





# Education at a Glance 2013

OECD INDICATORS

This work is published on the responsibility of the Secretary-General of the OECD. The opinions expressed and arguments employed herein do not necessarily reflect the official views of the Organisation or of the governments of its member countries.

This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

**Please cite this publication as:**

OECD (2013), *Education at a Glance 2013: OECD Indicators*, OECD Publishing.  
<http://dx.doi.org/10.1787/eag-2013-en>

ISBN 978-92-64-20104-0 (print)  
ISBN 978-92-64-20105-7 (PDF)

The statistical data for Israel are supplied by and 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.

**Photo credits:**

Stocklib Image Bank © Cathy Yeulet  
Fotolia.com © Feng Yu  
Getty Images © blue jean images

© OECD 2013

---

You can copy, download or print OECD content for your own use, and you can include excerpts from OECD publications, databases and multimedia products in your own documents, presentations, blogs, websites and teaching materials, provided that suitable acknowledgement of OECD as source and copyright owner is given. All requests for public or commercial use and translation rights should be submitted to [rights@oecd.org](mailto:rights@oecd.org). Requests for permission to photocopy portions of this material for public or commercial use shall be addressed directly to the Copyright Clearance Center (CCC) at [info@copyright.com](mailto:info@copyright.com) or the Centre français d'exploitation du droit de copie (CFC) at [contact@cfcopies.com](mailto:contact@cfcopies.com).

---

# FOREWORD

Governments are paying increasing attention to international comparisons as they search for effective policies that enhance individuals' social and economic prospects, provide incentives for greater efficiency in schooling, and help to mobilise resources to meet rising demands. As part of its response, the OECD Directorate for Education and Skills devotes a major effort to the development and analysis of the quantitative, internationally comparable indicators that it publishes annually in *Education at a Glance*. These indicators enable educational policy makers and practitioners alike to see their education systems in light of other countries' performance and, together with the OECD country policy reviews, are designed to support and review the efforts that governments are making towards policy reform.

*Education at a Glance* addresses the needs of a range of users, from governments seeking to learn policy lessons to academics requiring data for further analysis to the general public wanting to monitor how its country's schools are progressing in producing world-class students. The publication examines the quality of learning outcomes, the policy levers and contextual factors that shape these outcomes, and the broader private and social returns that accrue to investments in education.

*Education at a Glance* is the product of a long-standing, collaborative effort between OECD governments, the experts and institutions working within the framework of the OECD Indicators of Education Systems (INES) programme and the OECD Secretariat. The publication was prepared by the staff of the Innovation and Measuring Progress Division of the OECD Directorate for Education and Skills, under the responsibility of Dirk Van Damme and Corinne Heckmann and in co-operation with Etienne Albiser, Simone Bloem, Rodrigo Castaneda-Valle, Eric Charbonnier, Estelle Herbaut, Karinne Logez, Koji Miyamoto, Joris Ranchin, Cuauhtemoc Rebolledo-Gomez, Gara Rojas González, David Valenciano, and Jean Yip. Administrative support was provided by Rhodia Diallo, editing of the report was undertaken by Marilyn Achiron, and additional advice as well as analytical and editorial support were provided by Gwenaëlle Barach, Marika Boiron, Célia Braga-Schich, Elizabeth Del Bourgo, Caroline Israël, Diane Lalancette and Ignacio Marin. The authoring team benefited from the analytical review of Sam Abrams, Francesco Avvisati, Tracey Burns, Sonia Guerriero, Hiroko Ikesako, David Istance, Marco Kools, Katarzyna Kubacka, Pauline Musset, Anna Pons, Miho Taguma, Willam Thorn, Juliana Zapata and Pablo Zoido. Production of the report was co-ordinated by Elisabeth Villoutreix. The development of the publication was steered by member countries through the INES Working Party and facilitated by the INES Networks. The members of the various bodies as well as the individual experts who have contributed to this publication and to OECD INES more generally are listed at the end of the book.

While much progress has been accomplished in recent years, member countries and the OECD continue to strive to strengthen the link between policy needs and the best available internationally comparable data. This presents various challenges and trade-offs. First, the indicators need to respond to educational issues that are high on national policy agendas, and where the international comparative perspective can offer important added value to what can be accomplished through national analysis and evaluation. Second, while the indicators should be as comparable as possible, they also need to be as country-specific as is necessary to allow for historical, systemic and cultural differences between countries. Third, the indicators need to be presented in as straightforward a manner as possible, while remaining sufficiently complex to reflect multi-faceted educational realities. Fourth, there is a general desire to keep the indicator set as small as possible, but it needs to be large enough to be useful to policy makers across countries that face different educational challenges.

The OECD will continue to address these challenges vigorously and to pursue not just the development of indicators in areas where it is feasible and promising to develop data, but also to advance in areas where a considerable investment still needs to be made in conceptual work. The further development of the OECD Programme for International Student Assessment (PISA) and its extension through the OECD Survey of Adult Skills, a product of the Programme for the International Assessment of Adult Competencies (PIAAC), as well as the OECD Teaching and Learning International Survey (TALIS), are major efforts to this end.

# TABLE OF CONTENTS

		Number of the indicator in the 2012 edition
<b>Editorial</b> .....		<b>13</b>
<b>Introduction</b> .....		<b>17</b>
<b>Reader's Guide</b> .....		<b>21</b>
<b>CHAPTER A THE OUTPUT OF EDUCATIONAL INSTITUTIONS AND THE IMPACT OF LEARNING</b> .....		<b>25</b>
<b>Indicator A1 To what level have adults studied?</b> .....		<b>26</b> <b>A1</b>
Table A1.1a Educational attainment of 25-64 year-olds (2011).....		35
Table A1.2a Percentage of the population that has attained at least upper secondary education, by age group (2011).....		36
Table A1.3a Percentage of the population that has attained tertiary education, by type of programme and age group (2011).....		37
Table A1.4a Trends in educational attainment, by age group, and average annual growth rate (2000-11).....		38
Table A1.5a Educational attainment of 25-64 year-olds, by programme orientation and gender (2011).....		40
<b>Indicator A2 How many students are expected to complete upper secondary education?</b> .....		<b>42</b> <b>A2</b>
Table A2.1a Upper secondary graduation rates and average ages (2011).....		50
Table A2.1b Upper secondary graduation rates for students under 25 (2011).....		51
Table A2.2a Trends in first-time graduation rates at upper secondary level (1995-2011).....		52
Table A2.3a Distribution of upper secondary vocational graduates, by field of education and gender (2011).....		53
<b>Indicator A3 How many students are expected to complete tertiary education?</b> .....		<b>54</b> <b>A3</b>
Table A3.1a Tertiary graduation rates and average ages (2011).....		61
Table A3.1b Tertiary graduation rates among students under the typical age at graduation (2011).....		62
Table A3.2a Trends in tertiary graduation rates (1995-2011).....		63
<b>Indicator A4 How many students complete tertiary education?</b> .....		<b>64</b>
Table A4.1 Completion rates in tertiary education (2011).....		71
Table A4.2 Completion rates in tertiary-type A education, by status of enrolment (2011).....		72
<b>Indicator A5 How does educational attainment affect participation in the labour market?</b> .....		<b>74</b> <b>A7</b>
Table A5.1a Employment rates among 25-64 year-olds, by educational attainment (2011).....		86

Table A5.1b	Employment rates among 25-64 year-olds, by educational attainment and gender (2011).....	87	
Table A5.2a	Unemployment rates among 25-64 year olds, by educational attainment (2011).....	89	
Table A5.2b	Unemployment rates among 25-64 year-olds, by educational attainment and gender (2011).....	90	
Table A5.3a	Employment rates, by educational attainment and age group (2000, 2005, 2008 and 2011).....	92	
Table A5.4a	Unemployment rates, by educational attainment and age group (2000, 2005, 2008 and 2011).....	94	
Table A5.5a	Labour market status among 25-64 year-olds, by educational attainment and programme orientation (2011).....	96	
Table A5.6	Proportion of full-time, full-year earners among all earners, by educational attainment and age group (2011).....	97	
<b>Indicator A6</b>	<b>What are the earnings premiums from education?.....</b>	<b>100</b>	<b>A8</b>
Table A6.1	Relative earnings of adults with income from employment, by educational attainment, gender and age group (2011).....	111	
Table A6.2a	Trends in relative earnings of 25-64 year-olds with income from employment, by educational attainment (2000-11).....	113	
Table A6.2b	Trends in relative earnings of 25-64 year-old men with income from employment, by educational attainment (2000-11).....	115	
Table A6.2c	Trends in relative earnings of 25-64 year-old women with income from employment, by educational attainment (2000-11).....	117	
Table A6.3a	Differences in earnings between women and men, by educational attainment and age group (2011).....	119	
Table A6.3b	Trends in the differences in earnings between 25-64 year-old women and men, by educational attainment (2000-11).....	120	
Table A6.5a	Relative earnings of 15-24 year-old students, by educational attainment and gender (2011).....	122	
Table A6.5b	Share of young adults with income from employment among all young adults, by gender, age group and student status (2011).....	124	
<b>Indicator A7</b>	<b>What are the incentives to invest in education?.....</b>	<b>126</b>	<b>A9</b>
Table A7.1a	Private costs and benefits for a man attaining upper secondary or post-secondary non-tertiary education (2009).....	140	
Table A7.1b	Private costs and benefits for a woman attaining upper secondary or post-secondary non-tertiary education (2009).....	141	
Table A7.2a	Public costs and benefits for a man attaining upper secondary or post-secondary non-tertiary education (2009).....	142	
Table A7.2b	Public costs and benefits for a woman attaining upper secondary or post-secondary non-tertiary education (2009).....	143	
Table A7.3a	Private costs and benefits for a man attaining tertiary education (2009).....	144	

		Number of the indicator in the 2012 edition
Table A7.3b	Private costs and benefits for a woman attaining tertiary education (2009).....	145
Table A7.4a	Public costs and benefits for a man attaining tertiary education (2009).....	146
Table A7.4b	Public costs and benefits for a woman attaining tertiary education (2009).....	147
<b>Indicator A8</b>	<b>What are the social outcomes of education?</b> .....	<b>148</b>
Table A8.1	Proportion of obese adults, by level of educational attainment and gender (2011).....	154
Table A8.2	Proportion of adults who smoke, by level of educational attainment and gender (2011).....	155
Table A8.3	Percentage-point differences in the “likelihood of being obese” associated with an increase in the level of educational attainment (2011).....	156
Table A8.4	Percentage-point differences in the “likelihood of smoking” associated with an increase in the level of educational attainment (2011).....	157
<b>CHAPTER B</b>	<b>FINANCIAL AND HUMAN RESOURCES INVESTED IN EDUCATION</b> .....	<b>159</b>
<b>Indicator B1</b>	<b>How much is spent per student?</b> .....	<b>162</b>
Table B1.1a	Annual expenditure per student by educational institutions for all services (2010).....	174
Table B1.2	Annual expenditure per student by educational institutions for core services, ancillary services and R&D (2010).....	175
Table B1.3a	Cumulative expenditure per student by educational institutions for all services over the average duration of tertiary studies (2010).....	176
Table B1.4	Annual expenditure per student by educational institutions for all services, relative to GDP per capita (2010).....	177
Table B1.5a	Change in expenditure per student by educational institutions for all services, relative to different factors, at the primary, secondary and post-secondary non-tertiary levels of education (1995, 2000, 2005, 2010).....	178
Table B1.5b	Change in expenditure per student by educational institutions for all services, relative to different factors, at the tertiary level of education (1995, 2000, 2005, 2010).....	179
Table B1.6	Annual expenditure per student by educational institutions for all services, by type of programme, at the secondary level (2010).....	180
<b>Indicator B2</b>	<b>What proportion of national wealth is spent on education?</b> .....	<b>182</b>
Table B2.1	Expenditure on educational institutions as a percentage of GDP, by level of education (1995, 2000, 2005, 2010).....	191
Table B2.2	Expenditure on educational institutions as a percentage of GDP, by level of education (2010).....	192
Table B2.3	Expenditure on educational institutions as a percentage of GDP, by source of fund and level of education (2010).....	193
Table B2.4	Expenditure on educational institutions, by service category, as a percentage of GDP (2010).....	194
Table B2.5	Change in public expenditure on educational institutions as a percentage of GDP (2008, 2009, 2010).....	195

<b>Indicator B3</b>	<b>How much public and private investment in education is there?</b>	<b>196</b>	<b>B3</b>
Table B3.1	Relative proportions of public and private expenditure on educational institutions for all levels of education (2000, 2010)	205	
Table B3.2a	Relative proportions of public and private expenditure on educational institutions, by level of education (2000, 2010)	206	
Table B3.2b	Relative proportions of public and private expenditure on educational institutions, for tertiary education (2000, 2010)	207	
Table B3.3	Trends in relative proportions of public expenditure on educational institutions and index of change between 1995 and 2010, for tertiary education	208	
Table B3.4	Annual public expenditure on educational institutions per student, by type of institution (2010)	209	
<b>Indicator B4</b>	<b>What is the total public spending on education?</b>	<b>210</b>	<b>B4</b>
Table B4.1	Total public expenditure on education (2010)	218	
Table B4.2	Total public expenditure on education (1995, 2000, 2005 and 2010)	219	
Table B4.3	Sources of public educational funds, for primary, secondary and post-secondary non-tertiary education, by level of government (2010)	220	
<b>Indicator B5</b>	<b>How much do tertiary students pay and what public support do they receive?</b>	<b>222</b>	<b>B5</b>
Table B5.1	Estimated annual average tuition fees charged by tertiary-type A educational institution for national students (2011)	232	
Table B5.2	Distribution of financial aid to students compared to amount of tuition fees charged in tertiary-type A education, national students and first degree programmes (2011)	234	
Table B5.3	Average tuition fees charged by institutions, by field of education (2011)	235	
Table B5.4	Public support for households and other private entities as a percentage of total public expenditure on education and GDP, for tertiary education (2010)	236	
<b>WEB Indicator B6</b>	<b>On what resources and services is education funding spent?</b>	<b>238</b>	<b>B6</b>
<b>Indicator B7</b>	<b>Which factors influence the level of expenditure on education?</b>	<b>240</b>	<b>B7</b>
Table B7.1	Salary cost of teachers per student, by level of education (2011)	250	
Table B7.2a	Factors used to compute the salary cost of teachers per student, in primary education (2000, 2005 and 2011)	251	
Table B7.2b	Factors used to compute the salary cost of teachers per student, in lower secondary education (2000, 2005, 2011)	253	
Table B7.3	Contribution of various factors to salary cost of teachers per student, in primary education (2000, 2005 and 2011)	255	
Table B7.4a	Contribution of various factors to salary cost of teachers per student, in lower secondary education (2000, 2005 and 2011)	256	
Table B7.5a	Contribution of various factors to salary cost of teachers per student, in upper secondary education (2011)	257	

		Number of the indicator in the 2012 edition
<b>CHAPTER C</b>	<b>ACCESS TO EDUCATION, PARTICIPATION AND PROGRESSION</b>	<b>259</b>
<b>Indicator C1</b>	<b>Who participates in education?</b>	<b>260</b>
Table C1.1a	Enrolment rates, by age (2011)	269
Table C1.2	Trends in enrolment rates (1995-2011)	270
Table C1.3	Upper secondary and post-secondary non-tertiary enrolment patterns (2011)	271
Table C1.4	Students in primary and secondary education, by percent share in type of institution or mode of enrolment (2010)	272
Table C1.5	Students in tertiary education, by percent share in type of institution or mode of enrolment (2011)	273
Table C1.6a	Expected years in education from age 5 through age 39 (2011)	274
<b>Indicator C2</b>	<b>How do early childhood education systems differ around the world?</b>	<b>276</b>
Table C2.1	Enrolment rates in early childhood and primary education, by age (2005, 2011)	286
Table C2.2	Characteristics of early childhood education programmes (2010, 2011)	287
Table C2.3	Characteristics of education-only and integrated early childhood education programmes (2011)	288
<b>Indicator C3</b>	<b>How many students are expected to enter tertiary education?</b>	<b>290</b>
Table C3.1a	Entry rates into tertiary education and average age of new entrants (2011)	299
Table C3.1b	Entry rates into tertiary education of students under the typical age of entry (2011)	300
Table C3.2a	Trends in entry rates at the tertiary level (1995-2011)	301
Table C3.3a	Distribution of tertiary new entrants, by field of education (2011)	302
<b>Indicator C4</b>	<b>Who studies abroad and where?</b>	<b>304</b>
Table C4.1	International student mobility and foreign students in tertiary education (2005, 2011)	317
Table C4.2	Distribution of international and foreign students enrolled in tertiary programmes, by field of education (2011)	318
Table C4.3	Distribution of international and foreign students in tertiary education, by country of origin (2011)	319
Table C4.4	Citizens studying abroad in tertiary education, by country of destination (2011)	321
Table C4.5	Mobility patterns of foreign and international students (2011)	323
Table C4.6	Trends in the number of foreign students enrolled in tertiary education, by region of destination and origin (2000 to 2011)	324
<b>Indicator C5</b>	<b>Transition from school to work: Where are the 15-29 year-olds?</b>	<b>326</b>
Table C5.1a	Expected years in education and not in education for 15-29 year-olds, by work status (2011)	337
Table C5.2a	Percentage of 15-29 year-olds in education and not in education, by work status, including duration of unemployment (2011)	338
Table C5.3a	Percentage of 15-29 year-olds in education and not in education, by work status, including part-time workers (2011)	339

Table C5.4a	Trends in the percentage of young people in education and not in education, employed or not, by 5-year age group (1997-2011).....	340	
Table C5.5a	Percentage of 15-29 year-olds in education and not in education, by educational attainment and work status, including duration of unemployment (2011).....	343	
Table C5.6	Percentage of 15-29 year-olds in education and not in education, by educational attainment and work status, including part-time (PT) workers (2011).....	346	
Table C5.7	Trends in the percentage of 15-29 year-old part-time (PT) and full-time (FT) workers in education and not in education (2006-11).....	349	

## **CHAPTER D THE LEARNING ENVIRONMENT AND ORGANISATION OF SCHOOLS 351**

<b>Indicator D1</b>	<b>How much time do students spend in the classroom?.....</b>	<b>352</b>	<b>D1</b>
Table D1.1	Compulsory and intended instruction time in public institutions (2011).....	360	
Table D1.2a	Instruction time per subject in primary education (2011).....	361	
Table D1.2b	Instruction time per subject in lower secondary education (2011).....	362	
<b>Indicator D2</b>	<b>What is the student-teacher ratio and how big are classes?.....</b>	<b>364</b>	<b>D2</b>
Table D2.1	Average class size, by type of institution and level of education (2011).....	374	
Table D2.2	Ratio of students to teaching staff in educational institutions (2011).....	375	
Table D2.3	Ratio of students to teaching staff by type of institution (2011).....	376	
<b>Indicator D3</b>	<b>How much are teachers paid?.....</b>	<b>378</b>	<b>D3</b>
Table D3.1	Teachers' statutory salaries at different points in their careers (2011).....	388	
Table D3.2	Comparison of teachers' salaries (2011).....	390	
Table D3.3	Average actual teachers' salaries (2011).....	391	
Table D3.4	Trends in teachers' salaries between 2000 and 2011.....	392	
<b>Indicator D4</b>	<b>How much time do teachers spend teaching?.....</b>	<b>394</b>	<b>D4</b>
Table D4.1	Organisation of teachers' working time (2011).....	401	
Table D4.2	Number of teaching hours per year (2000 and 2005-11).....	402	
<b>WEB Indicator D5</b>	<b>Who are the teachers?.....</b>	<b>404</b>	<b>D5</b>

## **ANNEX 1 CHARACTERISTICS OF EDUCATION SYSTEMS 407**

Table X1.1a	Upper secondary graduation rate: Typical graduation ages and method used to calculate graduation rates (2011).....	408
Table X1.1b	Post-secondary non-tertiary graduation rates: Typical graduation ages and method used to calculate graduation rates (2011).....	410
Table X1.1c	Tertiary graduation rate: Typical graduation ages and method used to calculate graduation rates (2011).....	411
Table X1.1d	Tertiary entry rate: Typical age of entry and method used to calculate entry rates (2011).....	413
Table X1.2a	School year and financial year used for the calculation of indicators, OECD countries.....	414
Table X1.2b	School year and financial year used for the calculation of indicators, other G20 countries.....	415

	Number of the indicator in the 2012 edition
<b>ANNEX 2 REFERENCE STATISTICS</b> .....	<b>417</b>
Table X2.1 Overview of the economic context using basic variables (reference period: calendar year 2010, 2010 current prices).....	418
Table X2.2a Basic reference statistics (reference period: calendar year 2010, 2010 current prices).....	419
Table X2.2b Basic reference statistics (reference period: calendar year 1995, 2000, 2005, 2010).....	420
Table X2.3a Teachers' statutory salaries at different points in their careers (2011).....	421
Table X2.3b Trends in teachers' salaries, between 2000 and 2011.....	423
Table X2.3c Reference statistics used in calculating teachers' salaries (2000, 2005-11).....	425
<b>ANNEX 3 SOURCES, METHODS AND TECHNICAL NOTES</b> .....	<b>427</b>
<b>Contributors to this publication</b> .....	<b>429</b>
<b>Related OECD publications</b> .....	<b>435</b>

**This book has...**



Look for the *StatLinks* at the bottom left-hand corner of the tables or graphs in this book. To download the matching Excel® spreadsheet, just type the link into your Internet browser, starting with the <http://dx.doi.org> prefix. If you're reading the PDF e-book edition, and your PC is connected to the Internet, simply click on the link. You'll find *StatLinks* appearing in more OECD books.



# EDITORIAL

## Learning their way out: Youth, education and skills in the midst of the crisis

This edition of *Education at a Glance* comes at a time when youth unemployment keeps policy makers awake at night. Between 2008 and 2011 – the years to which most data in this volume refer – unemployment rates climbed steeply in most countries and have remained high ever since. Young people have been particularly hard-hit by un- and underemployment as a result of the global recession. In 2011, the average proportion of 15-29 year-olds neither in employment nor in education or training (NEET) across OECD countries was 16%; among 25-29 year-olds, 20% were NEET. (Among this latter group, 40% were unemployed, more than half of them for more than six months; the rest did not participate in the labour market at all.) In some countries the figures are much higher, with more than one in three people between the ages of 25 and 29 neither in education nor in work. These young people are forced to pay a very high price for a crisis that was not of their making, with long-lasting consequences for their skills, work morale and social integration. The demoralising short-term effects for individuals, families and communities demand urgent policy responses, while the longer-term ramifications, in terms of skills loss, scarring effects and de-motivation, are real and affect countries' potential for sustainable recovery.

The distribution of unemployment within the younger generation sheds light on some of the factors that may increase the risk of joblessness, which, in turn, offers insights for policy responses. Most notably, educational attainment has a huge impact on employability, and the crisis has strengthened this impact even further. On average across OECD countries, 4.8% of individuals with a tertiary degree were unemployed in 2011, while 12.6% of those lacking a secondary education were. Between 2008 and 2011 the unemployment gap between those with low levels of education and those with high levels of education widened: across all age groups, the unemployment rate for low-educated individuals increased by almost 3.8 percentage points, while it increased by only 1.5 percentage points for highly educated individuals. Without the foundation skills provided by a minimum level of education, people find themselves particularly vulnerable in an insecure labour market.

The crisis has also produced ample evidence that a good education provides valuable insurance against a lack of work experience: the impact of educational attainment on unemployment is much greater for younger people than it is for older adults. Across OECD countries, an average of 18.1% of 25-34 year-olds without secondary education were unemployed in 2011, compared with 8.8% of 55-64 year-olds. Among 25-34 year-olds with a tertiary qualification, an average of 6.8% were unemployed, compared with 4.0% of 55-64 year-olds with a similar level of education.

Nevertheless, that fact that these troubling trends are far from universal indicates that they are not inevitable. There are large differences between countries in the way the recession has shaped the social reality for young people. The steep increases in youth unemployment between 2008 and 2011, especially among low-educated young people, in countries such as Estonia (a 17.6 percentage-point increase in unemployment among 25-34 year-olds without a secondary education), Greece (15.0 percentage-point increase), Ireland (21.5 percentage-point increase) and Spain (16.0 percentage-point increase) are well-known. Less known is that, during the same period, some countries saw drops in unemployment among low-skilled youth, including Austria (-3.3 percentage points), Chile (-3.6 percentage points), Germany (-2.1 percentage points), Israel (-0.9 percentage point), Korea (-1.6 percentage points), Luxembourg (-1.0 percentage point) and Turkey (-1.7 percentage points). Several other countries were able to contain the increases within more or less tolerable levels.

Though many factors play a role in a country's capacity to contain the rise in youth unemployment in times of crisis, the way institutional arrangements between education and work facilitate transitions into employment is perhaps one of the most important. This year's *Education at a Glance* provides more detailed data on programme orientation (general versus vocational) in secondary and tertiary education. Countries with relatively high numbers of 25-34 year-old graduates from vocationally oriented programmes succeeded in reducing the risk of unemployment among young people with upper secondary education as their highest level of attainment. Countries that have a higher-than-average (32%) proportion of graduates from vocational programmes, such as Austria, the Czech Republic, Germany and Luxembourg, were all able to keep the increases in unemployment rates among this age group to below 8 percentage points. Conversely, countries such as Greece, Ireland and Spain, where less than 25% of young adults graduate from vocational upper secondary education, saw increases in unemployment rates of 12 percentage points or more among 25-34 year-olds with only secondary education. For young people who do not continue into tertiary education, vocational education clearly offers better prospects for their employability than general, more academically oriented upper secondary education.

Vocational education and training (VET) systems thus play a critical role in strengthening countries' capacity to deal with rapidly changing labour-market conditions. Several OECD countries have developed policies to improve and expand VET programmes at the upper secondary and post-secondary non-tertiary levels in order to equip young people with the skills the labour market demands. These programmes often include intensive workplace training and are based on extensive partnerships between schools and enterprises. Between 2005 and 2011, the number of students graduating from upper secondary vocational programmes increased by an average of 4.3 percentage points across OECD countries. In several countries, notably Austria, Belgium, Finland, Ireland, Portugal and Spain, this increase exceeded 10 percentage points.

We can further improve our understanding of how qualifications are related to labour-market outcomes by delving into the actual content of qualifications, rather than simply classifying them by level. This year's edition explores some data on graduates' field of study. While data from only a limited number of countries are examined, these data show a wide variation in unemployment rates among tertiary graduates in different fields of study. Interestingly, this variation does not fully reflect the segmentation in labour demand and wages found more broadly in the economy and in the labour market. For example, in the United States, the unemployment rate for graduates from the high-paying field of computer and information systems (5.3%) was higher than the unemployment rate for graduates of relatively low-paying secondary teaching programmes (2.4%), which had one of the lowest unemployment figures of any programme. The relationship between students' career choices, skill development in a particular field of study, and actual employability is more complex than often assumed.

Educational attainment not only affects employability, as *Education at a Glance* shows, but also has an impact on income from employment. On average, the relative earnings of tertiary-educated adults is over 1.5 times that of adults with upper secondary education, while individuals without an upper secondary education earn 25% less, on average, than their peers who have attained that level of education. The crisis has widened this wage gap: the average difference between earnings from employment between low-educated and highly educated individuals was 75 percentage points across OECD countries in 2008, increasing to 90 percentage points in 2011.

Individuals lacking the foundation skills provided by a complete secondary education cannot expect their incomes to rise substantially as they grow older. Indeed, the wage gap between those with low and high levels of education tends to increase with age. Without a secondary education, 25-34 year-olds earn 80% of what their colleagues with a secondary education earn, on average, but 55-64 year-olds earn only 72% of what their more-educated peers earn. The wage premium for higher education increases with age. A 25-34 year-old with a tertiary education earns 40% more, on average, than an adult of the same age who has only a secondary education, while a 55-64 year-old earns 73% more. Educational attainment – besides a successful start in employment – thus has long-lasting and mutually reinforcing effects over a lifetime. A higher education degree clearly pays off in the long run.

Given the close relationship between education, employment and earnings, young people develop strategies to improve their life chances by investing in education. In recent years, they literally learned their way out of the crisis. When opportunity costs declined and it seemed better to postpone entry into an insecure labour market, many young adults opted to equip themselves with more competitive skills before trying to enter the world of work. In most countries, increased demand for post-compulsory education more than compensated for the demographic decline in these age groups. In 2011, the OECD average for 15-19 year-olds enrolled in education was 85%; and the proportion of 20-29 year-olds in education climbed from 22% in 2000 to 29% in 2011. As a consequence, the proportion of adults with tertiary-level qualifications rose by more than 10 percentage points between 2000 and 2011, while the share of adults without a secondary education qualification dropped by the same rate. Across OECD countries, 39% of 25-34 year-olds had a tertiary qualification in 2011.

The changes in enrolment rates, employment rates and investment in education observed in the first years of the recession indicate how education and skills determine the way individuals, families and societies as a whole fared during the most challenging economic and social crisis in recent history. Highly educated young people from fields of study in high demand found a job easily, ending up in a “high skills – high wage” equilibrium, and could envisage a prosperous life ahead of them. For others, a tertiary qualification did not bring the expected rewards, either because the labour market was contracting too much – often protecting older generations at the expense of the youngest generation of workers – or because their chosen field of study was already saturated or not aligned with the needs of the labour market. Over-schooling and under-employment then resulted in frustration. Young adults with an upper secondary qualification were able to survive the jobs crisis if they were the beneficiaries of programmes that prepared them well for work. Those who hadn’t attained a complete secondary education, and so lacked the foundation skills needed to survive in a complex economy, often found themselves at the wrong end of the skills-based polarisation, stuck in a “low skills – low wage” equilibrium or in long-term unemployment with very little prospects for improvement.

High youth unemployment is not inevitable, even during an economic crisis; it is the product of the interaction between the economic context and particular policies. And, as the data collected during the early years of this crisis show, the amount of public spending on education has little to do with a country’s success or failure in containing youth unemployment: nearly all governments maintained more or less their level of investment in education throughout the crisis. What matters more are the choices countries make in how to allocate that spending and the policies they design to improve the efficiency and relevance of the education they provide. Data and policy experiences in countries show which kinds of policies are effective in boosting young people’s employability: ensuring that all young people achieve both a good level of foundation skills and “soft” skills, such as teamwork, communication and negotiation, that will give them the resilience they need to succeed in an ever-changing labour market; reducing school dropout rates and making sure that as many young people as possible complete at least an upper secondary education (if necessary, through second-chance education opportunities); making secondary education relevant to the skill needs of the labour market; developing vocational education and training, and bridging education to the world of work by including work-based learning; securing flexible pathways into tertiary education; and providing good study and career guidance services so that young people can make sound, informed career decisions. These are exactly the policies that the OECD Youth Action Plan, adopted at the OECD Ministerial Meeting in May 2013, is advocating to improve the prospects for young people and for societies as a whole.



**Angel Gurría**  
OECD Secretary-General



# INTRODUCTION: THE INDICATORS AND THEIR FRAMEWORK

## ■ The organising framework

*Education at a Glance 2013: OECD Indicators* offers a rich, comparable and up-to-date array of indicators that reflects a consensus among professionals on how to measure the current state of education internationally. The indicators provide information on the human and financial resources invested in education, how education and learning systems operate and evolve, and the returns to educational investments. The indicators are organised thematically, and each is accompanied by information on the policy context and the interpretation of the data. The education indicators are presented within an organising framework that:

- distinguishes between the actors in education systems: individual learners and teachers, instructional settings and learning environments, educational service providers, and the education system as a whole;
- groups the indicators according to whether they address learning outcomes for individuals or countries, policy levers or circumstances that shape these outcomes, or to antecedents or constraints that set policy choices into context; and
- identifies the policy issues to which the indicators relate, with three major categories distinguishing between the quality of educational outcomes and educational provision, issues of equity in educational outcomes and educational opportunities, and the adequacy and effectiveness of resource management.

The following matrix describes the first two dimensions:

	1. Education and learning outputs and outcomes	2. Policy levers and contexts shaping educational outcomes	3. Antecedents or constraints that contextualise policy
I. Individual participants in education and learning	1.I. The quality and distribution of individual educational outcomes	2.I. Individual attitudes, engagement, and behaviour to teaching and learning	3.I. Background characteristics of the individual learners and teachers
II. Instructional settings	1.II. The quality of instructional delivery	2.II. Pedagogy, learning practices and classroom climate	3.II. Student learning conditions and teacher working conditions
III. Providers of educational services	1.III. The output of educational institutions and institutional performance	2.III. School environment and organisation	3.III. Characteristics of the service providers and their communities
IV. The education system as a whole	1.IV. The overall performance of the education system	2.IV. System-wide institutional settings, resource allocations, and policies	3.IV. The national educational, social, economic, and demographic contexts

The following sections discuss the matrix dimensions in more detail:

### ■ **Actors in education systems**

The OECD Indicators of Education Systems (INES) programme seeks to gauge the performance of national education systems as a whole, rather than to compare individual institutional or other sub-national entities. However, there is increasing recognition that many important features of the development, functioning and impact of education systems can only be assessed through an understanding of learning outcomes and their relationships to inputs and processes at the level of individuals and institutions. To account for this, the indicator framework distinguishes between a macro level, two meso-levels and a micro-level of education systems. These relate to:

- the education system as a whole;
- the educational institutions and providers of educational services;
- the instructional setting and the learning environment within the institutions; and
- the individual participants in education and learning.

To some extent, these levels correspond to the entities from which data are being collected, but their importance mainly centres on the fact that many features of the education system play out quite differently at different levels of the system, which needs to be taken into account when interpreting the indicators. For example, at the level of students within a classroom, the relationship between student achievement and class size may be negative, if students in small classes benefit from improved contact with teachers. At the class or school level, however, students are often intentionally grouped such that weaker or disadvantaged students are placed in smaller classes so that they receive more individual attention. At the school level, therefore, the observed relationship between class size and student achievement is often positive (suggesting that students in larger classes perform better than students in smaller classes). At higher aggregated levels of education systems, the relationship between student achievement and class size is further confounded, e.g. by the socio-economic intake of schools or by factors relating to the learning culture in different countries. Therefore, past analyses that have relied on macro-level data alone have sometimes led to misleading conclusions.

### ■ **Outcomes, policy levers and antecedents**

The second dimension in the organising framework further groups the indicators at each of the above levels:

- indicators on observed outputs of education systems, as well as indicators related to the impact of knowledge and skills for individuals, societies and economies, are grouped under the sub-heading *output and outcomes of education and learning*;
- the sub-heading *policy levers and contexts* groups activities seeking information on the policy levers or circumstances which shape the outputs and outcomes at each level; and
- these policy levers and contexts typically have *antecedents* – factors that define or constrain policy. These are represented by the sub-heading *antecedents and constraints*. It should be noted that the antecedents or constraints are usually specific for a given level of the education system and that antecedents at a lower level of the system may well be policy levers at a higher level. For teachers and students in a school, for example, teacher qualifications are a given constraint while, at the level of the education system, professional development of teachers is a key policy lever.

### ■ **Policy issues**

Each of the resulting cells in the framework can then be used to address a variety of issues from different policy perspectives. For the purpose of this framework, policy perspectives are grouped into three classes that constitute the third dimension in the organising framework for INES:

- quality of educational outcomes and educational provision;
- equality of educational outcomes and equity in educational opportunities; and
- adequacy, effectiveness and efficiency of resource management.