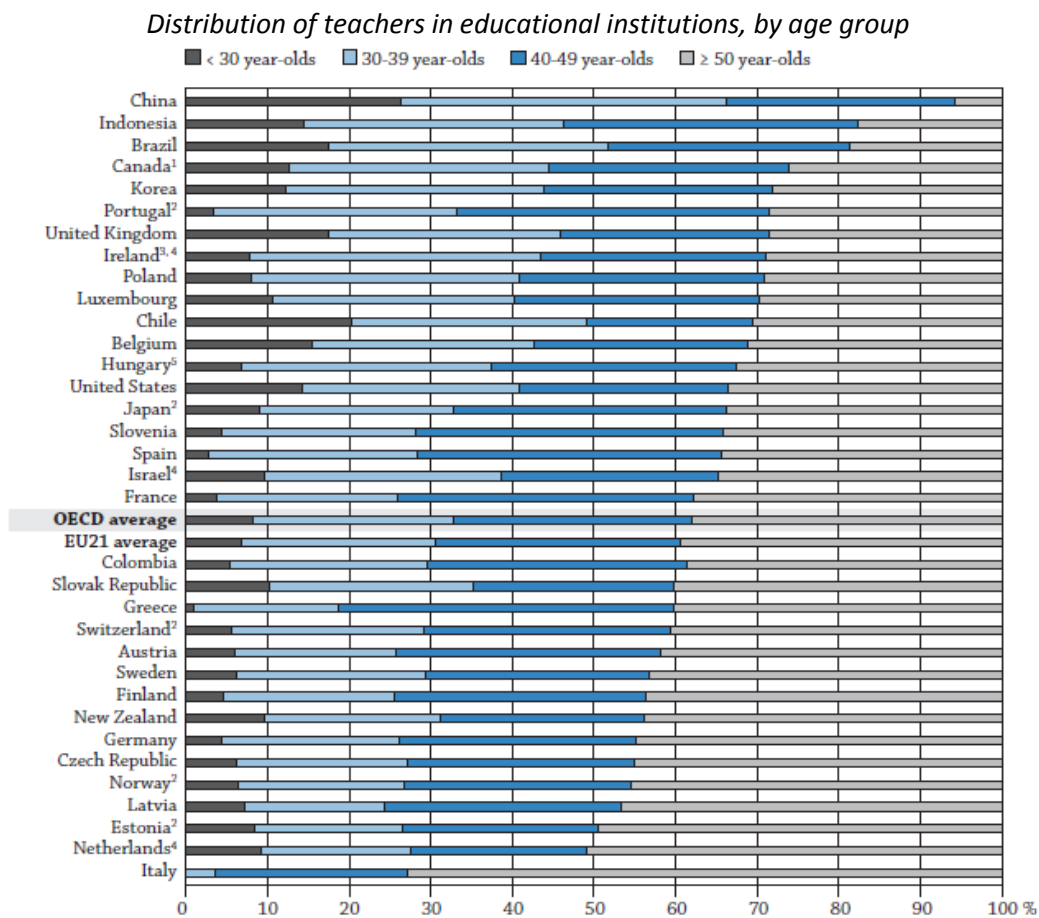
Teachers' starting salaries increase with the level of education.

On average across EU21 countries, the starting salary for a primary teacher with typical qualifications is USD 30 032; for a lower secondary teacher, it is USD 31 533; and for an upper secondary teacher it is USD 32 741 (Table D3.1a).

The proportion of secondary teachers aged 50 or older increased between 2005 and 2013 in most EU21 countries.

The proportion of older teachers increased by 10 percentage points or more in Italy and Portugal, while Austria recorded a striking 26 percentage-point increase during the period (Table D5.2).

Some 38% of secondary school teachers are at least 50 years old, on average across EU21 countries. In Austria, Estonia, Germany and the Netherlands, at least 45% of secondary teachers are 50 or older, while more than 60% of secondary teachers in Italy are. In countries that stand to lose a significant number of teachers through retirement, governments will have to make the teaching profession more attractive. Fiscal constraints – particularly those driven by pension obligations and healthcare costs for retirees – are likely to result in greater pressure on governments (Table D5.2 and Figure 6).

Figure 6: Age distribution of teachers in upper secondary education (2013)

1. Year of reference 2012.

2. Upper secondary includes programmes from post-secondary non-tertiary.

3. Upper secondary includes lower secondary.


4. Public institutions only.

5. Includes data on management personnel.

Countries are ranked in ascending order of the percentage of teachers aged 50 years or older at the secondary level.

Source: OECD, Table D5.1.

See Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

StatLink  <http://dx.doi.org/10.1787/888933284546> (Education at a Glance 2015, Chart D5.2)

References

OECD (2015), *Education at a Glance 2015: OECD Indicators*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/eag-2015-en>.

Note regarding data from Israel

The statistical data for Israel are supplied by and are under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

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For more information on Education at a Glance 2015 and to access the full set of Indicators, visit www.oecd.org/education/education-at-a-glance-19991487.htm.

Updated data can be found on line at <http://dx.doi.org/10.1787/eag-data-en> and by following the **StatLinks**  under the tables and charts in the publication.

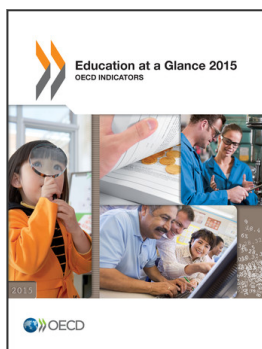
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Key Facts for EU21 average in Education at a Glance 2015

Table	Indicator	EU21 average	OECD average
Educational Access and Output			
	Enrolment rates	2013	2013
C2.1	3-year-olds (in early childhood education)	80%	74%
	Highest educational attainment level of 25-64 year-olds	2014	2014
A1.4a	Below upper secondary	22%	24%
	Upper secondary or post-secondary non-tertiary	47%	43%
	Tertiary	32%	34%
	Highest educational attainment level of 25-64 year-olds (disaggregation at tertiary level)	2014	2014
A1.1a	Short cycle tertiary	6%	8%
	Bachelor's or equivalent	12%	16%
	Master's or equivalent	13%	11%
	Doctoral or equivalent	1%	1%
	Entry and graduation rates	2013	2013
C3.1	Percentage of today's young people expected to enter tertiary education at least once during their lifetime	63%	67%
A3.1	Percentage of today's young people expected to graduate with a bachelor's or equivalent degree in their lifetime	34%	36%
Economic and Labour Market Outcomes			
	Unemployment rate of 25-64 year-olds	2014	2014
A5.4a	Below upper secondary	16.2%	12.8%
	Upper secondary and post-secondary non-tertiary	9.1%	7.7%
	Tertiary	5.7%	5.1%
	Average earnings premium for tertiary-educated 25-64 year-olds (upper secondary = 100)	2013	2013
A6.1a	Short cycle tertiary	128	125
	Bachelor's or equivalent	152	157
	Master's, Doctoral or equivalent	187	214
	All tertiary	157	160
	Percentage of people not in employment, education or training (NEET) for 15-29 year-olds	2014	2014
C5.2b	Men	14.2%	13.2%
	Women	17.1%	17.9%
Financial Investment in Education			
	Annual expenditure per student (in equivalent USD, using PPPs)	2012	2012
B1.1a	Primary education	8372 USD	8247 USD
	Secondary education	9931 USD	9518 USD
	Tertiary (including R&D activities)	14955 USD	15028 USD
	Total expenditure on primary to tertiary educational institutions	2012	2012
B2.2	As a percentage of GDP	4.9%	5.2%
	Total public expenditure on primary to tertiary education	2012	2012
B4.2	As a percentage of total public expenditure	10%	11.6%
Schools and Teachers			
	Ratio of students to teaching staff	2013	2013
D2.2	Primary education	14 students per teacher	15 students per teacher
	Secondary education	12 students per teacher	13 students per teacher

The reference year is the year cited or the latest year for which data are available.

** Please refer to the source table for details on this data.



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