Education at a Glance 2022

OECD Indicators

Foreword

Governments are increasingly looking to international comparisons of education opportunities and outcomes as they develop policies to enhance individuals' social and economic prospects, provide incentives for greater efficiency in schooling, and help to mobilise resources to meet rising demands. The OECD Directorate for Education and Skills contributes to these efforts by developing and analysing the quantitative, internationally comparable indicators that it publishes annually in *Education at a Glance*. Together with OECD country policy reviews, these indicators can be used to assist governments in building more effective and equitable education systems.

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 and the general public wanting to monitor how their countries' schools are progressing in producing world-class students. This 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. It was prepared within the Innovation and Measuring Progress Division of the OECD Directorate for Education and Skills under the responsibility of Tia Loukkola. The production of *Education at a Glance 2022* was managed by Marie-Hélène Doumet and Abel Schumann. It contains statistical and analytical contributions from Étienne Albiser, Heewoon Bae, Andrea Borlizzi, Antonio Carvalho, Éric Charbonnier, Minne Chu, Elisa Duarte, Bruce Golding, Yanjun Guo, Corinne Heckmann, Viktoria Kis, Simon Normandeau, Eduardo Roche, Gara Rojas González, Giovanni Maria Semeraro, Chelsea Tao, Lou Turroques, Choyi Whang and Hajar Sabrina Yassine. Administrative support was provided by Eda Cabbar and Valérie Forges, and additional advice and analytical inputs were provided by Gillian Golden and Thomas Weko. Cassandra Davis and Sophie Limoges provided valuable support in the editorial and production process. 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 the INES programme more generally are listed at the end of this publication.

While much progress has been made 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 education issues that are high on national policy agendas, and where the international comparative perspective can offer 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 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 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 challenges in education.

The OECD will continue not only to address these challenges and develop indicators in areas where it is feasible and promising to develop data, but also to advance in areas where considerable investment is still needed in conceptual work. 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.

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Editorial

In the past two decades, the share of young adults with advanced qualifications has risen sharply across OECD countries: 48% of 24-34 year-olds had a tertiary degree in 2021, compared to just 27% in 2000. This is due to the growing need for advanced skills in labour markets and has profound implications for our societies and the future of education.

The COVID-19 pandemic demonstrated that educational attainment is one of the best protections against economic risks: during the peak of the pandemic, unemployment increased much more for those with below upper secondary attainment than for those with tertiary attainment. A similar pattern was observed in the aftermath of the 2008 financial crisis.

Better-educated adults may also find it easier to adopt new technologies that improve their quality of life. For example, 71% of 55-74 year-olds with tertiary attainment used online or video calls during the pandemic, allowing them to stay in touch with family and friends and avoid social isolation. In contrast, only 34% of similarly aged adults with below upper secondary attainment reported making online or video calls.

This year's edition of *Education at a Glance* focuses on this changing environment for tertiary education.

Adapting tertiary education to meet the needs of all students

The rising number of tertiary students is leading to growing diversity in their socio-economic and educational backgrounds. To meet their needs, tertiary education needs to become more diverse too. Models of tertiary education that worked when only a small share of each cohort entered university – often those from privileged backgrounds – will no longer be adequate when more than half of young adults are obtaining tertiary degrees.

Tertiary education systems must be prepared for students looking for new skills at various stages of their careers. For example, micro-credentials offer a promising approach to give students greater ownership over what they learn, how they learn, where they learn and when in their life learning works best for them. As labour-markets change, these and similar approaches will be important to prevent young graduates from struggling to find good jobs even as employers cannot find people with the skills they need.

Further, not all students are best served by a tertiary degree. The general increase in tertiary attainment may have led employers to expect a tertiary degree as the new normal, pushing students who would benefit more from vocational education and training (VET) into academic tertiary education instead. To avoid this, vocational upper secondary programmes that can compete with tertiary education in terms of quality and labour-market outcomes are important, but they remain rare. Making VET a first choice rather than a last resort for students requires new links between upper secondary VET and professional tertiary education to give VET graduates the opportunity to obtain additional qualifications at a later stage.

Maintaining the momentum on digitalisation

The pandemic demonstrated the value of digital tools for tertiary education institutions. Innovative models of remote teaching and learning were developed that allowed students to continue learning even during the peaks of the pandemic.

To facilitate the use of these tools, around half of OECD countries reformed their regulatory or institutional frameworks during the pandemic. Most OECD countries also found resources to purchase digital tools for in-classroom and remote learning and to train teachers in their use. These pandemic-related measures implemented by many countries were a big step in the right direction, but they do not go far enough.

To fully benefit from digitalisation, we must strengthen the innovation culture in education. This requires the right institutional and regulatory frameworks, in particular those governing digital education. It requires public procurement in the education

sector to become more responsive to digital opportunities and create stronger incentives for private sector innovation. It also requires teachers to acquire the skills needed not only to use digital tools in the classroom, but also to enhance their own professional development.

Providing data for innovative education policies

The policy issues described above provide several avenues for the development of OECD education statistics. Currently, robust cross-country data on non-standard modes of education such as micro-credentials are scarce, even though these programmes will become increasingly important in the future. Likewise, little data exists about the quality of tertiary programmes and their relevance to the labour market, despite this being essential information for policy makers. Statistics on the use of digital solutions are also needed to ensure education systems respond to current and future labour-market needs. Capturing these dimensions will require looking beyond existing data sources. For example, measuring the impact of lifelong learning and workplace training will require the use of data from employers and from education technology companies.

The OECD will continue working with its members and partners to provide the data policy makers need to evaluate learning recovery policies, build on the digital initiatives and innovations adopted during the pandemic, and develop the education systems that can power better jobs and better lives into the future.

Mathias Cormann

Secretary-General, OECD

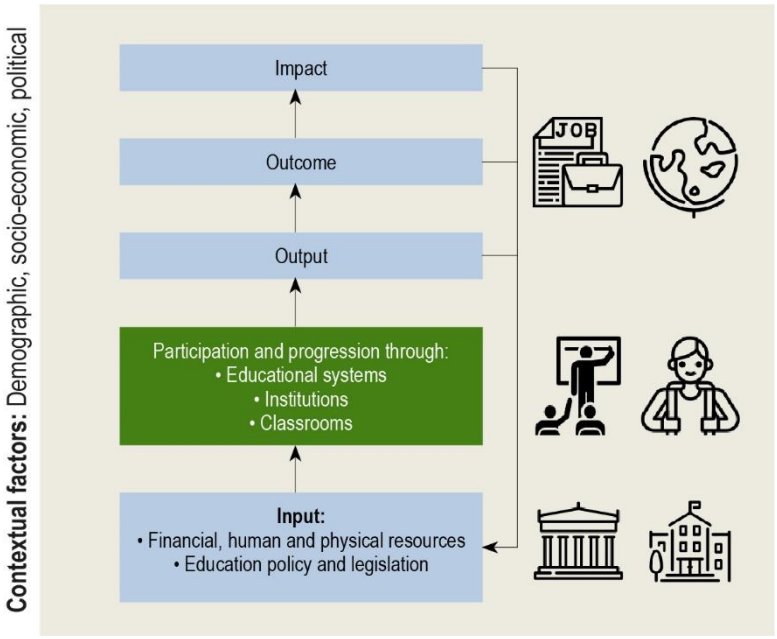
Reader's guide

The organising framework

Education at a Glance 2022: OECD Indicators offers a rich, comparable and up-to-date array of indicators that reflect 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 investments in education. They are organised thematically, each accompanied by information on the policy context and interpretation of the data.

The indicators are organised within a framework that distinguishes between the actors in education systems, groups them according to the types of issues they address and examines contextual factors that influence policy (Figure A). In addition to these dimensions, the time perspective makes it possible to visualise dynamic aspects of the development of education systems.

Figure A. Organising framework of indicators in *Education at a Glance*



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 subnational 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 first dimension of the organising framework distinguishes the three levels of actors in education systems:

- Education systems as a whole.
- Providers of educational services (institutions, schools), as well as the instructional setting within those institutions (classrooms, teachers).
- Individual participants in education and learning, the students. These can be either children or young adults undergoing initial schooling and training, or adults pursuing lifelong learning programmes.

Indicator groups

The second dimension of the organising framework further groups the indicators into three categories:

- *Indicators on the output, outcomes and impact of education systems:* Output indicators analyse the characteristics of those exiting the system, such as their educational attainment. Outcome indicators examine the direct effects of the output of education systems, such as the employment and earning benefits of pursuing higher education. Impact indicators analyse the long-term indirect effects of the outcomes, such as the knowledge and skills acquired, contributions to economic growth and societal well-being, and social cohesion and equity.
- *Indicators on the participation and progression within education entities:* These indicators assess the likelihood of students accessing, enrolling in and completing different levels of education, as well as the various pathways followed between types of programmes and across education levels.
- *Indicators on the input into education systems or the learning environment:* These indicators provide information on the policy levers that shape the participation, progression, outputs and outcomes at each level. Such policy levers relate to the resources invested in education, including financial, human (such as teachers and other school staff) or physical resources (such as buildings and infrastructure). They also relate to policy choices regarding the instructional setting of classrooms, pedagogical content and delivery of the curriculum. Finally, they analyse the organisation of schools and education systems, including governance, autonomy and specific policies to regulate the participation of students in certain programmes.

Contextual factors that influence policy

Policy levers typically have antecedents: external factors that define or constrain policy but are not directly connected to the policy topic at hand. Demographic, socio-economic and political factors are all important national characteristics to take into account when interpreting indicators. The characteristics of the students themselves, such as their gender, age, socio-economic status or cultural background, are also important contextual factors that influence the outcomes of education policy.

The structure of chapters and indicators in *Education at a Glance*

The indicators published in *Education at a Glance 2022* have been developed within this framework. The chapters are structured through the lens of the education system as a whole, although the indicators themselves are disaggregated and analysed across different levels of education and education settings, and may therefore cover more than one element of the framework.

Chapter A, *The output of educational institutions and the impact of learning*, contains indicators on the output, outcomes and impact of education in the form of the overall attainment of the population, as well as the learning, economic and social outcomes (Figure A). Through this analysis, the indicators in this chapter provide context, for example, to shape policies on lifelong learning. They also provide insights into the policy levers needed to address areas where outcomes and impact may not be aligned with national strategic objectives.

Chapter B, *Access to education, participation and progression*, considers the full education system from early childhood to tertiary education and provides indicators on the enrolment, progression and completion of students at each level and programme (Figure A). These indicators can be considered a mixture of output and outcome, to the extent that the output of each education level serves as input to the next and that progression is the result of policies and practices at classroom, institution and system levels. But they can also provide context to identify areas where policy intervention is necessary to address issues of inequity, for example, or to encourage international mobility.

Chapters C and D relate to the inputs into educational systems (Figure A):

- **Chapter C**, *Financial resources invested in education*, provides indicators on expenditure in education and educational institutions, how that expenditure is shared between public and private sources, the tuition fees charged by institutions, and the financial mechanisms to support students. These indicators are mainly policy levers, but they also help to explain specific learning outcomes. For example, expenditure on educational institutions per student is a key policy measure that most directly affects individual learners, but it also acts as a constraint on the learning environment in schools and learning conditions in the classroom.
- **Chapter D**, *Teachers, the learning environment and organisation of schools*, provides indicators on instruction time, teachers' and school heads' working time, and teachers' and school heads' salaries. These indicators not only represent policy levers that can be manipulated, but also provide contexts for the quality of instruction and for the outcomes of individual learners. This chapter also presents data on the profile of teachers.

In addition to the regular indicators and core statistics published, *Education at a Glance* also contains analytical work in textboxes. This work usually provides research elements that contribute to the understanding of the indicator, or additional analysis of a smaller number of countries that complement the findings presented.

Sustainable Development Goal 4

In September 2015, world leaders gathered to set ambitious goals for the future of the global community. Goal 4 of the Sustainable Development Goals (SDGs) seeks to ensure "inclusive and equitable quality education and promote lifelong learning opportunities for all". Each target of the SDG 4 framework has at least one global indicator and a number of related thematic indicators designed to complement the analysis and the measurement of the target.

The United Nations Educational, Scientific and Cultural Organization (UNESCO) oversees the education SDG agenda in the context of the United Nations-led SDG framework. As the custodian agency for most of the SDG 4 indicators, the UNESCO Institute of Statistics (UIS) is co-ordinating global efforts to develop the indicator framework to monitor progress towards SDG 4 targets. In addition to collecting data, the UIS works with partners to develop new indicators, statistical approaches and monitoring tools to better assess progress across the education-related SDG targets.

In this context, the OECD's education programmes have a key role to play in the achievement of – and measuring progress towards – SDG 4 and its targets. There is a high level of complementarity between the SDG 4 agenda and the OECD's education policy tools, instruments, evidence and dialogue platforms. The OECD is working with the UIS, the SDG 4 Steering Committee and the technical working groups that have been put in place to help build a comprehensive data system for global reporting, agree on the data sources and formulae used for reporting on the SDG 4 global indicators, and on selected thematic indicators for OECD and partner countries.

Tertiary education in *Education at a Glance 2022*

As the selected theme for this year's publication, tertiary education is at the forefront of *Education at a Glance 2022*. Tertiary education has seen unprecedented growth in the past decades and obtaining a tertiary degree is still the most promising pathway to a good job. Although tertiary education differs more widely across countries than primary and secondary education, there is increasing policy interest in providing comparative analysis of the progression of students, the outcomes of graduates and the resources invested. Therefore, a large number of indicators in this year's edition analyse students' participation and progress through tertiary education, as well as the economic, labour-market and social outcomes of tertiary-educated adults. The analysis also includes indicators on the resources invested in tertiary education, both financial and human, as well as a new indicator on teaching staff at tertiary level.

Table A summarises the indicators and chapters that contribute to the analysis of tertiary education in this year's *Education at a Glance*.

Table A. Indicators relating to tertiary education in *Education at a Glance 2022*

Chapter	Indicator number	Indicator
Chapter A: The output of educational institutions and the impact of learning	A1	To what level have adults studied?
	A3	How does educational attainment affect participation in the labour market?
	A4	What are the earnings advantages from education?
	A6	How are social outcomes related to education?
	A7	To what extent do adults participate equally in education and learning?
Chapter B: Access to education, participation and progression	B1	Who participates in education?
	B4	Who is expected to enter tertiary education?
	B5	How many students complete tertiary education?
	B6	What is the profile of internationally mobile students?
Chapter C: Financial resources invested in education	C1	How much is spent per student on educational institutions?
	C2	What proportion of national wealth is spent on educational institutions?
	C3	How much public and private investment in educational institutions is there?
	C4	What is the total public spending on education?
	C5	How much do tertiary students pay and what public support do they receive?
	C6	On what resources and services is education funding spent?
Chapter D: Teachers, the learning environment and the organisation of schools	D6	What are the pathways to becoming a teacher and a school head?
	D7	How extensive are professional development activities for teachers and school heads?

The second year of the COVID-19 pandemic

As of mid-2022, the impact of the global COVID-19 pandemic has receded and health-related restrictions to education provision have been eased or lifted entirely in many OECD countries. However, the school year 2021/22 (or 2021) – the period covered by most of the data in *Education at a Glance 2022* – was still heavily affected by the pandemic. A dedicated chapter documents the effects of the pandemic in its second year. It provides information on its immediate impact, for example due to school closures and teacher absences. Moreover, the chapter also takes a step back to describe how countries have assessed the impact of the pandemic and to document the remedial measures they have implemented to lessen its impact. Finally, it looks at innovative policies, such as in the field of digitalisation, that were implemented during the pandemic and will be maintained afterwards.

Statistical coverage

Although a lack of data still limits the scope of the indicators in many countries, the coverage extends, in principle, to the entire national education system (within the national territory), regardless of who owns or sponsors the institutions concerned and regardless of how education is delivered. With one exception (described below), all types of students and all age groups are included: children (including students with special needs), adults, nationals, foreigners and students in distance learning, in special education programmes or in education programmes organised by ministries other than the ministry of education, provided that the main aim of the programme is to broaden or deepen an individual's knowledge. Vocational and technical training in the workplace is not included in the basic education expenditure and enrolment data, with the exception of combined school- and work-based programmes that are explicitly deemed to be part of the education system.

Educational activities classified as "adult" or "non-regular" are covered, provided that the activities involve the same or similar content as "regular" education studies, or that the programmes of which they are a part lead to qualifications similar to those awarded in regular education programmes. Courses for adults that are primarily for general interest, personal enrichment, leisure or recreation are excluded.

More information on the coverage of the indicators presented in *Education at a Glance* can be found in the *OECD Handbook for Internationally Comparable Statistics on Education 2018* (OECD, 2018[1]).

Comparability over time

The indicators in *Education at a Glance* are the result of a continuous process of methodological improvement aimed at improving the robustness and international comparability of the indicators. As a result, when analysing indicators over time, it is strongly advised to do so within the most recent edition only, rather than comparing data across different editions. All comparisons over time presented in this report and on the *Education at a Glance Database* (http://stats.oecd.org) are based on annual revisions of historical data and the methodological improvements which have been implemented in this edition.

Country coverage

This publication features data on education from all OECD countries and Brazil, a partner country that participates in the INES programme, as well as other G20 and OECD accession countries that are not INES members (Argentina, the People's Republic of China, India, Indonesia, Saudi Arabia and South Africa). Data sources for the non-INES participating countries come from the regular INES data collections or from other international or national sources.

In some instances, and where relevant, a country may be represented through its subnational entities or specific regions.

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.

Note on subnational regions

When interpreting the results on subnational entities, readers should take into account their population as well as their geographical size. For example, in Canada, the population of Nunavut was 39 403 in 2021 and the territory covers 1.9 million square kilometres, while the population of the province of Ontario is 14.8 million and the territory covers 909 000 square kilometres (OECD, 2021[2]). Large countries tend to be more diverse than smaller ones. Moreover, the measured subnational variation is influenced by the definition of subnational entities. The smaller the subnational entities, the larger the measured variation. For example, for a country that has defined two levels of subnational regions (e.g. states and districts), the measured subnational variation for the smaller subnational entities will be larger than for the larger subnational entities. The analyses presented in *Education at Glance* are based on large regions (OECD TL2 level), representing the first administrative tier of subnational government.

Note on terminology: "partner countries" and "other participants"

Education at a Glance reports data on non-OECD countries. In particular, data on Brazil, which is a member of the Indicators of Educational System (INES) programme, are reported throughout the publication. Data on other G20 countries are reported when available. These countries are referred to as "partner countries".

In some instances, data on some subnational entities, such as England (United Kingdom), are included in country-level data. In line with the agreed upon OECD terminology, these subnational entities are referred to as "other participants" throughout the publication. The Flemish Community of Belgium and the French Community of Belgium are abbreviated in the tables and figures as "Flemish Comm. (Belgium)" and "French Comm. (Belgium)".

Calculation of international means

The main purpose of *Education at a Glance* is to provide an authoritative compilation of key international comparisons of education statistics. While overall values are given for countries in these comparisons, readers should not assume that countries themselves are homogeneous. The country averages include significant variations among subnational jurisdictions, much as the OECD average encompasses a variety of national experiences.

For many indicators, an OECD average is presented; for some, an OECD total is shown. The OECD average is calculated as the unweighted mean of the data values of all OECD countries for which data are available or can be estimated. The

OECD average therefore refers to an average of data values at the level of the national systems and can be used to answer the question of how an indicator value for a given country compares with the value for a typical or average country. It does not take into account the absolute size of the education system in each country.

If data from subnational entities are reported for some countries in an indicator, the subnational data are included in the calculation of the OECD average. If data from only one subnational region of a country are available, the data point will be used in the calculation of the OECD average as if the subnational region represents the entire country. If data for more than one subnational region from a country are reported in an indicator, the unweighted average of all subnational regions from the country is calculated. This unweighted average is then treated as the corresponding country value for the calculation of the OECD average.

The OECD total is calculated as the weighted mean of the data values of all OECD countries for which data are available or can be estimated. It reflects the value for a given indicator when OECD countries are considered as a whole. This approach is taken for the purpose of comparing, for example, expenditure charts for individual countries with those of all of the OECD countries for which valid data are available, considered as a single entity.

For tables using trend series, the OECD average is calculated for countries providing data for all reference years used. This allows the OECD average to be compared over time with no distortion due to the exclusion of some countries in the different years.

For many indicators, an EU22 average is also presented. It is calculated as the unweighted mean of the data values of the 22 countries that are members of both the European Union and the OECD for which data are available or can be estimated. The 22 countries are Austria, Belgium, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, the Netherlands, Poland, Portugal, the Slovak Republic, Slovenia, Spain and Sweden.

The EU22 total is calculated as the weighted mean of the data values of all OECD-EU countries for which data are available or can be estimated. It reflects the value for a given indicator when the OECD-EU area is considered as a single entity.

For some indicators, a G20 average is presented. The G20 average is calculated as the unweighted mean of the data values of all G20 countries for which data are available or can be estimated (Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Korea, Mexico, the Russian Federation, Saudi Arabia, South Africa, the Republic of Türkiye, the United Kingdom and the United States; the European Union is the 20th member of the G20 but is not included in the calculation). The G20 average is not computed if data for both China and India are not available.

OECD, EU22 and G20 averages and totals can be significantly affected by missing data. In the case of some countries, data may not be available for specific indicators, or specific categories may not apply. Therefore, readers should keep in mind that the term "OECD/EU22/G20 average" refers to the OECD, EU22 or G20 countries included in the respective comparisons. OECD, EU22 and G20 averages are not calculated if more than 40% of countries have missing information or have information included in other columns. In this case, a regular average is presented, which corresponds to the arithmetic mean of the estimates included in the table or figure.

Classification of levels of education

The classification of levels of education is based on the International Standard Classification of Education (ISCED), an instrument for compiling statistics on education internationally. ISCED 2011 was formally adopted in November 2011 and is the basis of the levels presented in this publication.

Table B lists the ISCED 2011 levels used in *Education at a Glance 2022* (OECD/Eurostat/UNESCO Institute for Statistics, 2015[3]).

Table B. Education levels under the ISCED 2011 classification

Terms used in this publication	ISCED classification
Early childhood education Refers to early childhood programmes that have an intentional education component and aim to develop cognitive, physical and socio-emotional skills necessary for participation in school and society. Programmes at this level are often differentiated by age.	ISCED 0 (sub-categories: 01 for early childhood educational development and 02 for pre-primary education)
Primary education Designed to provide a sound basic education in reading, writing and mathematics and a basic understanding of some other subjects. Entry age: between 5 and 7. Typical duration: six years.	ISCED 1
Lower secondary education Completes provision of basic education, usually in a more subject-oriented way with more specialist teachers. Programmes may differ by orientation, general or vocational, though this is less common than at upper secondary level. Entry follows completion of primary education and typical duration is three years. In some countries, the end of this level marks the end of compulsory education.	ISCED 2
Upper secondary education Stronger specialisation than at lower secondary level. Programmes offered are differentiated by orientation: general or vocational. Typical duration is three years.	ISCED 3
Post-secondary non-tertiary education Serves to broaden rather than deepen the knowledge, skills and competencies gained in upper secondary level. Programmes may be designed to increase options for participants in the labour market, for further studies at tertiary level or both. Programmes at this level are usually vocationally oriented.	ISCED 4
Short-cycle tertiary education Often designed to provide participants with professional knowledge, skills and competencies. Typically, they are practically based, occupation-specific and prepare students to enter the labour market directly. They may also provide a pathway to other tertiary education programmes (ISCED levels 6 or 7). The minimum duration is two years.	ISCED 5
Bachelor's or equivalent level Designed to provide participants with intermediate academic and/or professional knowledge, skills and competencies, leading to a first degree or equivalent qualification. Typical duration: three to four years full-time study. This level is referred to as "bachelor's" in the publication.	ISCED 6
Master's or equivalent level Stronger specialisation and more complex content than bachelor's level. Designed to provide participants with advanced academic and/or professional knowledge. May have a substantial research component. Programmes of at least five years' duration preparing for a long-first degree/qualification are included at this level if they are equivalent to a master's level programme in terms of their complexity and content. This level is referred to as "master's" in the publication.	ISCED 7
Doctoral or equivalent level Designed to lead to an advanced research qualification. Programmes at this level are devoted to advanced study and original research, and exist in both academic and professional fields. This level is referred as "doctoral" in the publication.	ISCED 8

In some indicators, intermediate programmes are also used. These correspond to recognised qualifications from ISCED 2011 level programmes which are not considered as sufficient for ISCED 2011 completion and are classified at a lower ISCED 2011 level.

Fields of education and training

Within ISCED, programmes and related qualifications can be classified by field of education and training as well as by level. Following the adoption of ISCED 2011, a separate review and global consultation process took place on the ISCED fields of education. The ISCED fields were revised, and the UNESCO General Conference adopted the ISCED 2013 Fields of Education and Training classification (ISCED-F 2013) (UNESCO Institute for Statistics, 2014[4]) in November 2013 at its 37th session. The broad ISCED-F fields considered in this publication are: education; arts and humanities; social sciences, journalism and information; business, administration and law; natural sciences, mathematics and statistics; information and communication technologies; engineering, manufacturing and construction; and health and welfare. Throughout this publication, the term "field of study" is used to refer to the different fields of this classification. The term STEM (science, technology, engineering and mathematics) refers to the aggregation of the broad fields of natural sciences, mathematics and statistics; information and communication technologies; and engineering, manufacturing and construction.

Standard error (S.E.)

Some of the statistical estimates presented in this report are based on samples of adults, rather than values that could be calculated if every person in the target population in every country had answered every question. Therefore, each estimate has a degree of uncertainty associated with sampling and measurement error, which can be expressed as a standard error. The use of confidence intervals is a way to make inferences about the population means and proportions in a manner that reflects the uncertainty associated with the sample estimates. In this report, confidence intervals are stated at a 95% level. In other words, the result for the corresponding population would lie within the confidence interval in 95 out of 100 replications of the measurement on different samples drawn from the same population.

In tables showing standard errors, the column with the heading "%" indicates the average percentage, and the column with the heading "S.E." indicates the standard error. Given the survey method, there is a sampling uncertainty in the percentages (%) of twice the standard error (S.E.). For example, for the values % = 10 and S.E. = 2.6, 10% has a 95% confidence interval of approximately twice (1.96) the standard error of 2.6. Thus, the true percentage would probably (error risk of 5%) be somewhere between 5% and 15% ("confidence interval"). The confidence interval is calculated as: $\% +/-1.96 * S.E.$, i.e. for the previous example, $10\% - 1.96 * 2.6 = 5\%$ and $10\% + 1.96 * 2.6 = 15\%$.

Symbols for missing data and abbreviations

These symbols and abbreviations are used in the tables and figures:

a Data are not applicable because the category does not apply.

b There is a break in the series.

c There are too few observations to provide reliable estimates.

d Includes data from another category.

m Data are not available – either missing or the indicator could not be computed due to low respondent numbers.

q Data have been withdrawn at the request of the country concerned.

r Values are below a certain reliability threshold and should be interpreted with caution.

x Data are included in another category or column of the table (e.g. x(2) means that data are included in Column 2 of the table).

The statistical software used in the computation of indicators in this publication may result in slightly different values past the fourth significant digit after the decimal point when compared to national statistics.

Further resources

The website www.oecd.org/education/education-at-a-glance provides information on the methods used to calculate the indicators, on the interpretation of the indicators in the respective national contexts, and on the data sources involved. It also provides access to the data underlying the indicators and to a comprehensive glossary for technical terms used in this publication.

This web publication contains interactive features: Hyperlinked sections allow the reader to access data of interest quickly. The majority of charts displayed may be customised. Data series may be removed or added by clicking on them and the data point value appears when hovering over a data series with a mouse. Some charts display a "Compare" button, with additional customisation opportunities. Readers may change the display of an indicator, select countries to compare, and analyse additional data breakdowns.

All post-production changes to this publication are listed at: https://www.oecd.org/about/publishing/corrigenda.htm (corrections).

Education at a Glance uses the OECD's StatLinks service. A URL below each table and figure leads to a corresponding Excel file containing the underlying data for the indicator. These URLs are stable and will not change. In addition, readers of the *Education at a Glance* e-book will be able to click directly on these links and the workbook will open in a separate window.

The *Education at a Glance Database* on OECD.Stat (http://stats.oecd.org) provides the raw data and indicators presented in *Education at a Glance*, as well as the metadata that provide context and explanations for countries' data. The *Education at a Glance Database* allows users to break down data in more ways than is possible in this publication in order to conduct their own analyses of education systems in participating countries. It is also updated at regular intervals. The *Education at a Glance Database* can be accessed from the OECD.Stat site under the heading "Education and Training".

Layout of tables

In all tables, the numbers in parentheses at the top of the columns are used for reference. When a consecutive number does not appear, that column is available on line through the StatLlink at the bottom of the table.

Abbreviations used in this report

AES	Adult Education Survey
ECEC	Early childhood education and care
EEA	European Economic Area
ESS	European Social Survey
GDP	Gross domestic product
ICT	Information and communication technologies
ISCED	International Standard Classification of Education
LFD	Master's long-first degree
NEET	Neither employed nor in education or training
NPV	Net present value
PIAAC	Survey of Adult Skills
PISA	Programme for International Student Assessment
PPP	Purchasing power parity
R&D	Research and development
S.E.	Standard error
STEM	Science, technology, engineering and mathematics
TALIS	Teaching and Learning International Survey
UIS	UNESCO Institute of Statistics
UOE	Refers to the data collection managed by the three organisations, UNESCO, OECD, Eurostat
VET	Vocational education and training

References

OECD (2021), *OECD Regional Statistics (database)*, http://stats.oecd.org/Index.aspx?DataSetCode=REGION_DEMOGR. [2]

OECD (2018), *OECD Handbook for Internationally Comparative Education Statistics: Concepts, Standards, Definitions and Classifications*, OECD Publishing, Paris, https://doi.org/10.1787/9789264304444-en. [1]

OECD/Eurostat/UNESCO Institute for Statistics (2015), *ISCED 2011 Operational Manual: Guidelines for Classifying National Education Programmes and Related Qualifications*, OECD Publishing, Paris, https://doi.org/10.1787/9789264228368-en. [3]

UNESCO Institute for Statistics (2014), *ISCED Fields of Education and Training 2013 (ISCED-F 2013): Manual to Accompany the International Standard Classificiation of Education 2011*, UNESCO Institute for Statistics, Montreal, https://doi.org/10.15220/978-92-9189-150-4-en. [4]

Executive summary

Education at a Glance is an authoritative compendium of internationally harmonised indicators on education systems in OECD and partner countries. It covers all levels of education, with the 2022 edition focusing on tertiary education. This executive summary presents selected results from *Education at a Glance 2022* without aiming to give a comprehensive overview of its content. Readers interested in a summary of the key findings on tertiary education are referred to the accompanying *Spotlight on Tertiary Education* (OECD, 2022).

A gradual return to normality after the COVID-19 pandemic

The second half of 2021 and first half of 2022 were marked by persistent challenges due to the COVID-19 pandemic, but also by a gradual return to normality thanks to widespread vaccinations. Although a few countries still had periods of school closures, these were much more limited than during earlier stages of the pandemic. In contrast, teacher and student absences, whether due to COVID-19 infections or to quarantine periods, continued to disrupt the learning process. However, many countries struggled to monitor absences systematically and only 11 OECD countries and other participants were able to provide comparable figures on teacher absences. Of those, eight noted an increase in teacher absences in at least one educational level compared to previous years.

As the focus shifted from crisis management to recovery, evaluating the impact of the pandemic and remediating its consequences became a priority. Almost all OECD countries implemented standardised assessments to quantify learning losses at various levels of education. Most countries also provided additional support for students to alleviate the effects of the pandemic. At primary and secondary level, around 80% of countries with available data implemented such recovery programmes. At pre-primary level, these were less common, but were offered in 19 out of 28 countries with available data. Additional psychological and socio-emotional support for primary and secondary students was made available in 19 out of 29 countries.

Most children aged 3-5 are enrolled in early childhood education

High-quality early childhood education is crucial to give students from all backgrounds an equitable start to their education. Across OECD countries, 83% of children aged 3-5 are enrolled in early childhood education and another 4% are already enrolled in primary education. On average, enrolment rates of 3-5 year-olds rose by 8 percentage points between 2005 and 2020, with especially large increases in many countries with low rates in 2005. In contrast, children under 3 are often cared for at home or in programmes that are not classified as early childhood education. Only 27% of children in this age group are enrolled in early childhood education across the OECD.

Teaching requirements at primary and secondary level differ across countries

Teachers spend an important share of their working hours on tasks other than teaching, such as preparing lessons and assessing examinations. In some countries, upper secondary teachers are expected to teach for less than one-third of their total working time, whereas in other countries, they are expected to teach for almost two-thirds of their working time. Based on official regulations, teachers across the OECD have to teach on average close to 1 000 hours per year at pre-primary level, almost 800 hours at primary level and approximately 700 hours at secondary level. However, the variation in statutory teaching time across countries is large. At upper secondary level, for example, statutory teaching hours vary from 483 hours annually in Poland to 1 248 hours in Costa Rica.

Tertiary attainment has increased strongly in recent decades…

The average share of 25-34 year-olds with a tertiary qualification increased from 27% in 2000 to 48% in 2021 across OECD countries. On average, tertiary education is now the most common attainment level among 25-34 year-olds and will soon be the most common among all working-age adults across the OECD. The increase in tertiary attainment was especially strong among women. Women now make up a clear majority of young adults with a bachelor's master's or doctoral degree, at 57% of 25-34 year-olds compared to 43% for their male peers.

An important driver behind the increase in tertiary attainment are the labour-market advantages that it brings. In 2021, the average unemployment rate for individuals with tertiary attainment was 4%, whereas it was 6% for those with upper secondary attainment and 11% for those with below upper secondary attainment across OECD countries. Likewise, full-time workers with tertiary attainment earn on average approximately 50% more than workers with upper secondary attainment and nearly twice as much as workers without upper secondary attainment.

…but tertiary completion rates are low in many countries

Despite the benefits of obtaining a tertiary degree, many tertiary students do not complete their programmes of study. Only 39% of bachelor's students graduate within the expected timeframe for their programme. Three years after the expected end date of the programme, the completion rate has risen, but only to 68%. Completion rates are particularly low among men in all OECD countries. On average, men are 11 percentage points less likely to complete their tertiary programme within its theoretical duration than women.

Budgets for tertiary education have outpaced the growth in students

Spending per student is higher at tertiary level than at other levels of education in almost all OECD countries. In 2019, expenditure per student averaged USD 17 600 at the tertiary level, compared to USD 11 400 at secondary level and USD 9 900 at primary level. The gap in spending can partly be explained by higher teachers' salaries at tertiary level, but also by the research and development that takes place at this level of education.

Spending on tertiary education per student has increased despite the growth in the number of students at that level. Since 2012, the number of tertiary students has increased by 0.4% per year across the OECD, but spending on tertiary educational institutions increased by 1.6% per year in real terms over the same period. This led to an increase in average real spending per student of 1.2% annually.

COVID-19: The second year of the pandemic

In 2020, 1.5 billion students in 188 countries and economies were locked out of their schools due to the COVID-19 pandemic. Students everywhere have been faced with schools that were open one day and closed the next, causing massive disruption to their learning (OECD, 2021[1]). As vaccines became widely available over the course of 2021, the situation started to improve gradually and countries lifted many of the measures that were imposed in earlier stages of the pandemic. Nevertheless, important disruptions to the learning process continued to persist throughout the school year 2021/2022 (or 2021). The OECD – in collaboration with UNESCO, UNICEF and the World Bank – has been monitoring the situation across countries and has collected data covering the years 2020, 2021 and the first quarter of 2022.

This data collection is the fourth in a series of surveys tracking developments in the provision of education throughout the pandemic. The survey covers a range of topics from school closures and remote learning to gradual returns to in-class instruction and contingency strategies and from the organisation of learning and the working conditions of teachers to issues of governance and finance. This fourth wave of data collection is also forward looking, analysing countries' learning recovery policies, as well as digitalisation measures to build on the initiatives and innovations adopted during the pandemic.

This section of *Education at a Glance* presents the main findings from this data collection, providing a snapshot of the current situation in OECD countries and insights into the evolution of national responses to the COVID-19 crisis. In countries with federal systems, such as Canada and the United States, many decisions on how to manage the pandemic were not made at the national level but at more local levels of government. Some of these decisions are not captured by the data collection and are therefore not reflected in this section. More details on this can be found on line (OECD COVID-19 database).

School closures and the return to in-class learning

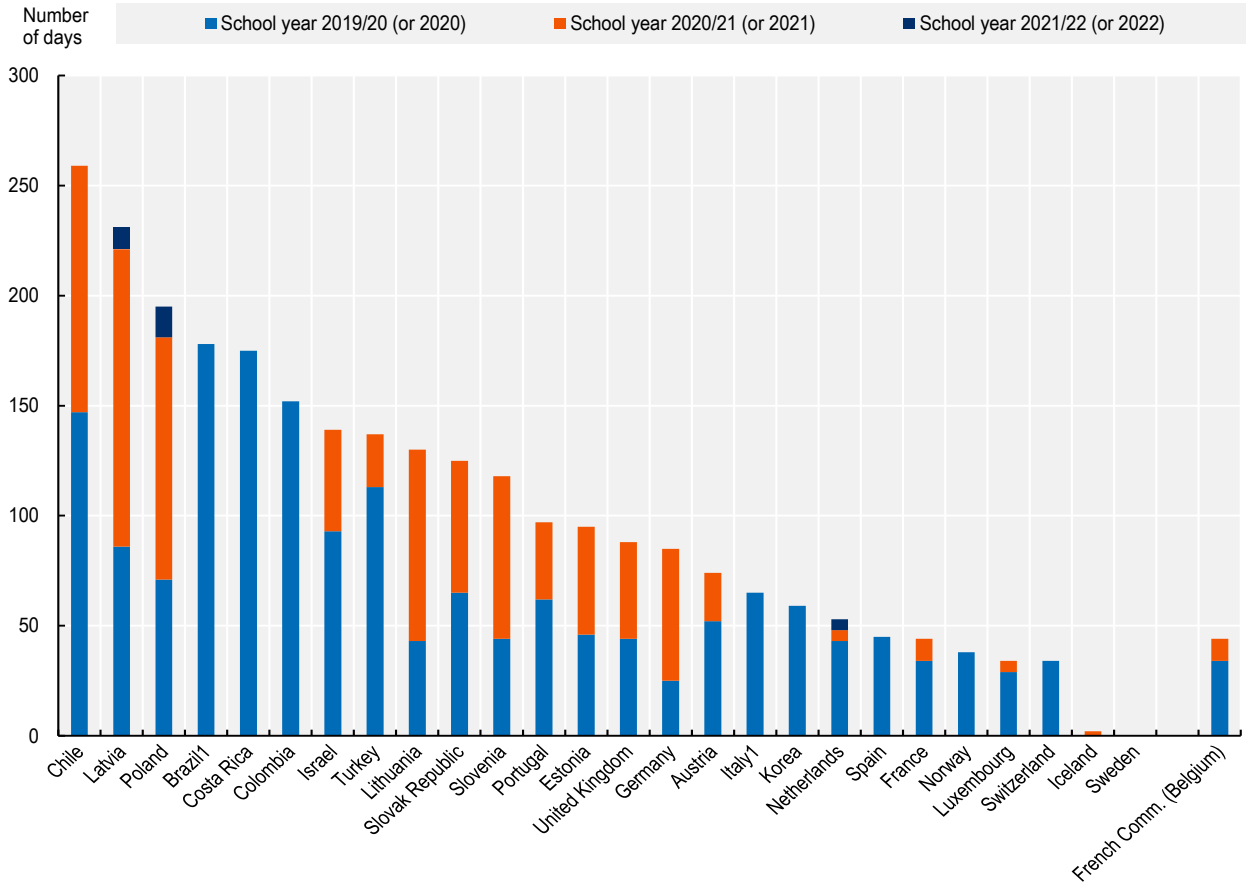
School closures and health protocols for reopening

The COVID-19 pandemic disrupted traditional schooling in 2020. During this time, the lack of vaccines and treatments compelled governments to adopt measures to reduce close contact between individuals, including school closures among other interventions. In half of the countries and other participants with available data for 2019/20, schools were fully closed (or only open for students with special educational needs and children of key workers) for at least 34 days at the pre-primary level, 45 days at the primary and lower secondary levels, and 50 days at the upper secondary level, for both general and vocational programmes (OECD COVID-19 database). The number of instruction days when schools were fully closed during the school year 2019/20 also varied considerably across the countries participating in the survey, and ranged in lower secondary education from no school closures in Iceland and Sweden to 175 days in Costa Rica (Figure 1).

While most countries shut down their school premises entirely in the early part of the pandemic, the situation improved considerably in 2021 in most cases. However, a few countries had more days of school closures in 2021 than in 2020. This was the case at all levels of education in Germany and Slovenia; at primary and secondary levels in Estonia, Latvia and Lithuania; at primary level in the United Kingdom; and at secondary level in Poland. The situation returned to “normal” in most countries in 2022. Only the Netherlands (for all levels of education), Latvia (for secondary education) and Poland (for general secondary education) decided to fully close their schools for at least five days during the school year 2021/2022 (Figure 1 and OECD COVID-19 database).

Figure 1. School closures due to COVID-19 (2020, 2021 and the first quarter of 2022)

Number of instruction days of full closure of lower secondary schools excluding school holidays, public holidays and weekends



Note: The data underlying this report were produced through the Survey on Joint National Responses to COVID 19, a collaborative effort conducted by the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Children's Fund (UNICEF), the World Bank (WB), and the Organisation for Economic Co-operation and Development (OECD). Data for other levels of education are available at https://www.oecd.org/education/Results-4th-wave-COVID-Survey-OECD-database.xlsx.
1. Data for 2021 and 2022 are missing.
Countries and other participants are ranked in descending order of the total number of days lower secondary schools were fully closed during the school years 2019/20 (2020), 2020/21 (2021) and 2021/22 (2022).
Source: OECD/UIS/UNESCO/UNICEF/WB (2022).

StatLink https://stat.link/9e2s7x

Although most countries closed their schools fully, in some cases schools were only partially closed – either staying open in certain areas or for specific grades or levels of education, or using a hybrid-learning model to reduce the number of students in the classroom. There were partial closures at all levels of education in Iceland in 2020 (33 days), and in Colombia (125 days) and Costa Rica (67 days) in 2021. In some countries, schools were fully closed during some parts of the year, and partially closed at other times (for example in Chile, the Netherlands and Türkiye).

During the school year 2021/22, all countries with available data implemented health protocols for some periods to ensure the safe reopening of schools. At all levels of education, the most common protocol was the promotion of frequent handwashing and the use of hand sanitiser. Almost all countries used enhanced cleaning and disinfection of sites and physical distance protocols. The majority also implemented tracing protocols and adjusted school infrastructure and activities. Fewer countries made changes to school schedules, and these were mostly at the discretion of schools, districts or the most local level of governance. The use of masks was also widely implemented across countries. Masks were required for all teachers

and students from primary to tertiary in three-quarters of countries. Wearing a mask was not compulsory for young children in most countries; only one-quarter of countries with available data required this for pre-primary children. More than one in three countries implemented COVID-19 tests for students and teachers in schools from primary to upper secondary. Vaccination requirements were a little less common, and were required for teachers in approximately one-quarter of the countries (at all levels of education), and for students in 10% of countries at most, depending on the level of education (Table 1 and OECD COVID-19 database).

Teacher absences

Countries faced an increase in the number of teacher absences during the pandemic. Once schools had generally reopened, countries needed to find replacements for absent teachers to avoid closing individual classes or, in a few cases, whole schools (OECD, 2021[2]). Therefore, monitoring teachers' absences during the pandemic was key to making informed choices about how to replace them and where to allocate resources to compensate for staff shortages. However, only half of the countries with available data for lower secondary education (15 out of 30) report collecting national statistics on teachers' absences over the three school years covered by the pandemic, while 9 countries – Austria, Brazil, Chile, Estonia, Japan, Lithuania, the Netherlands, Slovenia and Switzerland – did not. In the six other countries (Canada, Colombia, Finland, Iceland, Korea and the United States), decisions to collect such statistics or not were made by the local level of government. At the tertiary level, only Mexico and Poland collected national statistics on academic staff absences (Table 1 and OECD COVID-19 database).

It was difficult for most countries to keep track of teacher absenteeism in primary and secondary education, and only 11 reported being able to compare figures for before and during the pandemic. Among these countries, the number of days teachers were absent varied widely: in three countries, Costa Rica, France and Spain, absenteeism among teaching staff remained the same as the year prior to the pandemic from primary to upper secondary level. However, in 8 out of 11 of countries with available data, teacher absenteeism at the primary through secondary levels increased during the pandemic. It is unclear whether increases in absences were due to the direct effects of COVID-19, with teachers becoming infected or quarantining, or to indirect effects, such as health problems from increased stress levels during the pandemic (OECD COVID-19 database).

The effects of teacher absenteeism on pedagogical continuity depend to a large extent on how countries handle the situation. Countries can respond to teacher absences in various ways: replacing absent teachers with temporary teachers, having other teachers within the same school taking over teaching duties from absent colleagues, using non-teaching staff to supervise students, or closing the classes with absent teachers. The most common practice has been replacing absent teachers with other teachers or temporary staff. In 12 of the 18 countries for which data are available for lower secondary education, schools relied on pre-existing pools of teachers to replace those who were absent during the pandemic. Some countries also needed to create pools of temporary teachers. This happened in 7 of the 19 countries with available data, namely Austria, Estonia, France, Israel, Korea, Mexico and Slovenia (Table 1).

National examinations during the pandemic

Many countries rely on examinations to certify students' completion of upper secondary education and assess who can progress to the next level of education. The pandemic strongly disrupted national examinations in upper secondary education, particularly during the school year of 2019/20. A number of education systems revised the content, format and mode of delivery of their national examinations in response to the COVID-19 crises. In 18 out of 29 countries with data available, exams were postponed and rescheduled in 2019/20, while other countries and participants cancelled examinations in favour of alternative approaches, such as teacher-assessed grades, for high-stakes decision making (the French Community of Belgium, Denmark, Estonia, France, Israel, the Netherlands, Norway, the Slovak Republic, Sweden and the United Kingdom). Other alternatives to national exams in 2019/20 included adjusting the way they were administered, and introducing alternative assessments or validations of learning, such as appraisals of student learning portfolios showing progress over a specific period of time (OECD COVID-19 database).

After heavy disruptions during the first stage of the pandemic, national examinations largely returned to normal during the academic year 2020/21. The most common adjustments to exams in upper secondary general education (observed in 19 out of 25 countries) were related to enhanced health and safety measures, such as extra space between desks to ensure social distancing during exams. A significant share of countries and other participants (14 out of 27) also adjusted the content of examinations, for example, the subjects covered or the number of questions asked. Only the French Community of Belgium,

Denmark, Israel, Norway, Sweden and the United Kingdom cancelled exams in favour of alternative approaches in 2020/21. In 2021/22, examinations returned to their pre-pandemic form in most countries, with only Israel reporting cancelling exams and using alternative assessment approaches (OECD COVID-19 database).

Financial support for education during the crisis

Policy choices or external shocks, such as demographic changes or economic crises, can influence the allocation of public funds across sectors. The COVID-19 crisis has disrupted education on an unprecedented scale. Maintaining learning continuity amid school closures and ensuring schools reopened safely, all required additional financial resources beyond those budgeted for prior to the pandemic. As the sanitary crisis evolved into an economic and social crisis, governments have had to take difficult decisions about the allocation of funds across sectors.

The results of previous survey (OECD, 2021[1]) showed that, during 2020, about two-thirds of OECD countries increased their education budgets in response to the pandemic, with the remaining one-third keeping spending constant. Public education spending continued to rise in 2021, which may reflect investment in measures to keep schools open. At least 75% of countries with available data increased the financial resources directed to primary, secondary and tertiary educational institutions compared to 2020 levels. The latest COVID-19 survey quantifies the amount of the budget increases, which helps to estimate whether the increases were sufficient. When the financial year 2021 is compared to the previous financial year, most countries reported moderate increases of 1-5% to their budgets for primary to upper secondary education, with only 10 out of 27 countries with available data reporting increases of 5% or more. Only Colombia reported moderate decreases to their public budgets between 2020 and 2021 (Table 1). Similar patterns exist for pre-primary and tertiary education. In some countries, these changes to public spending on education represent a break with pre-pandemic trends. In Colombia, for example, total government expenditure on education increased by 10% on average between 2015 and 2019 (Figure C4.3).

Responsibilities for spending decisions related to COVID-19 differed across levels of education in line with the general distribution of responsibilities across levels of government. At primary and secondary levels, policies were more likely to be adopted systematically for all schools, while at tertiary level, greater decentralisation meant measures might differ across institutions and universities. For example, at primary and secondary levels, 14 out of 30 countries reported hiring temporary staff at a national level in response to the pandemic for the school year 2020/21 (2021), while only 3 out of 26 countries reported having done so at the tertiary level. The decision to hire temporary staff was deferred to local authorities or schools in 7 countries at primary and secondary levels, and 10 countries at tertiary level (Table 1 and OECD COVID-19 database).

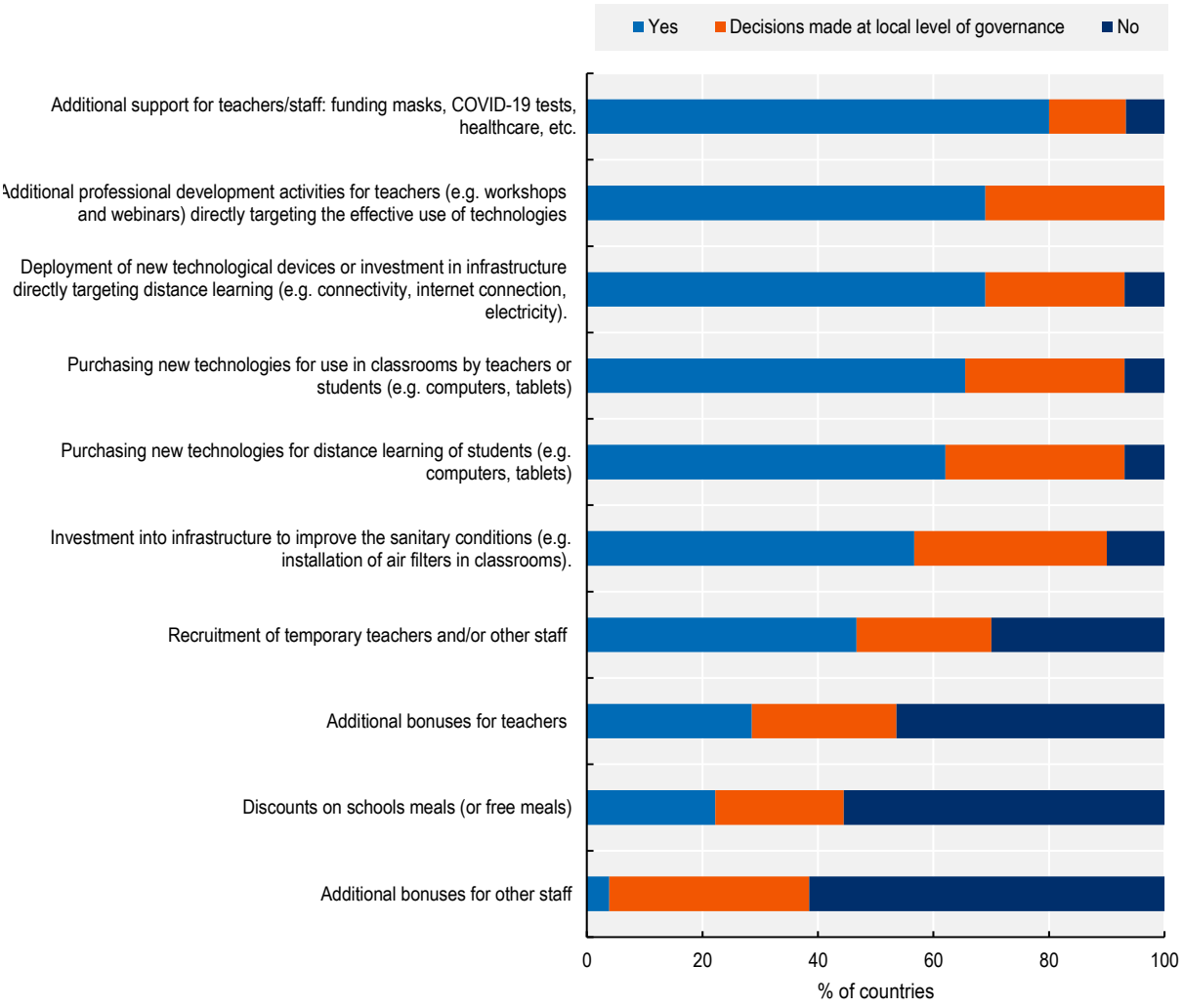
Spending to support teachers was common during the pandemic. The provision of masks, COVID-19 tests or other healthcare-related support was the most frequently adopted measure. At primary and secondary levels, 24 out of 30 countries invested in such measures in 2021, while a further 4 countries reported that these measures were left to the discretion of schools, districts or local levels of government. More than two-thirds of countries also invested in the professional development of teachers with a focus on developing digital skills in 2021. In 2022, the proportion of countries pursuing such policies on professional development of teachers had declined slightly, to 60%. Hiring temporary staff to ease the burden on teachers was less common (47% of countries in 2021 and 43% in 2022) and providing additional bonuses to teachers even less so (29% in 2021 and 28% in 2022). On the later, only 8 out of the 28 countries with data available – namely France, French Community of Belgium, Latvia, Lithuania, Mexico, Poland, the Slovak Republic and Slovenia, paid some or all teachers bonuses in 2021 to compensate for the challenges faced during the pandemic (Table 1, Figure 2 and OECD COVID-19 database).

Many children from low-income families rely on school meals to eat, but only a minority of countries reported providing discounted or free school meals during the COVID-19 crisis. Only 6 out of 27 countries with data available in 2021 reported additional expenditure on free or discounted school meals at the national level, while an additional 6 countries devolved those measures to the local level. Colombia is one of the few examples where meals were distributed to children who were not able to go to school, in some cases including nutritional support for the whole family. Along with Colombia, Chile, Latvia, Portugal, the United Kingdom and the United States were the other countries reporting additional expenditure on subsidised school meals at primary and secondary levels (Table 1 and Figure 2).

Many large countries devolved decisions on COVID-19 support measures to lower levels of authority. In Canada, Sweden and the United States most the measures implemented were at the discretion of provinces, municipalities, counties or states.

Figure 2. Share of countries adopting COVID-19 support measures with a direct impact on public budgets (2020/21 or 2021)

Primary and secondary education, in per cent



Note: The data underlying this report were produced through the Survey on Joint National Responses to COVID 19, a collaborative effort conducted by the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Children's Fund (UNICEF), the World Bank (WB), and the Organisation for Economic Co-operation and Development (OECD). Data for other levels of education are available at https://www.oecd.org/education/Results-4th-wave-COVID-Survey-OECD-database.xlsx.
Measures are ranked in descending order of the share of countries and other participants adopting them at the national level.
Source: OECD/UIS/UNESCO/UNICEF/WB (2022).

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Assessment of learning and other losses

Understanding the learning losses due to the pandemic will be essential if governments are to develop targeted policies to address them. The return to in-person schooling in 2021 offered most countries the opportunity to assess learning and other losses over the 2020/21 school year and to implement remedial activities if needed. An increasing number of countries have taken steps to implement standardised assessments of learning since the beginning of the pandemic. At primary level, around 62% of countries with available data reported that standardised tests for students took place in 2020/21, rising to over 90%

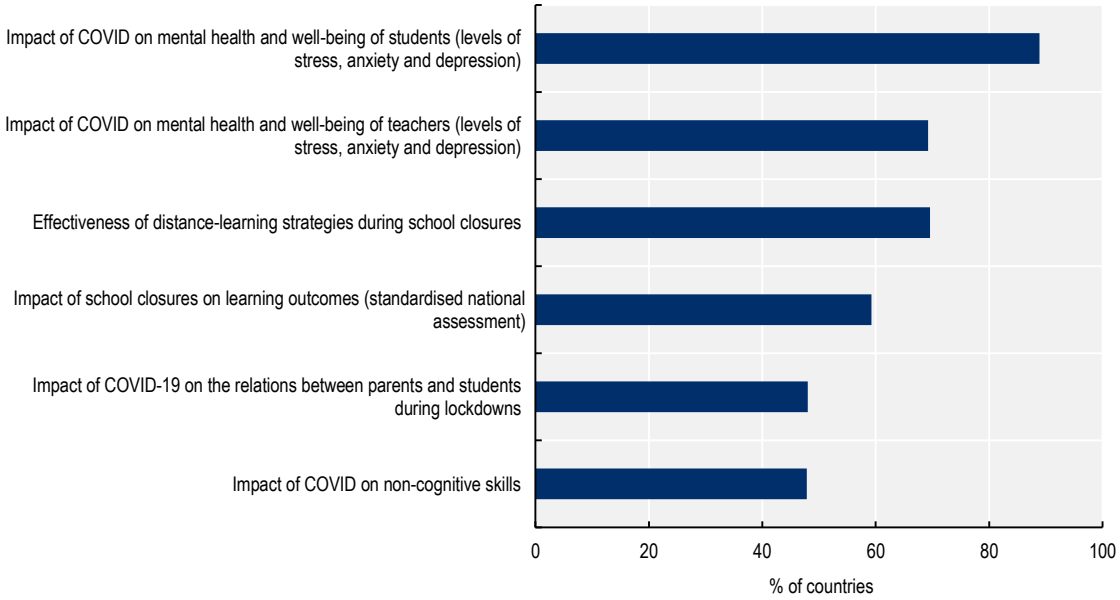
in 2021/22. Similarly, the share of countries in which standardised tests for secondary students were conducted increased between 2020/21 and 2021/22, from around 54% to 84% at lower secondary level and from 70% to nearly 89% at upper secondary level in general programmes. Studies to evaluate the impact of school closures on learning outcomes were undertaken at a national level in more than half of the countries with available data (at any level from primary to upper secondary). This shows not only that countries are aware of the need to monitor the impact of the pandemic, but also the importance of standardised assessments in doing so (OECD COVID-19 database).

Assessments have covered learning losses in both reading and mathematics in a large majority of countries since 2020 (22 at primary level and 23 at lower secondary level, out of 24 with available data). Only 9 countries also assessed learning losses in science at primary and 13 countries at lower secondary level. Assessments of educational losses have been less common at pre-primary and tertiary levels, with only 3 countries having assessed the effects of school closures at a national level on pre-primary students and 4 on tertiary students. For pre-primary education, one major reason for the lack of assessments is the difficulty in setting up assessments for the youngest students. At tertiary level, national assessments are rare due to tertiary institutions' high levels of autonomy in most countries (OECD COVID-19 database).

Evaluations have not been limited to the impact of the crisis on learning. Since 2020, all countries with available data except Mexico, the Slovak Republic and Türkiye have undertaken studies on the impact of COVID-19 on the mental health and well-being of primary and secondary students at the national level. Similarly, more than two-thirds of countries assessed the impact on health and well-being of primary and secondary teachers. In contrast, at most half of the countries with data available have undertaken studies on the impact of school closures on non-cognitive skills or on the relationships between parents and students during lockdowns, even though long periods of social isolation during the pandemic might also have had significant consequences in these areas (Figure 3 and Table 1).

Figure 3. Share of countries undertaking studies to evaluate the effects of the pandemic (2021 and 2022)

Lower secondary education, in per cent



Note: For some countries, the school year corresponds to the calendar year (i.e. 2021 instead of 2020/2021 and 2022 instead of 2021/2022). The data underlying this report were produced through the Survey on Joint National Responses to COVID 19, a collaborative effort conducted by the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Children's Fund (UNICEF), the World Bank (WB), and the Organisation for Economic Co-operation and Development (OECD). Data for other levels of education are available at https://www.oecd.org/education/Results-4th-wave-COVID-Survey-OECD-database.xlsx.
Evaluations are ranked in descending order of the share of countries and other participants undertaking them.
Source: OECD/UIS/UNESCO/UNICEF/WB (2022).

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Various forms of distance learning were the main policy response to school closures and 16 out of 23 countries have examined the effectiveness of their distance-learning strategies at lower secondary level. In contrast to other assessments, tertiary education was more equally represented in this area: 14 countries assessed the impact of distance learning in tertiary education. This is an indication that distance learning was seen as particularly relevant in tertiary education (OECD COVID-19 database).

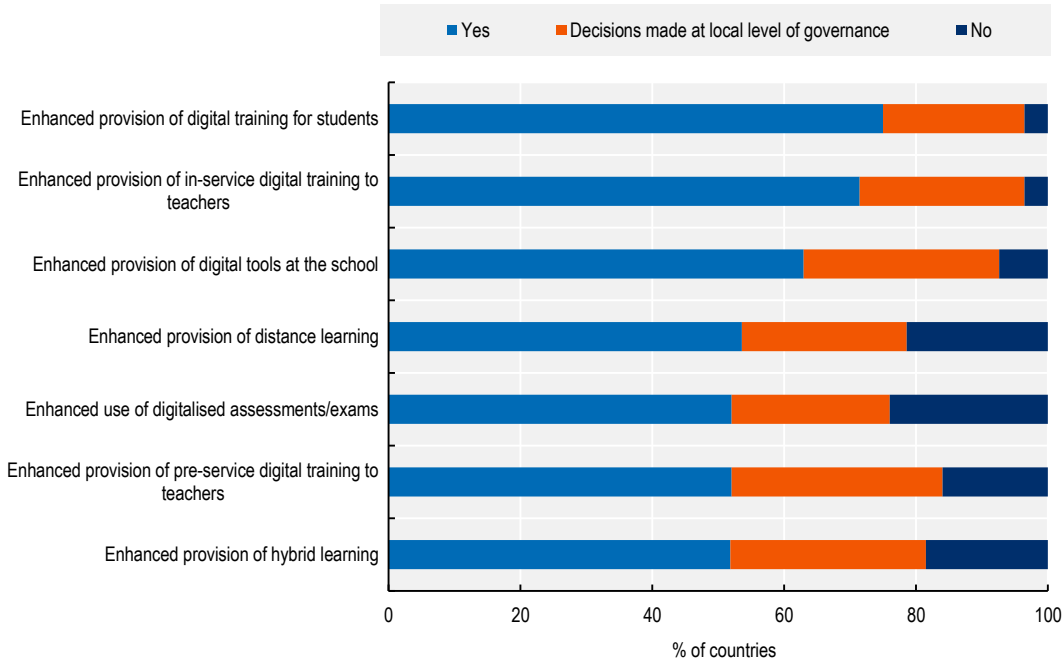
Recovery and lessons learned

Maintaining and developing digitalisation measures

The pandemic forced countries to adopt solutions for digital teaching and learning to compensate for periods when in-person lessons were limited or not possible at all. Although many of these solutions were implemented as emergency measures, they have proved valuable beyond periods of remote learning. The lessons learned through the adoption of emergency response measures during the pandemic have also helped facilitate the transition to digital tools in education.

Figure 4. Share of countries planning to maintain or develop digitalisation measures implemented due to COVID-19

Lower secondary education, in per cent



Note: The data underlying this report were produced through the Survey on Joint National Responses to COVID 19, a collaborative effort conducted by the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Children's Fund (UNICEF), the World Bank (WB), and the Organisation for Economic Co-operation and Development (OECD). Data for other levels of education are available at https://www.oecd.org/education/Results-4th-wave-COVID-Survey-OECD-database.xlsx.
Digitalisation measures are ranked in descending order of the share of countries and other participants planning to maintain or develop them at the national level.
Source: OECD/UIS/UNESCO/UNICEF/WB (2022).

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Digital platforms should offer effective and equitable resources for in-school and out-of-school learning. Many countries recognise that, when done well, digital platforms facilitate access to education and reduce inequity in learning outcomes. Thus, 17 out of 27 of countries with available data plan to continue the enhanced use of digital tools at lower secondary

education, while continuing the enhanced provision of distance or hybrid learning to all levels of education from primary to upper secondary. Consequently, 13 out of 25 countries plan to increase pre-service digital training for lower secondary teachers at the national level. In-service digital training will also be provided to existing teachers at lower secondary education in most countries (Figure 4 and Table 1).

Although the majority of countries plan to continue their increased use digital tools, changes to the regulatory or institutional framework governing digital education have not been widespread. 54% of countries with available data had made no changes to either the regulatory or the institutional framework on digitalisation and had no plans to do so. While a number of countries did introduce changes to their regulatory or institutional framework during the pandemic, only four have plans for further changes: Italy, Lithuania, Luxembourg and the Slovak Republic.

Planned recovery measures

It is crucial for countries to have clear strategies for recovery in education to address the impact of the pandemic on young people's learning, development and mental health. Across the countries with available data, national measures to provide students with additional support have focused more on primary to upper secondary education than on other levels. 24 out of 30 countries with available data implemented national programmes at the primary to upper secondary level to give students additional support in the school year 2021/22. In contrast, only 19 out of the 28 countries with available data implemented similar programmes at pre-primary levels. In some instances, this might reflect the length of school closures, which were often shorter for pre-primary than other levels of education. In Austria, Estonia and Latvia, for example, pre-primary was the only level of education where schools were not fully closed due to COVID-19 at any point during the pandemic (OECD COVID-19 database).

Concerns about students' mental health were at the forefront of countries' national recovery measures in the school year 2021/22. In 21 out of 30 countries with data available, extra psychological and socio-emotional support was provided for primary and secondary students due to the COVID-19 pandemic (Figure 5). In addition, more than 60% of the countries with data reported implementing new measures in 2021/22 that included teacher training in how to support primary and secondary students' mental health and well-being (Figure 6).

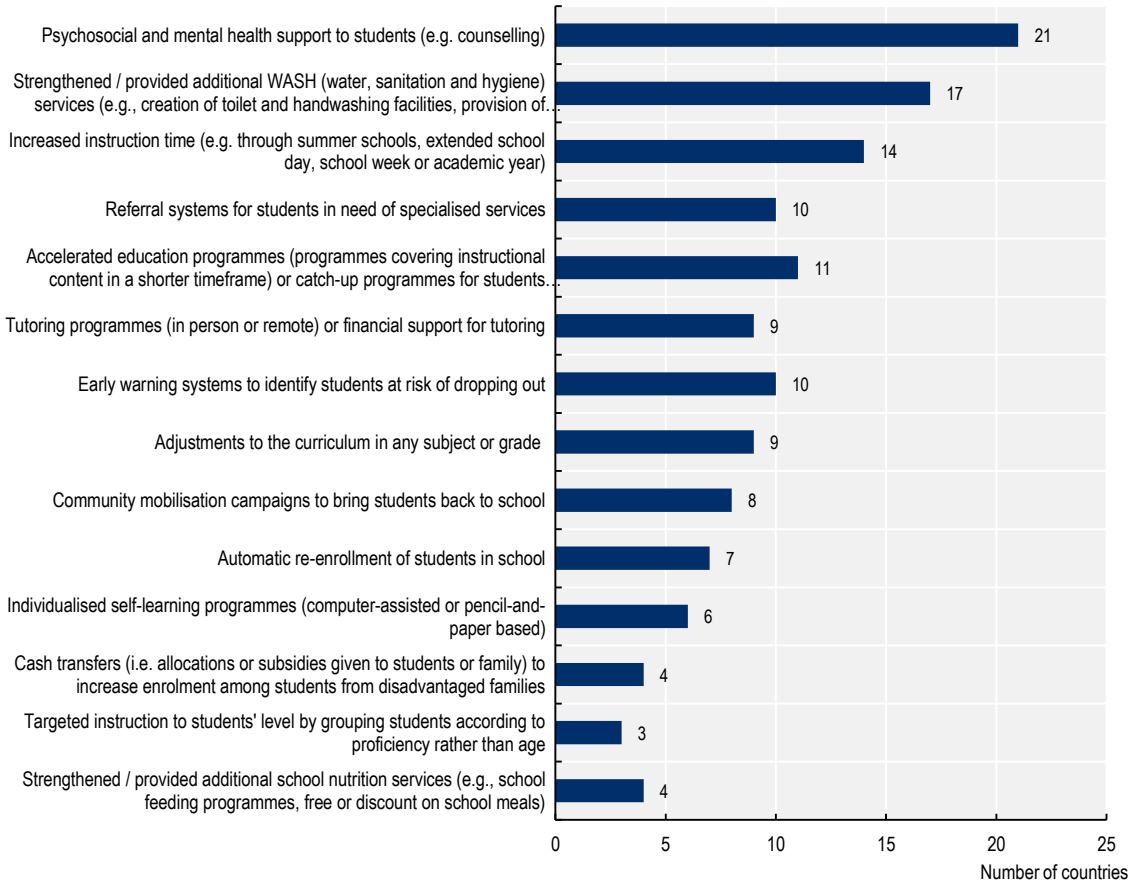
Other common recovery approaches in 2021/22 were focused on students' academic progress. 16 countries (more than 60%) with available data reported providing structured pedagogical resources and training to help primary and secondary teachers adapt and improve their teaching (Figure 6) and 13 countries (45%) increased instruction time for students at these levels of education (Figure 5). In Austria and Luxembourg, for example, summer schools were organised on a national level for primary and secondary students (BMBWF, 2022[3]; Schouldoheem, 2021[4]).

While many countries plan to continue some recovery measures, they will be scaled back during the school year 2022/23 compared to the previous year. For example, only 6 countries with available data reported planning increased instruction time for the school year 2022/23, less than half the number for 2021/22. Similarly, 13 countries were planning to implement additional psychosocial and mental health support for primary and secondary students in 2022/23, compared to 21 in 2021/22. The number of countries planning to provide additional teacher training on mental health and well-being in 2022/23 was also only 12.

The longer recovery measures last, the more important it becomes to evaluate their effectiveness and adjust them as needed. At the primary and lower secondary level, 15 out of 19 countries with available data reported that they have assessed the national recovery programmes implemented in 2021/22 in a standardised way, or that they plan such assessments. At the upper secondary level, the share of countries assessing recovery plans is slightly lower, with 14 out of 20 countries with available data, while it is significantly lower at pre-primary level, with 7 out of 14 countries with available data.

Figure 5. Number of countries implementing recovery policies for students due to COVID-19 (2021/22 or 2022)

Primary to upper secondary education



Note: For some countries, the school year corresponds to the calendar year (i.e. 2022 instead of 2021/2022). The data underlying this report were produced through the Survey on Joint National Responses to COVID 19, a collaborative effort conducted by the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Children's Fund (UNICEF), the World Bank (WB), and the Organisation for Economic Co-operation and Development (OECD). Data for other levels of education are available at https://www.oecd.org/education/Results-4th-wave-COVID-Survey-OECD-database.xlsx.
Measures are ranked in descending order of the number of countries and other participants implementing them.
Source: OECD/UIS/UNESCO/UNICEF/WB (2022).

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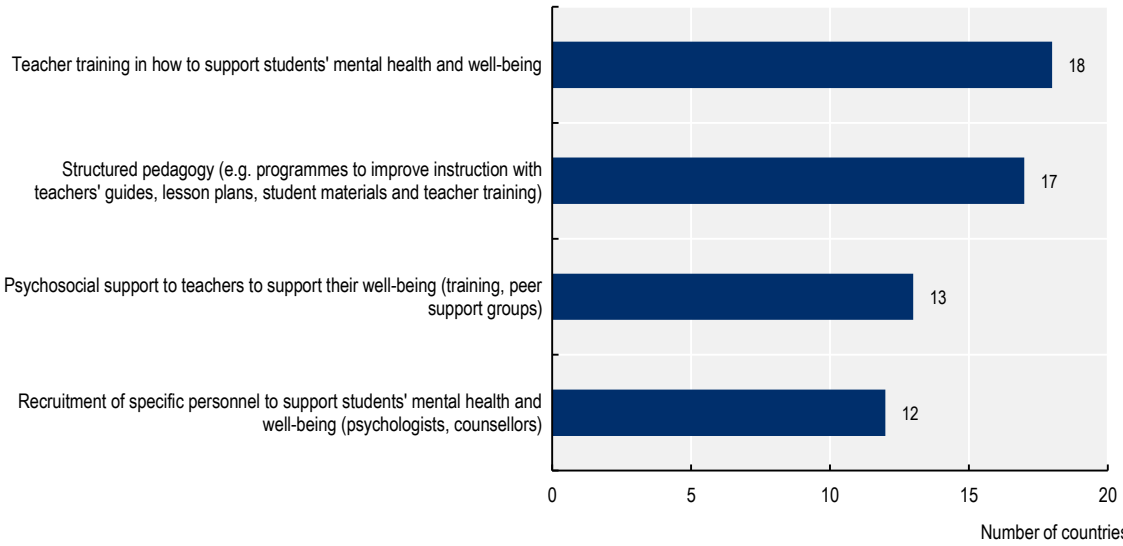
Figure 6. Number of countries implementing recovery policies for teachers due to COVID-19 (2021/22 or 2022)

Primary to upper secondary education



Note: The data underlying this report were produced through the Survey on Joint National Responses to COVID 19, a collaborative effort conducted by the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Children's Fund (UNICEF), the World Bank (WB), and the Organisation for Economic Co-operation and Development (OECD). Data for other levels of education are available at https://www.oecd.org/education/Results-4th-wave-COVID-Survey-OECD-database.xlsx.
Measures are ranked in descending order of the number of countries and other participants implementing them.
Source: OECD/UIS/UNESCO/UNICEF/WB (2022).

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Definitions

The schools were **fully closed**: The schools were "fully closed" when there were government-mandated and/or recommended closures of educational institutions (e.g. closure of buildings for students) that affected all or most of the student population enrolled at a given level of education. In some cases, schools were still open over this period for students with special educational needs (SEN) and children of key workers but schools were "closed" for most of the student population. If schools are theoretically open for some grades, but the government orders or recommends that parents keep their children at home if possible (resulting in a very low attendance), then the schools are considered fully closed. When schools were fully closed, various distance education strategies were deployed to ensure educational continuity (see definition below).

The schools were **partially opened**: The schools were ""partially opened"" in situations where the government mandated and/or recommended: (a) partial reopening in certain areas, and/or (b) a phased (re-)opening by grade level or age and/or (c) the use of a hybrid model combining in-person at school and distance education. When schools were partially open, various distance education strategies are deployed to ensure educational continuity. "Partially open" includes the following cases where schools are:

- Fully Open only in certain areas/regions;
- Fully Open only for certain grades;
- Fully Open with only a reduction of students per classroom (e.g. distance learning for some of them and in-person classes for the others);
- Any combination of the above three cases.

Distance education strategies during school closure: The closure of schools has led to different strategies to avoid as much as possible the loss of instruction during this period. In some cases, each day planned at the beginning of the year as in-person instruction at the school was provided at distance during periods when schools were closed (i.e. school buildings closed to all or most students, teaching/learning in virtual mode for each day of instruction). In other cases, various distance education strategies may be deployed to ensure continuity of education during school closures, but distance education did not necessarily fully compensate for the instructional time that students would have received if the schools had remained open (i.e. school buildings closed to all or most students, teaching/learning in virtual mode for some but not all days of instruction). Only in rare cases have no strategies been implemented to provide distance education during school closures and to compensate the loss of instruction (i.e. school buildings closed to all or most students, no teaching/learning activities organised). Instruction during "virtual opening" may have been delivered synchronously (i.e. where the learning group interacts at the same time) or asynchronously (i.e. teacher and the pupils interact in different places and during different times).

Hybrid learning: the use of a hybrid approach combining in-person and distance learning.

Distance education: Education that uses one or more technologies to deliver instruction to students who are separated from the instructor and to support regular and substantive interaction between the students and the instructor synchronously or asynchronously. Technologies used for instruction may include the following: paper (e.g. books, take-home packages); TV; radio; Internet; one-way and two-way transmissions through open broadcasts, closed circuit, cable, microwave, broadband lines, fibre optics, satellite or wireless communication devices; audio conferencing; and video cassette, DVDs, and CD-ROMs, if the cassette, DVDs, and CD-ROMs are used in a course in conjunction with the technologies listed above.

Distance education course: A course in which the instructional content is delivered exclusively via distance education. Requirements for coming to campus for orientation, testing, or academic support services do not exclude a course from being classified as distance education.

Distance education programme: A programme for which all the required coursework for programme completion is able to be completed via distance education courses.

Source

The data underlying this report was produced through the Survey on Joint National Responses to COVID-19 School Closures, a collaborative effort conducted by the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Children's Fund (UNICEF), the World Bank, and the Organisation for Economic Co-operation and Development (OECD). Designed for government officials responsible for education, the survey collected information on national or regional education responses to school closures related to the COVID-19 pandemic.

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COVID-19 table

Table 1. COVID-19: The second year of the pandemic

WEB Table 1	*Main findings from the COVID-19 survey, by theme*

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Chapter A. The output of educational institutions and the impact of learning

Indicator A1. To what level have adults studied?

Highlights

- Tertiary attainment has increased strongly in most OECD countries among 25-34 year-olds. The average share of younger adults with a tertiary degree has increased from 27% in 2000 to 48% in 2021. In this age group, the share of individuals with tertiary attainment is 7 percentage points higher than the share of individuals with upper secondary or post-secondary non-tertiary attainment on average across OECD countries. If current trends continue, a tertiary education will be the most common attainment among working-age adults on average across OECD countries within a few years.
- A gender gap in educational attainment is opening up among 25-34 year-olds. On average, 57% of younger adults with at least a bachelor's or equivalent degree are women, compared with a more balanced gender ratio among older adults (55-64 year-olds). Women make up at least half of all 25-34 year-olds with bachelor's, master's or doctoral or equivalent attainment in every OECD country except Japan.
- Within most countries there are large regional differences in educational attainment. Often, the tertiary attainment rate among 25-64 year-olds in the best-performing subnational region is twice that of the lowest. Urban regions tend to have much higher shares of tertiary-educated adults than rural ones, with the capital region (which is frequently home to a country's largest city) often having the highest concentration of adults with tertiary attainment.

Context

Educational attainment measures the percentage of the population holding a formal qualification at a given level as their highest level of education. It is frequently used as a proxy measure for human capital, even if formal qualifications do not necessarily mean the holders have acquired the relevant skills in demand from employers. In many professions with nationally or professionally regulated admission (e.g. medical doctors), the achievement of certain formal qualifications is an essential entry requirement. But even in occupations where formal qualifications are not mandated, employers tend to perceive formal qualifications as the most important signals of the type of knowledge and skills that potential employees have acquired. They are especially important for recent graduates, but they often affect individuals' careers throughout their working lives.

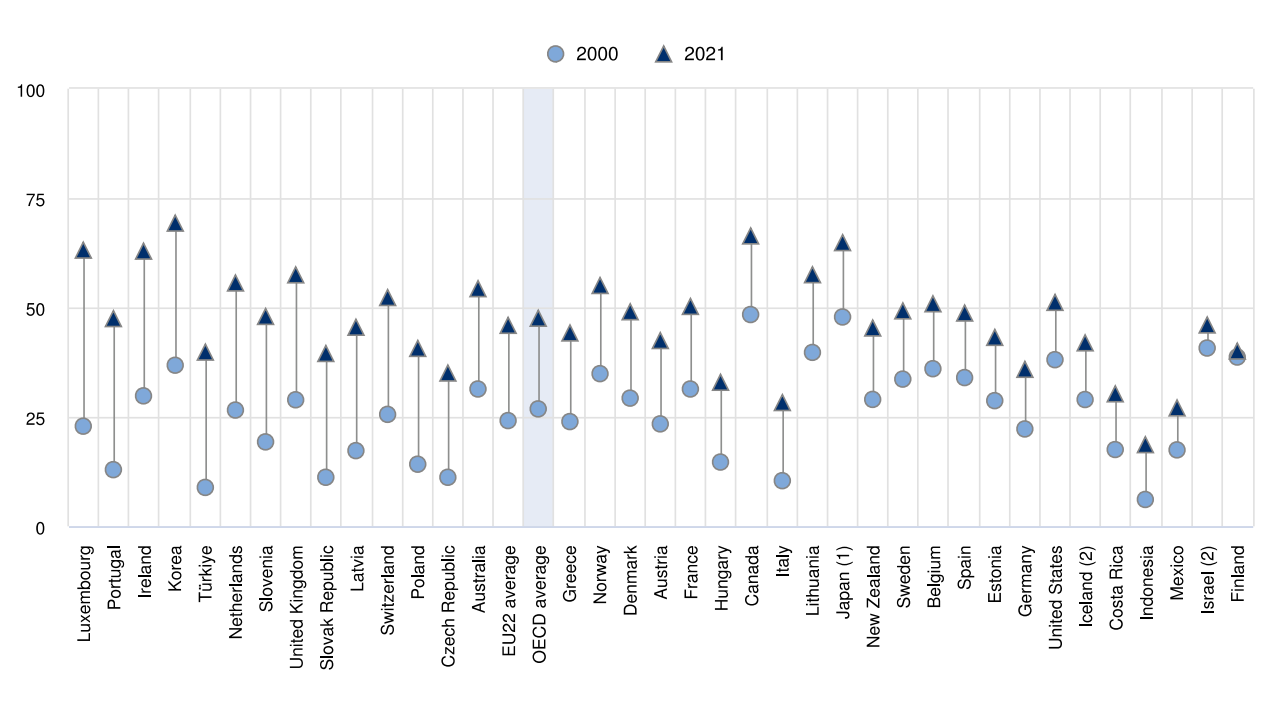
Higher levels of educational attainment are associated with positive economic, labour market and social outcomes for individuals (see Indicators A3, A4 and A6). Highly educated individuals tend to be more socially engaged and have higher employment rates and relative earnings. While educational attainment measures formal educational achievements and not learning outcomes, higher attainment is strongly correlated with greater proficiency in literacy and numeracy (OECD, 2016[1]).

The benefits of higher attainment offer strong incentives for individuals to pursue their education. At the same time, many governments have adopted policies to expand access to education because of the societal and economic benefits. Together, these have resulted in strong increases in educational attainment in OECD and partner countries in recent decades.

While increasing educational attainment has yielded important economic and social benefits, in some countries tertiary attainment may have risen faster than the labour markets' capacity to absorb tertiary graduates. Moreover, even if the increase in educational attainment is beneficial on average, tertiary attainment does not yield the same benefit to everyone. As educational attainment is likely to increase further, it is important for governments and providers to continuously improve the way tertiary education responds to current and future labour-market needs to provide attractive education options outside of the tertiary sector.

Figure A1.1. Trends in the share of tertiary-educated 25-34 year-olds (2000 and 2021)

In per cent



1. Data for tertiary education include upper secondary or post-secondary non-tertiary programmes (less than 5% of adults are in this group).
2. Year of reference differs from 2000: 2002 for Israel and 2003 for Iceland.
Countries are ranked in descending order of the difference in the share of tertiary-educated 25-34 year-olds between 2000 and 2021.
Source: OECD (2022), Education at a Glance Database, http://stats.oecd.org/. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

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Other findings

- Upper secondary or post-secondary non-tertiary education remains the most common level of attainment in a number of European countries, where few young people (25-34 year-olds) leave the education system with below upper secondary attainment, but tertiary attainment rates are below the OECD average. In contrast, low upper secondary or post-secondary non-tertiary attainment rates may reflect either high rates of below upper secondary attainment, such as in Costa Rica and Mexico, or very high rates of tertiary attainment, as in Canada and Korea.
- Although some countries have achieved near universal upper secondary education among 25-34 year-olds, across the OECD 14% of younger adults have still left school without an upper secondary qualification. Across OECD countries, this rate is especially high in Costa Rica and Mexico (about 45%) but also in Colombia (25%), Italy (23%), Spain (28%) and the Republic of Türkiye (36%).
- There are large differences among OECD countries in the prevalence of different fields of study among 25-64 year-olds with tertiary attainment. For example, on average across the OECD, 12% of tertiary-educated 25-64 year-olds had studied education, but the percentage ranges from 5% to around 20%. One might expect that the field of education prepares students to become teachers but this wide range among OECD countries suggests that the same field of study can prepare people for different career paths in different countries.

Analysis

Tertiary attainment

Rising educational attainment is most strongly reflected in the increases in tertiary attainment rates over the past few decades. On average across OECD countries with available trend data, the share of 25-34 year-olds with a tertiary degree (i.e. short-cycle tertiary, bachelor's, master's or doctoral or equivalent) has increased from 27% in 2000 to 48% in 2021 (Figure A1.1). These increases mean a tertiary qualification has become the most common level of attainment among younger adults on average across OECD countries. If current trends continue, tertiary attainment will overtake upper secondary or post-secondary non-tertiary attainment as the most common level of educational attainment among the entire working-age population in the near future as the current group of 25-34 year-olds age and younger cohorts with higher levels of tertiary attainment enter the workforce. Tertiary attainment is already becoming the norm among young adults in many OECD countries. In 14 OECD countries, more than half of all 25-34 year-olds have a tertiary degree, rising to at least two-thirds in Canada and Korea. Italy and Mexico are the only OECD countries where tertiary attainment among younger adults is below 30% (Table A1.2).

The trend of increasing tertiary attainment has persisted steadily throughout the last two decades. The average increase in tertiary attainment since 2011 closely matches the growth of the previous decade. However, at the country level, important differences exist. Whereas most of Korea's increase in tertiary attainment occurred in the early 2000s, the opposite is the case for Portugal and Türkiye, where tertiary attainment grew faster between 2011 and 2021 than between 2000 and 2011 (Figure A1.1 and Table A1.2).

Although the timing varies somewhat across countries, the increase in tertiary attainment has been a nearly universal trend. Countries that started with low tertiary attainment levels in 2000 have experienced strong growth. The share of tertiary-educated 25-34 year-olds quadrupled in Türkiye, from 9% in 2000 to 40% in 2021. Similarly, rates increased from 13% to 47% in Portugal and from 11% to 39% in the Slovak Republic over the same period. However, countries that had already high tertiary attainment levels in 2000, such as Ireland and Korea, have also experienced strong growth between 2000 and 2021: from 30% to 63% in Ireland and from 37% to 69% in Korea (Figure A1.1).

By fields of study

Across the OECD, business, administration and law is the most common broad tertiary field of study. On average, 24% of the tertiary-educated 25-64 year-olds studied this field, followed by the arts or humanities, social sciences, journalism and information, at 18%. However, when taken together, the combined fields of science, technology, engineering and mathematics (STEM) are the most prevalent: in total, 25% of all 25-64 year-olds with tertiary attainment have studied a STEM field, with 16% having studied engineering, manufacturing and construction (Table A1.3).

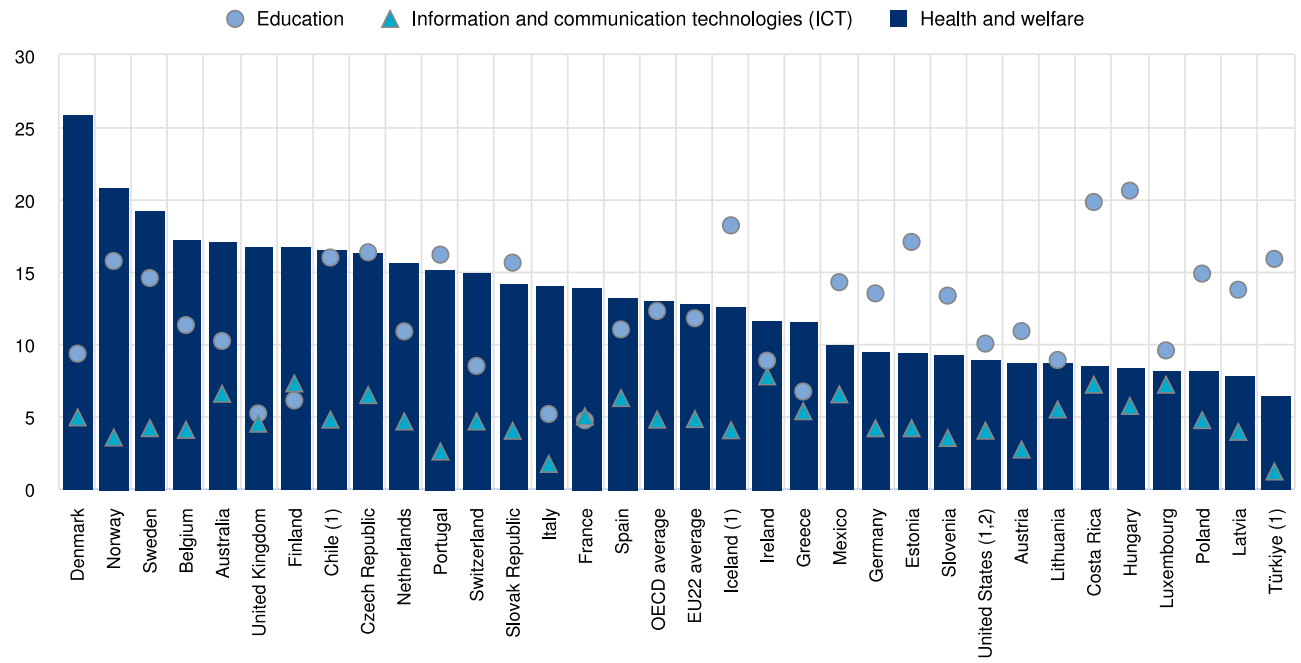
Overall OECD averages do not reflect the situation in most individual countries, however, as the popularity of different fields of study varies widely across countries. For example, 1% of the 25-64 year-olds with tertiary attainment studied natural sciences, mathematics and statistics in Chile and Costa Rica, compared to 10% in the United States. Likewise, 10% of tertiary-educated individuals studied engineering, manufacturing and construction in Iceland, Ireland, Luxembourg and the United States, while the share is 25% or more in Austria and Germany (Table A1.3).

On average across OECD countries, 13% of the 25-64 year-olds have a tertiary qualification in the field of health and welfare. Three Nordic countries present the highest rates for this indicator: Denmark (26%), Norway (21%) and Sweden (19%) (Figure A1.2).

While some of these differences are due to differences in the economic structure of countries and the resulting differences in labour-market demand for skills, this cannot explain all the variation in the prevalence of different fields of study. For example, 5% of tertiary-educated adults had studied education in France, Italy and the United Kingdom, compared with 21% in Hungary (Table A1.3). One might think that the field of education prepares students to become a teacher but this large range among OECD countries suggests that the same field of study can prepare people for different career paths in different countries. Indirectly, it can also imply that the acquisition of subject knowledge constitutes only a small fraction of the value of tertiary attainment in the labour market, while the acquisition of other skills is more important.

Figure A1.2. Field of study among tertiary-educated 25-64 year-olds (2021)

Tertiary-educated adults who studied a given field as a percentage of all tertiary-educated adults



1. Year of reference differs from 2021. Refer to the source table for more details.
2. Data refer to bachelor's degree field, even for those with additional tertiary degrees.
Countries are ranked in descending order of the share of health and welfare graduates among all tertiary-educated 25-64 year-old adults.
Source: OECD (2022), Table A1.3. See *Source* section for more information and Annex 3 for notes ((https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

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Upper secondary or post-secondary non-tertiary attainment

As tertiary attainment has become more common across OECD countries, the share of the population with upper secondary or post-secondary non-tertiary education as their highest level of attainment has declined. However, this decline has been less pronounced than the increase in tertiary attainment because of a parallel shift from below upper secondary attainment. As more young people have obtained upper secondary or post-secondary non-tertiary qualifications, this has compensated in part for the increasing numbers who have stayed on in education to tertiary level. In 2021, on average 39% of the population aged 25-34 had an upper secondary or post-secondary non-tertiary qualification as their highest level of educational attainment, which is only 4 percentage points less than 10 years earlier (Table A1.2).

Upper secondary or post-secondary non-tertiary education remains the most common attainment level in countries where few young people leave formal education with below upper secondary attainment, but tertiary attainment rates remain comparatively low. This is the case in the Czech Republic (58% of 25-34 year-olds had an upper secondary or post-secondary non-tertiary attainment and 7% below upper secondary attainment) and a number of other European countries. In contrast, low levels of upper secondary or post-secondary non-tertiary attainment are common both in countries with particularly low attainment levels as well as in those with particularly high ones. In Costa Rica and Mexico, for example, upper secondary or post-secondary non-tertiary attainment is below 30% because a large share of the population only achieves below upper secondary attainment. In contrast, the share is also less than 30% in Canada and Korea, where at least two-thirds of 25-34 year-olds have obtained a tertiary qualification (Table A1.2).

Below upper secondary attainment

Upper secondary or post-secondary non-tertiary attainment has become essential for successful participation in a modern economy and society. Individuals without it struggle in the labour market and face worse social outcomes. While the share of younger adults with below upper secondary attainment has declined by 5 percentage points since 2011 on average across OECD countries, 14% still did not have an upper secondary education in 2021. It is highest in the OECD countries with the lowest per capita gross domestic product (GDP), Costa Rica (45%) and Mexico (44%). However, it is also high in some countries with significantly higher income levels, such as Italy (23 %) and Spain (28%). Among partner countries, Brazil is notable for having reduced its share of younger adults without upper secondary attainment from 43% in 2011 to 29% in 2021, despite an income level that is lower than that of any OECD country (Table A1.2).

Some countries have achieved near universal upper secondary attainment among younger adults. In Korea, only 2% of 25-34 year-olds have not attained at least an upper secondary education. Similarly, in Slovenia, the share is 4% and in Canada and Ireland it is 5% (Table A1.2). These numbers should encourage countries still struggling with higher rates of below secondary attainment among younger adults.

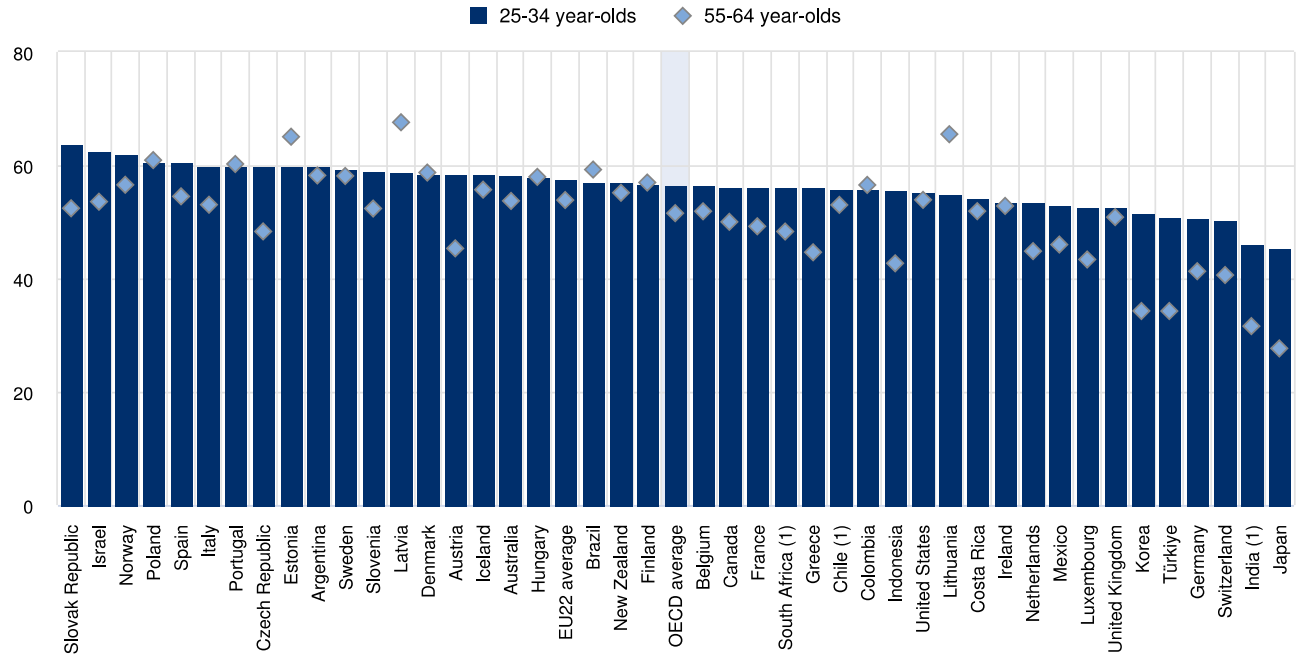
Variations in educational attainment

By gender

On average across OECD countries, the share of younger women (25-34 year-olds) with tertiary education (i.e. short-cycle tertiary, bachelor's, master's or doctoral) is 53% compared with 41% for men (Table A1.2). If only master's and doctoral or equivalent attainment are considered, younger women still show a higher rate than younger men (OECD, 2022[2]).

Figure A1.3. Share of women among adults with a bachelor's, master's, doctoral or equivalent degree, by age group (2021)

In per cent



1. Year of reference differs from 2021. Refer to the source table for more details.
Countries are ranked in descending order of the share of women among 25-34 year-olds with a bachelor's, master's or doctoral or equivalent degree.
Source: OECD (2022), Education at a Glance Database, http://stats.oecd.org/. See Source section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

StatLink https://stat.link/cafz42

While tertiary attainment is becoming more common for both men and women, the increase is particularly strong among women. As a consequence, women now make up a clear majority of 25-34 year-olds with a bachelor's, master's or doctoral or equivalent degree, at 57%. In contrast, gender ratios among 55-64 year-olds with tertiary attainment are nearly balanced, as 52% of adults in this group are women (Figure A1.3).

The increase in the share of women with at least a bachelor's or equivalent degree has been a prominent trend across most OECD countries. It has been particularly strong in OECD and partner countries where women are under-represented in older cohorts. This has led to gender ratios converging across countries. Countries with a smaller share of women among 55-64 year-olds with a bachelor's or equivalent degree have experienced a particularly strong intergenerational shift. In Türkiye, for example, only 34% of 55-64 year-olds who attained at least bachelor's or equivalent level of education are women while the share has increased to 51% among 25-34 year-olds. As a consequence of this convergence in gender ratios, women make up more than half of all 25-34 year-olds with bachelor's, master's or doctoral or equivalent attainment in every OECD country except Japan. Similar increases can also be observed in the India, where female tertiary attainment (excluding short-cycle tertiary) is nearly at parity with the male tertiary attainment rate among younger adults (Figure A1.3). The change in India is particularly important as this country accounts for approximately one-fifth of the global population.

Although the educational advantage of women has increased at the upper end of the attainment spectrum, it has remained stable at the lower end. In 2021, on average across OECD countries, 12% of women and 16% of men aged 25-34 had below upper secondary attainment. This gender gap is the same as it was in 2011, as the shares of both younger women and younger men without upper secondary attainment have each declined by 5 percentage points over the past 10 years. Men now make up a larger share of the population of younger adults with upper secondary or post-secondary non-tertiary attainment (Table A1.2).

By subnational region

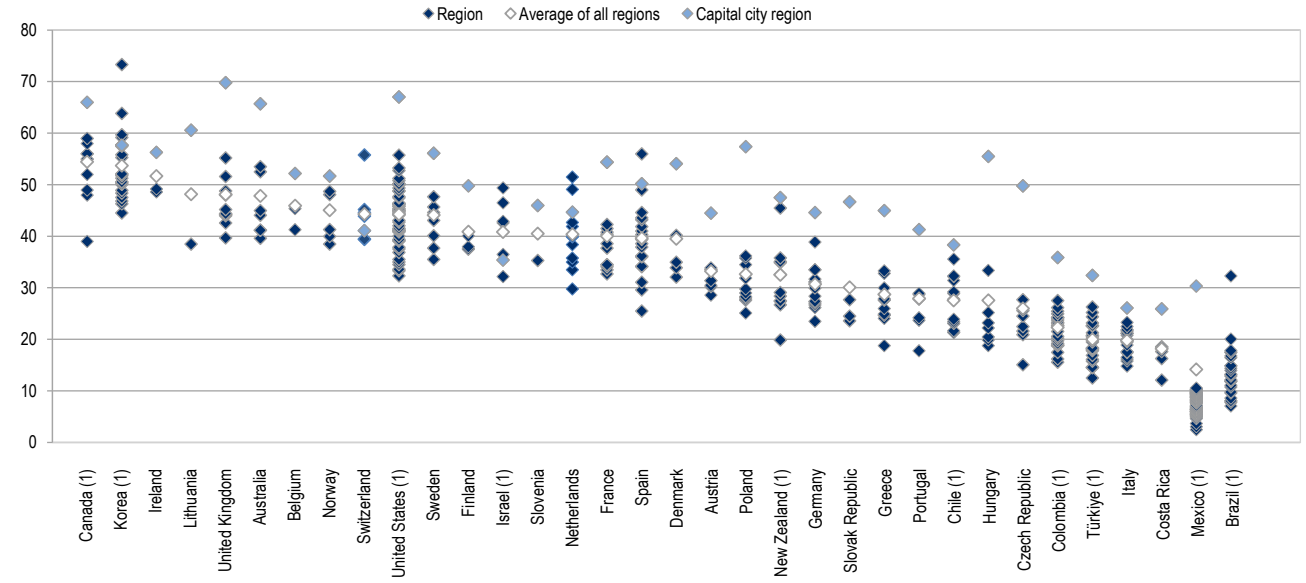
In most OECD countries, tertiary attainment rates vary widely across subnational regions. Among countries with available data, the share of the 25-64 year-olds with tertiary degrees frequently varies by a factor of two across regions. For example, in Spain, the shares range from 25% to 56%, while similar-sized differences exist in many other countries. This diversity within countries has important policy implications. For example, some regions within a country might face shortages of skilled workers, while in other regions workers with the same qualifications are unemployed. It is therefore important to look beyond national averages and develop policies that can adapt to regional contexts (Figure A1.4).

A notable pattern in many countries is exceptionally high tertiary attainment levels in the region that is home to the capital (Figure A1.4). Partly, this is due to the high number of tertiary-educated workers employed in national administrations, which have their seat in the capital regions. More importantly, however, it is because the capital region is often home to the largest city of a country. Urban areas tend to have higher rates of tertiary attainment than rural areas.

Cities have high levels of tertiary attainment for multiple reasons. Urban economies are characterised by a strong knowledge-intensive service sector, which provides job opportunities for tertiary-educated workers (OECD, 2019[3]). Moreover, wage levels in cities are higher than in rural areas even for workers in the same occupation and the differences are especially large for highly educated workers (Combes and Gobillon, 2015[4]). Thus, labour markets provide strong incentives for tertiary-educated workers to move to urban areas. These effects are amplified by the concentration of higher education institutions in cities. Tertiary students often move to cities to study there. After they graduate, many of them stay in the area and thereby contribute to a higher share of tertiary attainment in the region.

Figure A1.4. Percentage of 25-64 year-olds with tertiary attainment, by subnational region (2021)

In per cent



Note: The country average is the unweighted average of the regions for 25-64 year-olds.
1. Year of reference differs from 2021: 2020 for Chile, Colombia, Korea, Mexico, New Zealand and Türkiye ; 2019 for the United States; 2017 for Israel; 2016 for Canada; and 2015 for Brazil.
Countries are ranked in descending order of the country average of the percentage of 25-64 year-olds with tertiary attainment (unweighted average of regions).
Source: OECD INES/CFE Subnational Data Collection (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

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Definitions

Age groups: Adults refer to 25-64 year-olds; **younger adults** refer to 25-34 year-olds; **older adults** refer to 55-64 year-olds.

Educational attainment refers to the highest level of education successfully completed by an individual.

Fields of study are categorised according to the ISCED Fields of education and training (ISCED-F 2013). See the *Reader's Guide* for full listing of the ISCED fields used in this report.

Levels of education: See the *Reader's Guide* at the beginning of this publication for a presentation of all ISCED 2011 levels.

Methodology

Educational attainment profiles are based on annual data on the percentage of the adult population (25-64 year-olds) in specific age groups who have successfully completed a specified level of education.

In OECD statistics, recognised qualifications from ISCED 2011 level 3 programmes that are not of sufficient duration for ISCED 2011 level 3 completion are classified at ISCED 2011 level 2 (see the *Reader's Guide*). Where countries have been able to demonstrate equivalencies in the labour-market value of attainment formally classified as the "completion of intermediate upper secondary programmes" – such as achieving five good General Certificates of Secondary Education (GCSEs) or equivalent in the United Kingdom (note that each GCSE is offered in a specific school subject) – and "full upper

secondary attainment", attainment of these programmes is reported as ISCED 2011 level 3 completion in the tables that show three aggregate levels of educational attainment (UNESCO Institute for Statistics, 2012[5]).

Most OECD countries include people without formal education under the international classification ISCED 2011 level 0. Averages for the category "less than primary educational attainment" are therefore likely to be influenced by this inclusion.

Category totals for fields of study may not be equivalent to the sum of the subcategories because some programmes cannot be classified into a specific subcategory, but are included in the total. In addition, data on humanities (except languages), social sciences, journalism and information refer to the field social of sciences, journalism and information only in Australia, Belgium, Costa Rica, France, Greece, Hungary, Ireland, Luxembourg, Portugal, the Slovak Republic, Spain and the United Kingdom.

Please see the *OECD Handbook for Internationally Comparative Education Statistics* (OECD, 2018[6]) for more information and Annex 3 for country-specific notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

Source

Data on population and educational attainment for most countries are taken from OECD and Eurostat databases, which are compiled from National Labour Force Surveys by the OECD Labour Market, Economic and Social Outcomes of Learning (LSO) Network. Data on educational attainment for China, Indonesia and Saudi Arabia are taken from the International Labour Organization (ILO) database.

Data on subnational regions for selected indicators are available in the OECD *Regional Statistics Database* (OECD, 2022[7]).

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Indicator A1 Tables

Tables Indicator A1. To what level have adults studied?

Table A1.1.	Educational attainment of 25-64 year-olds (2021)
Table A1.2.	Trends in educational attainment of 25-34 year-olds, by gender (2011 and 2021)
Table A1.3.	Fields of study among tertiary-educated 25-64 year-olds (2021)

StatLink https://stat.link/yo13gb

Cut-off date for the data: 17 June 2022. Any updates on data can be found on line at http://dx.doi.org/10.1787/eag-data-en. More breakdowns can also be found at http://stats.oecd.org/, *Education at a Glance Database*.

Table A1.1. Educational attainment of 25-64 year-olds (2021)

Percentage of adults with a given level of education as the highest level attained

		Below upper secondary					Upper secondary or post-secondary non-tertiary		Tertiary				All levels of education
		Less than primary	Primary	Completion of intermediate lower secondary programmes	Lower secondary	Completion of intermediate upper secondary programmes	Upper secondary	Post-secondary non-tertiary	Short-cycle tertiary	Bachelor's or equivalent	Master's or equivalent	Doctoral or equivalent	
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
OECD	Countries												
	Australia	0	4	a	12	a	29	6	11	28	9	2	100
	Austria	x(2)	1[d]	a	13	a	48	3	15	5	14	1	100
	Belgium	3	4	a	12	a	35	2	1	24	19	1	100
	Canada	x(2)	2[d]	a	5	a	21	10	26	24	11[d]	x(10)	100
	Chile[1]	6	4	a	19	a	41	a	10	19	2[d]	x(10)	100
	Colombia	x(4)	x(4)	a	33[d]	5	31[d]	x(6)	x(9)	22[d]	x(9)	x(9)	100
	Costa Rica	11	27	8	8	3	18	0	7	15	3	0	100
	Czech Republic	0	0	a	5	a	68[d]	x(6)	0	7	19	1	100
	Denmark	x(2)	2[d]	a	16	a	40	0	5	21	15	1	100
	Estonia	0	0	a	10	a	39	9	6	14	21	1	100
	Finland	x(2)	2[d]	a	10	a	45	1	8	17	16	1	100
	France	2	3	a	13	a	41	0	14	12	14	1	100
	Germany	x(2)	4	a	10	a	41	13	1	18	11	2	100
	Greece	1	10	a	9	2	34	9	1	25	8	1	100
	Hungary	0	1	a	13	a	50	7	1	14	14	1	100
	Iceland	x(2)	0[d]	a	21	a	29	7	4	22	16	1	100
	Ireland	0	3	a	9	a	18	15	9	29	14	1	100
	Israel	3	3	a	6	a	38	a	11	24	13	1	100
	Italy	1	5	a	32	a	41	2	0	5	14	1	100
	Japan	x(6)	x(6)	a	x(6)	a	44[d]	x(8)	21[d]	34[d]	x(9)	x(9)	100
	Korea	x(2)	3[d]	a	6	a	39	a	14	33	4[d]	x(10)	100
	Latvia	0	0	a	7	3	37	13	4	16	19	0	100
	Lithuania	0	0	0	4	2	29	19	a	30	15	1	100
	Luxembourg	2	6	a	11	a	28	2	4	15	29	2	100
	Mexico	10	15	2	27	4	22	a	1	18	2	0	100
	Netherlands	2	4	a	13	a	37	0	2	24	16	1	100
	New Zealand	x(4)	x(4)	a	19[d]	a	25	15	4	29	6	1	100
	Norway	0	1	0	16	a	34	2	11	21	13	1	100
	Poland	0	1	a	6	a	57	3	0	8	25	1	100
	Portugal	1	21	a	19	a	27	1	0	9	21	1	100
	Slovak Republic	0	1	0	6	0	63	2	0	4	23	1	100
	Slovenia	0	0	a	8	a	51	a	8	9	18	5	100
	Spain	2	5	a	29	a	23	0	12	11	16	1	100
	Sweden	x(2)	3[d]	a	10	3	30	8	10	19	16	2	100
	Switzerland	0	1	a	11	a	42[d]	x(6)	x(9,10,11)	24[d]	18[d]	3[d]	100
	Türkiye	5	35	a	16	a	20	a	7	16	2	0	100
	United Kingdom	c	0	a	18	12	20	a	9	26	13	2	100
	United States	1	2	a	5	a	41[d]	x(6)	11	25	12	2	100
	OECD average	2	5	m	13	m	36	6	7	19	14	1	100
	EU22 average	1	3	m	12	m	40	6	5	15	17	1	100
Partners	Argentina	3	14	m	16	m	42	a	x(9)	23[d]	x(9)	1	100
	Brazil	11	17	a	14	a	38	a	x(9)	20[d]	1	0	100
	China[1]	2	17	a	44	a	18	0	10	8	1[d]	x(10)	100
	India[1]	35	12	a	30	a	8	1	x(9)	9[d]	x(9)	4	100
	Indonesia	11	27	a	19	a	30	a	3	5	5	0	100
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa[1]	10	4	5	6	28	32	m	8	7	1[d]	x(10)	100
	G20 average	m	10	m	16	m	30	m	11	17	9	1	100

Note: Totals might not add up to 100% for the averages because of missing data for some levels for some countries. In most countries data refer to ISCED 2011. For Argentina and India data refer to ISCED-97. See *Definitions* and *Methodology* sections for more information. Data and more breakdowns are available at http://stats.oecd.org/, *Education at a Glance Database*.

1. Year of reference differs from 2021: 2020 for Chile, China, India and South Africa.

Source: OECD/ILO/UIS (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/qj6opr

Table A1.2. Trends in educational attainment of 25-34 year-olds, by gender (2011 and 2021)

Percentage of 25-34 year-olds with a given level of education as the highest level attained

		Below upper secondary						Upper secondary or post-secondary non-tertiary						Tertiary					
		Men		Women		Total		Men		Women		Total		Men		Women		Total	
		2011	2021	2011	2021	2011	2021	2011	2021	2011	2021	2011	2021	2011	2021	2011	2021	2011	2021
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
OECD	Countries																		
	Australia	17[b]	10	14[b]	8	16[b]	9	44[b]	43	35[b]	30	40[b]	37	38[b]	46	51[b]	62	45[b]	54
	Austria	11	11	13	10	12	11	57	51	49	43	53	47	32	38	37	47	35	42
	Belgium	20[b]	14	17[b]	11	18[b]	13	44[b]	42	35[b]	31	39[b]	37	37[b]	44	48[b]	58	42[b]	51
	Canada	9	6	6	4	8	5	43	36	29	21	36	29	48	58	64	75	56	66
	Chile [1]	23[b]	14	23[b]	11	23[b]	12	55[b]	49	54[b]	45	54[b]	47	22[b]	37	23[b]	44	22[b]	41
	Colombia	m	28	m	21	m	25	m	45	m	45	m	45	m	27	m	34	m	31
	Costa Rica	57	49	52	41	54	45	19	24	21	26	20	25	24	28	28	33	26	30
	Czech Republic	5[b]	7	6[b]	7	6[b]	7	73[b]	66	65[b]	49	69[b]	58	22[b]	27	28[b]	43	25[b]	35
	Denmark	23	19	16	13	19	16	46	40	37	29	42	35	31	41	47	58	39	49
	Estonia	18	14	10	9	14	12	52	53	42	37	47	45	30	33	49	54	39	43
	Finland	12	10[b]	7	8[b]	10	9[b]	57	56[b]	44	45[b]	51	51[b]	31	34[b]	48	47[b]	39	40[b]
	France	18	13	15	11	17	12	43	41	37	35	40	38	39	46	47	54	43	50
	Germany	13[b]	15	14[b]	13	13[b]	14	61[b]	50	57[b]	49	59[b]	50	26[b]	34	30[b]	38	28[b]	36
	Greece	28[b]	10	18[b]	7	23[b]	8	44[b]	53	44[b]	42	44[b]	47	28[b]	38	38[b]	51	33[b]	44
	Hungary	13	14	13	13	13	13	65	59	53	48	59	54	23	27	34	39	28	33
	Iceland	31	26	23	13	27	20	40	40	31	36	35	38	29	34	47	51	38	42
	Ireland	18[b]	6	12[b]	4	15[b]	5	42[b]	35	33[b]	28	37[b]	32	40[b]	59	54[b]	67	47[b]	63
	Israel	13[b]	10	8[b]	7	10[b]	9	50[b]	55	40[b]	36	45[b]	45	38[b]	35	52[b]	57	45[b]	46
	Italy	32[b]	26	25[b]	20	29[b]	23	51[b]	52	49[b]	45	50[b]	49	16[b]	22	26[b]	34	21[b]	28
	Japan [2]	m	m	m	m	m	m	x(13)	x(14)	x(15)	x(16)	x(17)	x(18)	55[b, d]	62[d]	63[b, d]	68[d]	59[b, d]	65[d]
	Korea	2[b]	2	2[b]	2	2[b]	2	37[b]	35	31[b]	22	34[b]	29	60[b]	63	67[b]	76	64[b]	69
	Latvia	23	13	11	8	17	11	53	50	43	37	48	44	24	36	46	55	35	46
	Lithuania	13[b]	10	8[b]	4	10[b]	7	48[b]	42	35[b]	28	41[b]	35	40[b]	48	57[b]	68	48[b]	57
	Luxembourg	17[b]	13	16[b]	8	17[b]	10	38[b]	28	35[b]	25	37[b]	27	45[b]	59	49[b]	68	47[b]	63
	Mexico	60	44	60	44	60	44	21	29	21	28	21	29	18	26	19	28	19	27
	Netherlands	21[b]	12	16[b]	9	18[b]	10	44[b]	38	40[b]	31	42[b]	34	36[b]	51	44[b]	60	40[b]	56
	New Zealand	21	15	19	12	20	13	m	44	m	38	m	41	m	41	m	50	m	45
	Norway	18	19	14	15	16	17	42	35	31	21	37	28	39	46	55	65	47	55
	Poland	7[b]	9	5[b]	5	6[b]	7	62[b]	59	48[b]	45	55[b]	52	31[b]	31	47[b]	50	39[b]	41
	Portugal	50	20	38	13	44	17	28	42	29	30	29	36	22	38	32	56	27	47
	Slovak Republic	6[b]	6	6[b]	6	6[b]	6	73[b]	65	64[b]	42	69[b]	54	21[b]	28	31[b]	51	26[b]	39
	Slovenia	9[b]	5	3[b]	3	6[b]	4	67[b]	58	53[b]	36	60[b]	48	24[b]	37	44[b]	61	34[b]	48
	Spain	40	33	29	22	35	28	25	24	26	23	25	24	35	43	46	54	40	49
	Sweden	10[b]	18	8[b]	14	9[b]	16	54[b]	42	42[b]	28	48[b]	35	35[b]	41	51[b]	58	43[b]	49
	Switzerland	11[b]	8[b]	13[b]	8[b]	12[b]	8[b]	50[b]	42[b]	49[b]	37[b]	50[b]	40[b]	38[b]	50[b]	38[b]	54[b]	38[b]	52[b]
	Türkiye	52[b]	35	62[b]	37	57[b]	36	28[b]	27	21[b]	21	25[b]	24	20[b]	38	18[b]	42	19[b]	40
	United Kingdom [3]	16[b]	15	16[b]	9	16[b]	12	39[b]	31	36[b]	30	37[b]	30	45[b]	54	48[b]	61	47[b]	57
	United States	13	7	9	5	11	6	49	47	43	38	46	43	38	46	48	57	43	51
	OECD average	21	16	17	12	19	14	47	44	40	35	44	39	33	41	43	53	38	47
	EU22 average	19	14	14	10	16	12	51	48	44	37	48	42	30	39	42	53	36	46
Partners	Argentina	36	30	29	24	32	27	48	54	47	54	48	54	16	16	24	22	20	19
	Brazil	47[b]	32	40[b]	25	43[b]	29	42[b]	48	46[b]	49	44[b]	48	11[b]	20	15[b]	26	13[b]	23
	China [4]	63	m	66	m	64	m	19	m	16	m	18	m	18	m	18	m	18	m
	India [1]	58	61	70	70	64	66	26	16	18	12	22	14	16	23	12	19	14	21
	Indonesia	57	42	61	43	59	42	34	43	28	36	31	39	9	16	11	22	10	19
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa [1]	44	48	43	44	44	46	49	39	51	39	50	39	7	13	6	17	7	15
	G20 average	34	26	33	24	33	25	40	39	35	34	38	37	28	36	33	44	31	40

Note: Totals might not add up to 100% for the averages because of missing data for some levels for some countries. The code ""b"" in columns for year 2011 represents that data refer to ISCED-97. Data in columns for year 2021 refer to ISCED 2011 for all countries except for Argentina and India. See *Definitions* and *Methodology* sections and Annex 3 for more information. Data and more breakdowns are available at http://stats.oecd.org/, *Education at a Glance Database*.

1. Year of reference differs from 2021: 2020 for Chile, India and South Africa.
2. Data for tertiary education include upper secondary or post-secondary non-tertiary programmes (less than 5% of adults are in this group).
3. Data for upper secondary attainment include completion of a sufficient volume and standard of programmes that would be classified individually as completion of intermediate upper secondary programmes (9% of adults aged 25-34 are in this group).
4. Year of reference differs from 2011: 2010 for China.

Source: OECD/ILO/UIS (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

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Table A1.3. Field of study among tertiary-educated 25-64 year-olds (2021)

Percentage of adults with tertiary attainment

		Education	Arts or humanities, social sciences, journalism and information			Business administration and law			Natural sciences, mathematics and statistics	Information and communication technologies (ICT)	Engineering, manufacturing and construction	Health and welfare			Other fields
			Arts	Humanities (except languages), social sciences, journalism and information	Total	Business and administration	Law	Total				Health (medical and dental)	Health (nursing and associate health fields)	Total	
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
OECD	Countries														
	Australia	10	x(4)	6	15	x(7)	x(7)	30	4	7	12	x(13)	x(13)	17	6
	Austria	11	4	8	14	8	4	24	4	3	26	4	4	9	9
	Belgium	11	x(4)	12	23	x(7)	x(7)	22	5	4	12	x(13)	x(13)	17	5
	Canada	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Chile [1]	16	3	4	8	23	3	26	1	5	20	3	11	17	8
	Colombia	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Costa Rica	20	x(4)	8	11	x(7)	x(7)	36	1	7	12	x(13)	x(13)	9	4
	Czech Republic	16	4	24	23	11	5	0	6	6	21	5	7	16	10
	Denmark	9	3	12	21	12	3	17	5	5	13	x(13)	x(13)	26	5
	Estonia	17	4	8	15	21	4	25	5	4	21	x(13)	x(13)	9	3
	Finland	6	4	8	16	21	2	23	4	7	19	2	10	17	8
	France	5	x(4)	7	17	x(7)	x(7)	33	7	5	14	x(13)	x(13)	14	6
	Germany	13	4	7	13	10	3	23	5	4	25	4	2	9	6
	Greece	7	x(4)	12	26	x(7)	x(7)	17	7	5	14	x(13)	x(13)	12	13
	Hungary	21	x(4)	17	22	x(7)	x(7)	16	3	6	16	x(13)	x(13)	8	8
	Iceland [1]	18	x(4)	x(4)	23	x(7)	x(7)	23	4	4	10	x(13)	x(13)	13	4
	Ireland	9	x(4)	4	10	x(7)	x(7)	26	7	8	10	x(13)	x(13)	12	18
	Israel	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Italy	5	5	15	29	12	10	23	8	2	14	x(13)	x(13)	14	5
	Japan	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Korea	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Latvia	14	3	18	24	21	7	28	3	4	13	5	2	8	6
	Lithuania	9	3	15	20	21	x(7)	27	5	5	19	4	4	9	7
	Luxembourg	10	x(4)	5	18	x(7)	x(7)	37	6	7	10	x(13)	x(13)	8	4
	Mexico	14	3	9	13	25	9	34	3	7	15	5	5	10	4
	Netherlands	11	4	12	18	23	4	28	5	5	12	4	7	16	7
	New Zealand	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Norway	16	2	16	14	14	2	17	8	4	13	m	m	21	8
	Poland	15	1	19	24	17	3	22	6	5	13	x(13)	x(13)	8	8
	Portugal	16	x(4)	11	20	x(7)	x(7)	21	4	3	15	x(13)	x(13)	15	7
	Slovak Republic	16	x(4)	15	20	x(7)	x(7)	13	6	4	18	x(13)	x(13)	14	9
	Slovenia	13	2	13	17	10	4	25	4	3	20	x(13)	x(13)	9	7
	Spain	11	x(4)	5	13	x(7)	x(7)	28	6	6	15	x(13)	x(13)	13	7
	Sweden	15	3	11	16	12	3	16	5	4	20	4	10	19	5
	Switzerland	8	3	7	12	25	3	29	5	5	19	3	9	15	8
	Türkiye [1]	16	x(4)	x(4)	18	x(7)	x(7)	31	5	1	16	x(13)	x(13)	6	7
	United Kingdom	5	x(4)	3	14	x(7)	x(7)	26	2	4	19	x(13)	x(13)	17	13
	United States [1, 2]	10	6	20	30	x(7)	x(7)	21	10	4	10	x(13)	x(13)	9	6
	OECD average	12	m	11	18	m	m	24	5	5	16	m	m	13	7
	EU22 average	12	m	12	19	m	m	22	5	5	16	m	m	13	7
Partners	Argentina	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Brazil	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	China	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	G20 average	m	m	m	m	m	m	m	m	m	m	m	m	m	m

Note: Category totals may not be equivalent to the sum of the subcategories because some programmes cannot be classified into a specific subcategory but are included in the total. In addition, data on humanities (except languages), social sciences, journalism and information might refer to the broad field social sciences, journalism and information only. See *Definitions* and *Methodology* sections for more information.

1. Year of reference differs from 2021: 2017 for Chile and the United States, 2016 for Iceland and Türkiye.

2. Data refer to bachelor's degree field, even for those with additional tertiary degrees.

Source: OECD/ILO/UIS (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

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Indicator A2. Transition from education to work: Where are today's youth?

Highlights

- Slightly over half of 18-24 year-olds across OECD countries were still in education or training as of the first quarter of 2021. Around one-third of these students combine their education or training with some form of employment. In a few countries (e.g. Germany and Switzerland) employment tends to be linked to the study programme, while in most others these jobs are mostly unconnected to the curriculum.
- Young people who did not complete upper secondary education face a high risk of finding themselves neither employed, nor in formal education or training (NEET). As of the first quarter of 2021, the share of NEETs was nearly four times as high among 25-29 year-olds without an upper secondary qualification as among their tertiary-educated peers. However, in some countries NEET rates are high even among tertiary graduates: over 30% of tertiary graduates in Greece and South Africa are NEET. In contrast, there are some countries where those without a tertiary qualification fare well: the share of NEETs is 10% or less among upper secondary or post-secondary non-tertiary graduates in Denmark, the Netherlands and Sweden.
- Annual data, which are more suitable for comparing outcomes during the COVID-19 pandemic, suggest the share of young adults who are NEET has returned to, or fallen below, pre-COVID levels in about a two-thirds of OECD countries. In 2021, almost 15% of 18-24 year-olds were NEET.

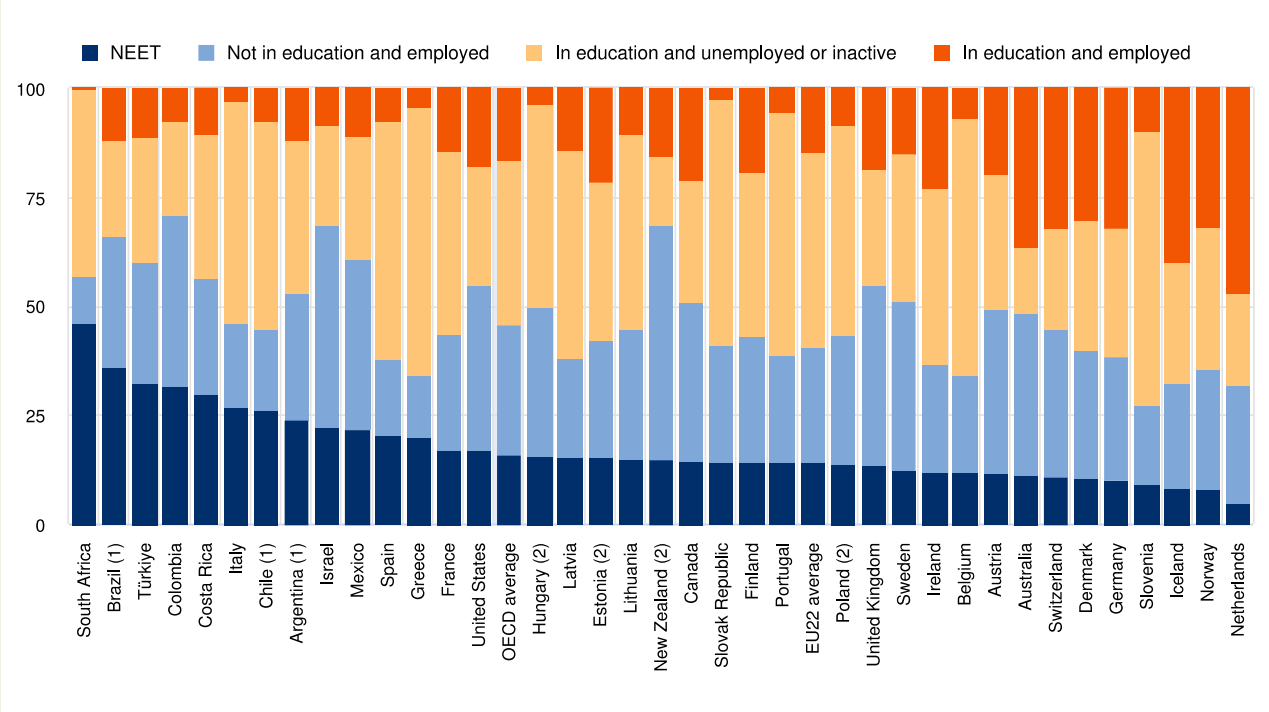
Context

The length and the quality of the schooling that individuals receive both have an impact on their transition from education to work, as do labour-market conditions, the economic environment and the cultural context. In some countries, young people traditionally complete education before they look for work, while in others, education and employment are concurrent. In some countries, there is little difference between how young women and young men experience the transition from education to work, while in others significant proportions of young women are not in the labour force (OECD, 2022[1]). When labour-market conditions are unfavourable, young people have an incentive to stay in education longer, because high unemployment rates drive down the opportunity costs of education, and they can develop their skills for when the situation improves.To improve the transition from education to work, regardless of the economic climate, education systems should aim to ensure that individuals have the skills the labour market needs. Public investment in education can be a sensible way to counterbalance unemployment and invest in future economic growth, by building the necessary skills. Public support could also be directed towards potential employers, through the creation of incentives to hire young people.

Not having a job can have long-lasting consequences, especially when people experience long spells of unemployment or inactivity and become discouraged. Young people who are NEET are a major policy concern, as it has a negative impact on their labour-market prospects and social outcomes, including in the long term. It is therefore essential to have policy measures to prevent young people becoming NEET in the first place, and to help those who are to find a way back into education or work.

Figure A2.1. Distribution of 18-24 year-olds by education and work status (2021, quarterly data)

In per cent



Note: NEET refers to young people who are neither in employed nor in formal education or training.
1. Year of reference differs from 2021. Refer to the source table for more details.
2. Data refer to a longer period than a quarter. Refer to the source table for more details.
Countries are ranked in descending order of the share of 18-24 year-old NEETs.
Source: OECD (2022), Table A2.1. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

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Other findings

- Brazil, Greece, Italy and South Africa have the highest share of young people suffering long-term unemployment: around 5% or more of 18-24 year-olds in these countries were not in education and had been unemployed for at least 12 months in the first quarter of 2021. This leaves them particularly at risk of long-term detachment from the labour market.
- The share of inactive NEET youth has been relatively stable over the past 15 years, while the share of unemployed NEET youth has varied with the economic cycle. Following the economic crisis of 2008 the share of unemployed NEET youth peaked in the first quarter of 2013 at 9.6% of 25-29 year-olds across OECD countries with available trend data. Unemployment among young adults then started to fall, until the new shock created by the COVID-19 pandemic.
- In some countries there are large regional disparities in the share of NEET youth: in four countries the gap between the regions with the highest and lowest shares of NEET 18-24 year-olds exceeds 20 percentage points. This highlights the importance of education and labour-market policies that are tailored to local contexts.

Note

This indicator analyses the situation of young people in transition from education to work: those in education, those who are employed, and those who are neither employed nor in formal education or training (NEET). The NEET group includes not only those who have not managed to find a job (unemployed NEETs), but also those who are not actively seeking employment (inactive NEETs). The analysis distinguishes between 18-24 year-olds and 25-29 year-olds, as a significant proportion of those in the younger age group will still be continuing their studies even though they are no longer in compulsory education.

The analysis in this indicator is based on quarterly data, except for the section on the impact of COVID-19. For more information on the reference periods, refer to the *Methodology* section and Annex 3.

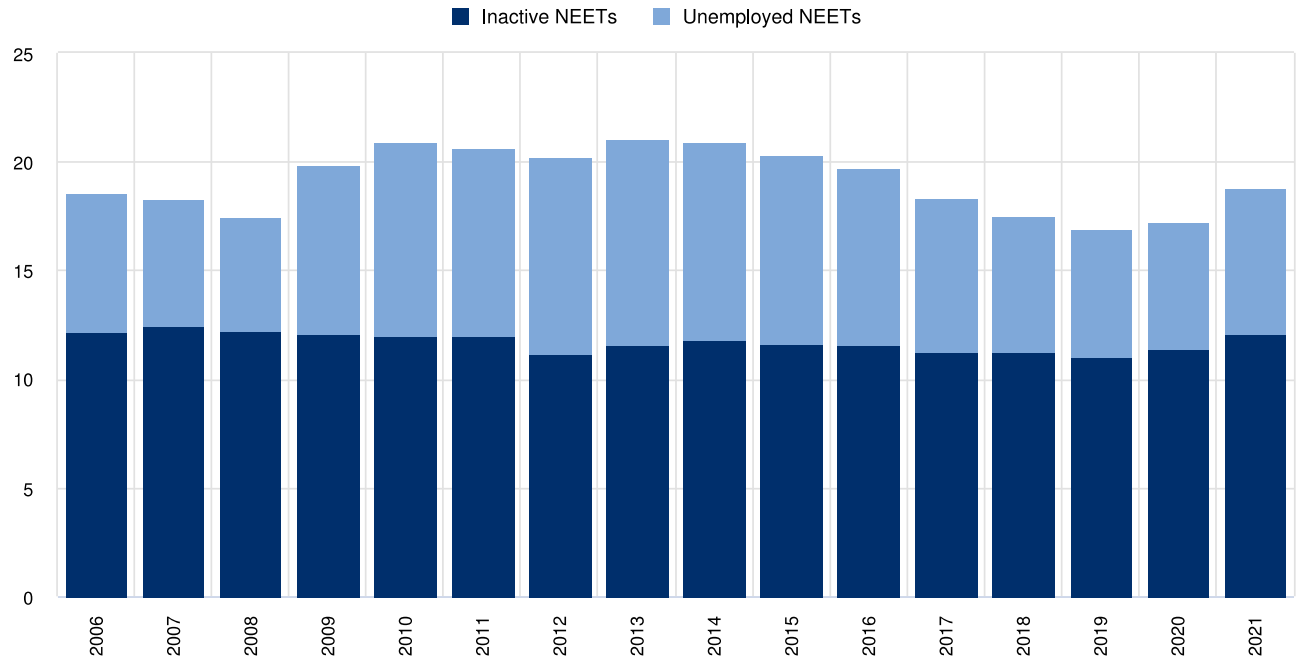
Analysis

Educational and labour-market status of youth

Across OECD countries, a little over half of 18-24 year-olds are still in formal education, either full- or part-time. Almost one-third of these students are also pursuing some form of employment (Figure A2.1). In some cases, students' jobs are connected to their study programme, allowing them to gain relevant work experience, develop technical skills and connect with potential employers. Programmes that involve paid work as part of the curriculum (referred to as "work-study programmes" in Table A2.1) are particularly common in Germany and Switzerland, where many professional qualifications follow an upper secondary vocational qualification and are pursued in parallel with employment in the relevant sector (OECD, 2022[2]). In Australia and Norway, working while studying is common among 18-24 year-olds, but their employment is typically not connected to the programme (e.g. a student job in a restaurant). In Iceland, the Netherlands and New Zealand students also commonly combine work and study, but the data do not distinguish between work-study programmes and other types of employment (Table A2.1). Even where it is not part of the curriculum, such employment may still be valuable in developing broad employability skills, like team work and conflict management, thereby facilitating the transition into employment. Data from the European Labour Force Survey (EU-LFS) show that tertiary graduates who pursued work experience outside the curriculum during their studies had higher employment rates than those who gained no work experience while studying (OECD, 2022[2]).

Figure A2.2. Trends in the share of NEETs among 25-29 year-olds, by labour-market status (2006 to 2021, quarterly data)

In per cent; OECD average



Note: NEET refers to young people who are neither employed nor in formal education or training. The sum of inactive and unemployed NEETs corresponds to the total share of NEETs. Because of lack of data for many years, the following countries are excluded from the OECD average: Chile, Colombia, Costa Rica, Lithuania, Luxembourg, Switzerland and the United States.
Source: OECD (2022), *Education at a Glance Database*, http://stats.oecd.org/. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

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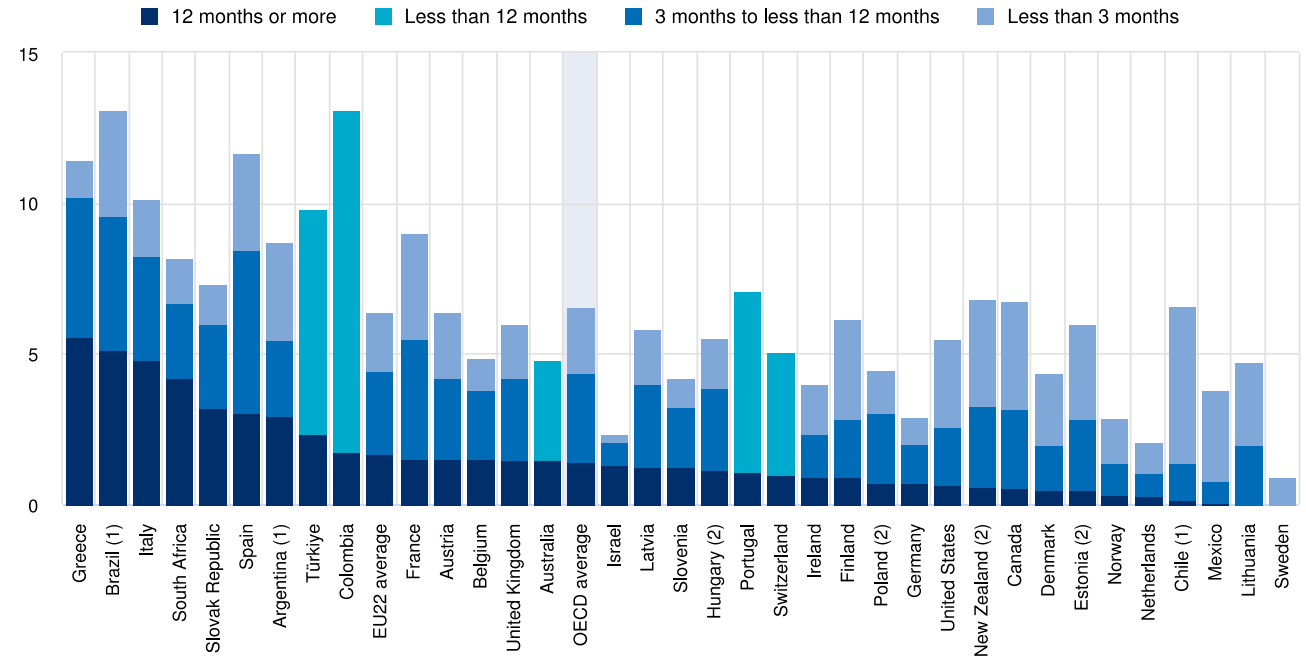
The share of young people neither employed nor in formal education or training (NEET) is a key indicator of the ease of transition from education to the labour market. Across OECD countries about 16.1% of 18-24 year-olds are NEET, while in Chile, Colombia, Costa Rica, Italy and the Republic of Türkiye, the share is over 25% (Figure A2.1). Preventing youth from becoming NEET and minimising the time spent without employment, education or training is essential. Youth who are NEET not only miss out on immediate learning and employment opportunities, they also suffer from long-term effects. NEET status has been associated with various adverse outcomes, such as lower employment rates and lower earnings later in life (Helbling and Sacchi, 2014[3]; Möller and Umkehrer, 2014[4]; Ralston et al., 2021[5]), poor mental health (Basta et al., 2019[6]) and social exclusion (Bäckman and Nilsson, 2016[7]).

Looking at the share of both inactive and unemployed NEETs among 25-29 year-olds helps to capture the labour-market transition of young people who pursued tertiary education, as 18-24 year-olds who are pursuing tertiary studies are mostly still in education. It is important to interpret data on NEET rates and the share of unemployed NEET youth in the context of unemployment rates in the country's total labour force (see Indicator A3). The share of young people who are unemployed NEETs tends to be higher in countries with higher unemployment rates in the total labour force. Over the past 15 years, the share of inactive youth has been almost stable, while the share of unemployed youth appears to fluctuate with the business cycle. During the economic crisis of 2008 the share of unemployed NEETs increased, reaching a maximum of 9.6% of 25-29 year-olds in 2013 on average across OECD countries with available trend data. It took almost a decade for this rate to return to pre-crisis levels (Figure A2.2). The impact of the Great Recession had just subsided, when the COVID-19 pandemic produced another shock to labour markets. However, data for 2021 refer to the first quarter for most countries and therefore do not yet capture the impact of the COVID-19 pandemic (see the last section for an analysis of the impact of the pandemic on NEET rates).

Figure A2.3. Percentage of 18-24 year-olds who are unemployed and not in education, by duration of unemployment (2021, quarterly data)

As a percentage of all 18-24 year-olds



Note: The distribution by duration of unemployment may not add up to the share of unemployed 18-24 year-olds because of missing data. The share of unemployed 18-24 year-olds not in education who have been unemployed for less than 12 months is used for countries without breakdown by duration of unemployment within this category.
1. Year of reference differs from 2021. Refer to the source table for more details.
2. Data refer to a longer period than a quarter. Refer to the source table for more details.
Countries are ranked in descending order of the share of 18-24 year-olds not in education who have been unemployed for 12 months or more.
Source: OECD (2022), Table A2.2. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

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Long-term NEET rates

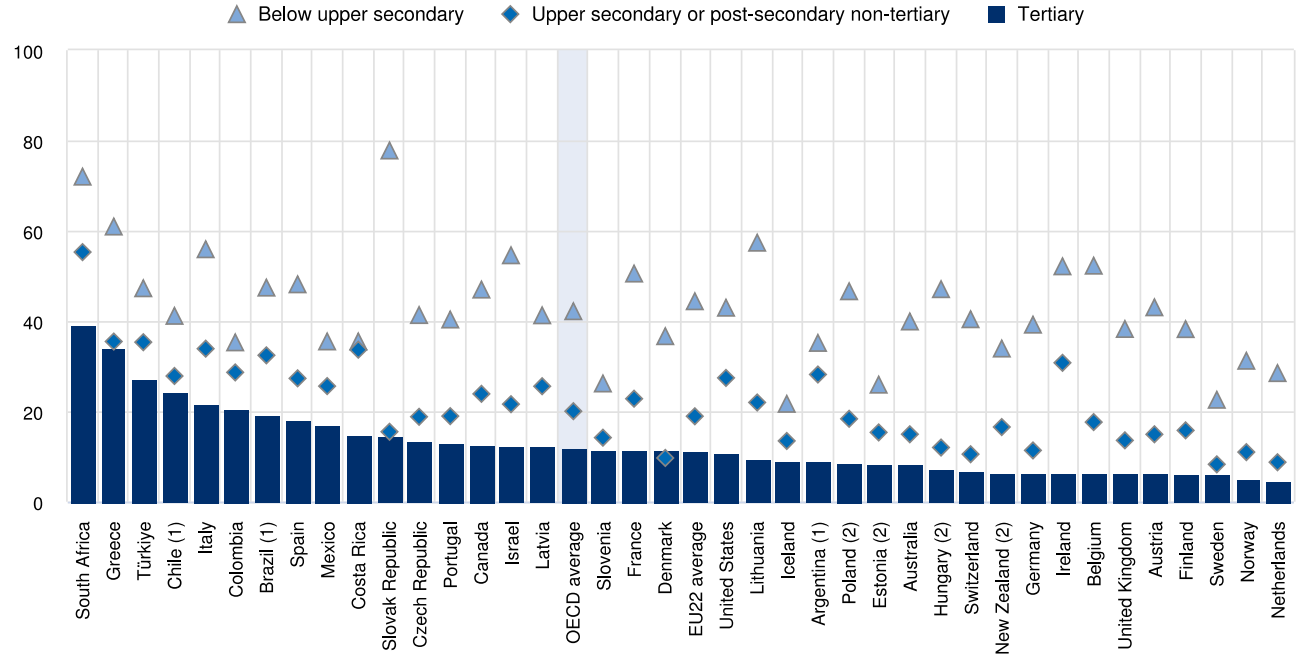
The time young people spend as NEET matters. Some frictional unemployment is natural and to some extent inevitable: when young school leavers and graduates start searching for a job, it may take them some time to find a suitable one. Some young workers will want to switch jobs, which may also involve a period of unemployment. Longer spells spent as a NEET, however, reveal difficulties with the transition from education into work. Long-term unemployment can lead to financial hardship, forcing young people to accept jobs that may not match their skills. It may also have a scarring effect on their future employment prospects (OECD, 2021[8]). The share of NEET youth who have been unemployed for 12 months or more is particularly high in Brazil, Greece, Italy and South Africa, at around 5% of more of all 18-24 year-olds. In Argentina, the Slovak Republic and Spain the figure is also relatively high, around 3%, while the OECD average is around 1.4% (Figure A2.3). The share of youth who have been unemployed for at least 12 months provides a lower-bound estimate for those at risk of long-term detachment from the labour market: in addition to long-term unemployed NEETs there are also those who are inactive (i.e. neither working nor actively seeking employment). On average across OECD countries with data available on the duration of unemployment and inactivity, there are more inactive NEETs (9.4% of 18-24 year-olds) than unemployed ones (6.4%) (Table A2.2).

The impact of educational attainment on the risk of becoming NEET

Given the poor economic and social prospects associated with being NEET as a young person, prevention is a key policy objective. Raising educational attainment while maintaining high quality standard, is a powerful tool to achieve this. There is a strong association between educational attainment and NEET status. Young people who failed to complete upper secondary education face the highest risk of being NEET. On average across OECD countries, 42.2% of 25-29 year-olds without an upper secondary qualification are NEET. In some countries the figure is much higher: 77.8% in the Slovak Republic and 60.9% in Greece. Achieving an upper secondary or post-secondary non-tertiary qualification is associated with a much lower risk of being NEET (20.0% on average across OECD countries) (Figure A2.4). Ensuring that all young people complete at least upper secondary education is therefore an essential part of preventing them from becoming NEET.

Figure A2.4. Share of NEETs among 25-29 year-olds, by educational attainment (2021, quarterly data)

In per cent



Note: NEET refers to young people who are neither employed nor in formal education or training.
1. Year of reference differs from 2021. Refer to the source table for more details.
2. Data refer to a longer period than a quarter. Refer to the source table for more details.
Countries are ranked in descending order of the share of NEETs among all tertiary-educated 25-29 year-olds.
Source: OECD (2022), Table A2.3. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

StatLink https://stat.link/5oenku

NEET rates are even lower among tertiary graduates, averaging 12.1% across OECD countries. Among OECD countries, obtaining a tertiary qualification reduces the risk of being NEET most strongly in Costa Rica, Ireland and the United States. However, in some countries a tertiary qualification offers more limited protection. In Greece and the Slovak Republic tertiary graduates face nearly as high a risk of being NEET as those holding only an upper secondary or post-secondary non-tertiary qualification (Figure A2.4). High NEET rates among tertiary graduates may reflect various factors, such as a weak economy, a mismatch between the skills of graduates and labour-market needs, and the fact that tertiary graduates, having studied longer, may be willing to take longer to find a suitable job. Denmark is an exception in that NEET rates are higher among tertiary graduates than among those with an upper secondary or post-secondary non-tertiary qualification, but NEET rates are relatively low in both groups. Denmark is one of the few countries, together with the Netherlands and Sweden, where NEET rates are below 10% among 25-29 year-olds with upper secondary or post-secondary non-tertiary attainment (Figure A2.4).

Subnational variations in NEET rates

Within individual countries, there is often much regional variation in the share of young people who are NEET. In some regions a very high share of young adults are NEET. Since the definition of NEET used by the EU-LFS for subnational data collection is different from the one used by other surveys (see *Methodology* section), the analysis in this section focuses on the variations by subnational region within countries.

Regional disparities in the share of NEET youth are strongest in Colombia, Greece, Italy and Türkiye. In these countries the gap between the region with the highest share of 18-24 year-old NEETs and the region with the lowest share exceeds 20 percentage points. Regional disparities are smallest in Denmark, the Netherlands, Norway and Slovenia where the gap between the highest and lowest regions is below 5 percentage points (OECD, 2022[9]).

It should be noted that in the dataset the number of regions per country varies. In general, the countries with more regions in the dataset have larger gaps between the regions with the highest and lowest shares of NEET youth. However, such aggregation choices are not the only drivers of the results. For example, among the 9 OECD and partner countries that report 8-13 large regions, the size of the gap ranges from 4 percentage points in the Netherlands to 25 percentage points in Greece (OECD, 2022[10]).

Impact of COVID-19: Insights from annual data

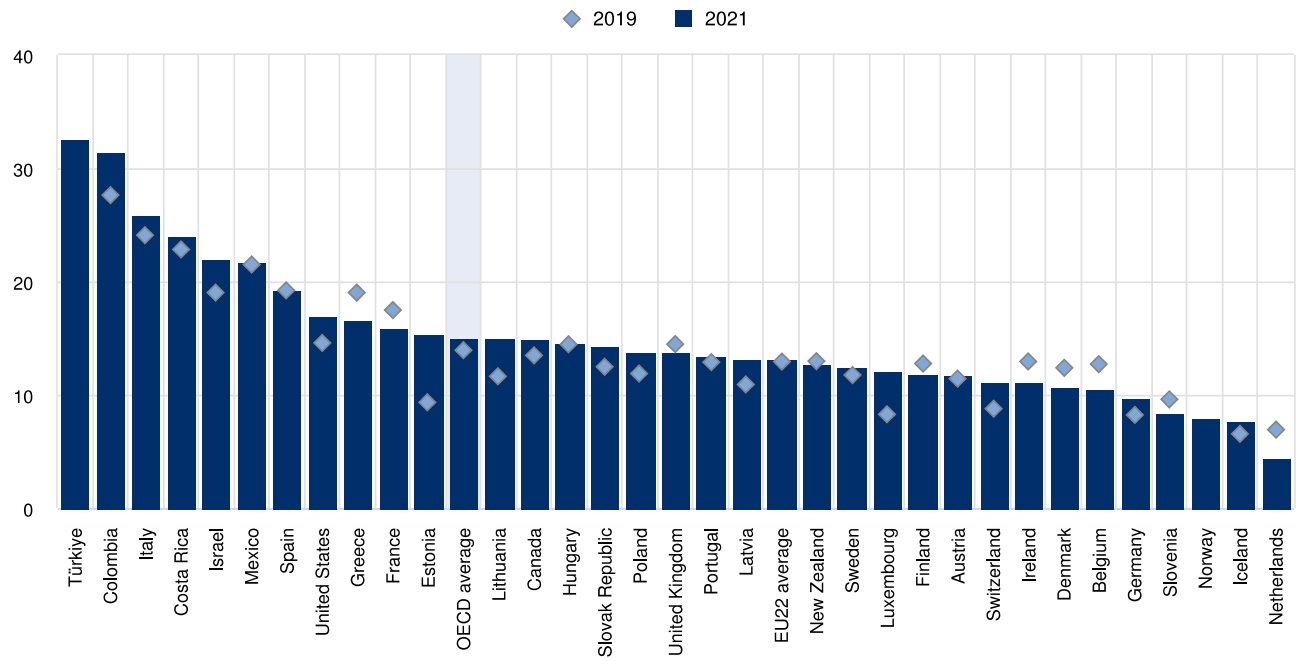
The initial impact of the COVID-19 pandemic affected large parts of OECD countries' economies, as severe restrictions reduced economic activity across the board. As measures became more targeted, many returned to work, but labour-market conditions remain difficult, particularly for young people. The COVID-19 crisis has hit youth, as well as other vulnerable groups in the labour market, particularly hard. Recessions always affect young people more than prime-age workers (i.e. those aged 25-54): they are less experienced and as the last in, they are often the first out. In addition, lockdown and social distancing measures have strongly affected sectors that commonly employ young people, such as hospitality. Among those who continued to work, adults under 25 saw their working hours fall much faster than those aged 25 or more. Those who had recently finished their studies have struggled to find a job. It was also hard for those seeking an internship or other type of work placement to find places, depriving many young people of a potential bridge into a first job (OECD, 2021[8]).

Figure A2.5 uses annual data on NEET rates among 18-24 year-olds over the past three years. Annual data do not capture potential fluctuations that may occur within a year, whether as a result of the pandemic or due to other factors. However, they are more suitable for comparative analysis than the quarterly data used in the other figures here. Quarterly data have been strongly shaped by waves of the COVID-19 pandemic, which have evolved at different times and paces across countries, making comparisons difficult.

On average across OECD countries, the share of 18-24 year-olds who were NEET increased from 14.6% in 2019 to 16.6% in 2020, before starting to fall in 2021. NEET rates have returned to pre-pandemic levels in most OECD countries and the average share of NEET youth across OECD countries in 2021 only exceeded 2019 levels by about 1 percentage point. In 11 OECD countries, the share of NEET youth was even lower in 2021 than in 2019 (Figure A2.5 and Table A2.4). These results are consistent with other analyses on youth employment (OECD, 2021[8]), which suggest government measures have been effective in supporting young people back into education, training or employment, thereby minimising the long-term damage that the pandemic might have caused to labour-market outcomes.

Figure A2.5. Trends in the percentage of NEETs among 18-24 year-olds (2019 and 2021, annual data)

In per cent



Note: NEET refers to young people who are neither employed nor in formal education or training.
Countries are ranked in descending order of the share of 18-24 year-old NEETs in 2021.
Source: OECD (2022), Table A2.4. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

StatLink https://stat.link/gqe2bd

Definitions

Educational attainment refers to the highest level of education successfully completed by an individual.

Employed, inactive and unemployed individuals: See *Definitions* section in Indicator A3.

Individuals in education are those who are receiving formal education and/or training.

Levels of education: See the *Reader's Guide* at the beginning of this publication for a presentation of all ISCED 2011 levels.

NEET refers to young people neither employed nor in formal education or training. However, the definition of NEET is different for subnational data collection for countries taking part in the EU-LFS, where young adults who are in non-formal education or training are not considered to be NEET.

Work-study programmes are formal education/training programmes combining interrelated study and work periods, for which the student/trainee receives pay.

Methodology

Data from the national labour force surveys usually refer to the second quarter of studies, as this is the most relevant period for knowing if the young person is really studying or has left education for the labour force. This second quarter corresponds

in most countries to the first three months of the calendar year (i.e. January, February and March), but in some countries to the second three months (i.e. April, May and June).

In Table A2.2, the share of young adults who have been unemployed for at least 3 months but less than 12 months refer to the share of those who have been unemployed for less than 12 months in Australia, Colombia, Portugal, Switzerland and Türkiye.

The last section in this indicator, on the impact of the COVID-19 pandemic, uses annual data from national labour force surveys (LFS) for reference years 2019, 2020 and 2021.

Annual data may underestimate the number of students, as the data include summer months when many students are not enrolled and not counted as students in data collections. This issue arises, for example, in the United States.

Education or training corresponds to formal education or training; therefore, someone not working but following non-formal studies is considered NEET. However, the definition of NEET is different for subnational data collection for countries taking part in the EU-LFS, where young adults who are in non-formal education or training are not considered to be NEET. For OECD EU countries, NEET rates by subnational region are therefore not comparable to the rates at national level presented in this indicator.

Please see the *OECD Handbook for Internationally Comparative Education Statistics 2018* (OECD, 2018[11]) for more information and Annex 3 for country-specific notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

Source

For information on the sources, see Indicator A1.

Data on subnational regions for selected indicators are available in the *OECD Regional Statistics Database* (OECD, 2022[9]).

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Indicator A2 tables

Tables Indicator A2. Transition from education to work: Where are today's youth?

Table A2.1	Percentage of 18-24 year-olds in education/not in education, by work status (2021, quarterly data)
Table A2.2	Percentage of 18-24 year-olds in education/not in education, by work status and duration of unemployment (2021, quarterly data)
Table A2.3	Percentage of 25-29 year-olds in education/not in education, by educational attainment and work status (2021, quarterly data)
Table A2.4	Trends in the percentage of young adults in education/not in education, by age group and work status (2019-2021, annual data)

StatLink https://stat.link/s0x73z

Cut-off date for the data: 17 June 2022. Any updates on data can be found on line at: http://dx.doi.org/10.1787/eag-data-en. More breakdowns can also be found at: http://stats.oecd.org, *Education at a Glance Database*.

Table A2.1. Percentage of 18-24 year-olds in education/not in education, by work status (2021, quarterly data)

		In education						Not in education					
		Employed							NEET				
		Students in work-study programmes	Other employed	Total	Unemployed	Inactive	Total	Employed	Unemployed	Inactive	Total	Total	Total
		(1)	(2)	(3) = (1) + (2)	(4)	(5)	(6) = (3) + (4) + (5)	(7)	(8)	(9)	(10) = (8) + (9)	(11) = (7) + (10)	(12) = (6) + (11)
OECD	Countries												
	Australia	5	31	36	2.9	13	52	37	4.5	6.8	11.3	48	100
	Austria	9	11	20	2.3	28	50	38	6.4	5.2	11.6	50	100
	Belgium	1	6	7	1.8	57	66	22	5.1	6.9	12.0	34	100
	Canada	x(2)	21[d]	21	3.8	24	49	36	7.0	7.7	14.7	51	100
	Chile [1]	x(2)	8[d]	8	3.0	45	55	19	8.0	18.2	26.1	45	100
	Colombia	a	8	8	3.0	18	29	39	13.1	18.4	31.5	71	100
	Costa Rica	a	11	11	12.9	20	44	27	15.7	14.0	29.7	56	100
	Czech Republic	m	m	m	m	m	m	m	m	m	m	m	m
	Denmark	x(2)	30[d]	30	4.6	25	60	30	4.3	6.2	10.5	40	100
	Estonia [2]	c	21	21	2.9	34	58	27	6.0	9.3	15.3	42	100
	Finland	x(2)	19[d]	19	5.2	33	57	29	6.9	7.4	14.3	43	100
	France	7	8	14	1.8	40	56	26	9.0	8.1	17.1	44	100
	Germany	15	17	32	1.9	28	62	28	3.0	7.1	10.0	38	100
	Greece	a	4	4	2.4	59	66	14	11.7	8.2	19.9	34	100
	Hungary [2]	0	3	4	0.3	46	50	34	5.5	10.0	15.5	50	100
	Iceland	a	40	40	4.5	23	68	24	4.8	3.6	8.4	32	100
	Ireland	a	23	23	3.3	37	63	25	5.1	7.0	12.1	37	100
	Israel	x(2)	8[d]	8	0.8	22	31	47	3.3	18.8	22.1	69	100
	Italy	a	3	3	1.0	50	54	19	10.4	16.7	27.1	46	100
	Japan	m	m	m	m	m	m	m	m	m	m	m	m
	Korea	m	m	m	m	m	m	m	m	m	m	m	m
	Latvia	a	14	14	1.3	46	62	23	5.8	9.5	15.3	38	100
	Lithuania	1	10	11	1.0	44	55	30	7.7	7.3	15.0	45	100
	Luxembourg	a	13	13	c	50	66	26	c	c	c	34	100
	Mexico	a	11	11	0.8	28	39	39	4.0	17.7	21.7	61	100
	Netherlands	x(2)	47[d]	47	5.6	16	68	27	2.1	2.5	4.6	32	100
	New Zealand [2]	a	16	16	2.5	13	31	54	6.9	7.8	14.7	69	100
	Norway	2	30	32	4.3	28	64	28	3.0	5.2	8.1	36	100
	Poland [2]	a	8	8	0.8	47	57	30	4.4	9.4	13.8	43	100
	Portugal	a	5	5	2.3	53	61	25	7.1	7.2	14.3	39	100
	Slovak Republic	c	2	2	c	56	59	27	7.3	7.0	14.3	41	100
	Slovenia	x(2)	10[d]	10	1.1	62	73	18	4.2	5.0	9.2	27	100
	Spain	x(2)	8[d]	8	4.2	50	62	18	11.7	8.6	20.3	38	100
	Sweden	a	15	15	7.6	26	49	39	6.0	6.4	12.4	51	100
	Switzerland	16	16	32	1.7	21	55	34	4.9	5.9	10.8	45	100
	Türkiye	a	11	11	3.8	25	40	28	9.8	22.5	32.2	60	100
	United Kingdom	5	14	19	1.9	25	45	42	6.0	7.4	13.4	55	100
	United States	x(2)	18[d]	18	1.6	26	45	38	5.5	11.5	17.0	55	100
	OECD average	m	15	17	3.0	35	54	30	6.7	9.4	16.1	46	100
	EU22 average	m	13	15	2.7	42	60	26	6.5	7.7	14.2	40	100
Partners	Argentina [1]	a	12	12	4.3	31	47	29	8.8	15	24.1	53	100
	Brazil [1]	a	12	12	4.7	17	34	30	13.1	23	35.9	66	100
	China	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa	a	1	1	0.8	42	43	11	20.0	26	46.2	57	100
	G20 average	m	m	m	m	m	m	m	m	m	m	m	m

Note: NEET refers to young people who are neither employed nor in formal education or training. Data usually refer to the second quarter of studies, which corresponds in most countries to the first three months of the calendar year, but in some countries, to the second three months. See *Definitions* and *Methodology* sections for more information. Data and more breakdowns are available at http://stats.oecd.org/, *Education at a Glance Database*.

1. Reference year differs from 2021: 2020 for Brazil and Chile; 2018 for Argentina.

2. Data refer to the annual average for Estonia, Hungary and Poland; data refer to the average of March to December 2021 for New Zealand.

Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/2ax4py

Table A2.2. Percentage of 18-24 year-olds in education/not in education, by work status and duration of unemployment (2021, quarterly data)

			Not in education						
				Unemployed					
		In education	Employed	Less than 3 months	3 months to less than 12 months	12 months or more	Total	Inactive	Total
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
OECD	Countries								
	Australia	52	37	x(4)	3.3[d]	1.5	4.5	6.8	48
	Austria	50	38	2.2	2.7	1.5	6.4	5.2	50
	Belgium	66	22	1.1	2.3	1.5	5.1	6.9	34
	Canada	49	36	3.6	2.6	0.6	7.0	7.7	51
	Chile [1]	50	28	5.2	1.2	0.2	6.6	15.3	50
	Colombia	29	39	x(4)	11.4[d]	1.8	13.1	18.4	71
	Costa Rica	m	m	m	m	m	m	m	m
	Czech Republic	m	m	m	m	m	m	m	m
	Denmark	60	30	2.4	1.5	0.5	4.3	6.2	40
	Estonia [2]	58	27	3.1	2.4	0.5	6.0	9.3	42
	Finland	57	29	3.3	1.9	1.0	6.9	7.4	43
	France	56	26	3.5	4.0	1.5	9.0	8.1	44
	Germany	62	28	0.9	1.3	0.7	3.0	7.1	38
	Greece	66	14	1.3	4.6	5.6	11.7	8.2	34
	Hungary [2]	50	34	1.6	2.7	1.1	5.5	10.0	50
	Iceland	m	m	m	m	m	m	m	m
	Ireland	63	25	1.6	1.4	1.0	5.1	7.0	37
	Israel	31	47	0.3	0.8	1.3	3.3	18.8	69
	Italy	54	19	1.9	3.4	4.8	10.4	16.7	46
	Japan	m	m	m	m	m	m	m	m
	Korea	m	m	m	m	m	m	m	m
	Latvia	62	23	1.8	2.7	1.3	5.8	9.5	38
	Lithuania	55	30	2.8	2.0	c	7.7	7.3	45
	Luxembourg	m	m	m	m	m	m	m	m
	Mexico	39	39	3.1	0.7	0.1	4.0	17.7	61
	Netherlands	68	27	1.0	0.8	0.3	2.1	2.5	32
	New Zealand [2]	31	54	3.5	2.7	0.6	6.9	7.8	69
	Norway	64	28	1.6	1.0	0.3	3.0	5.2	36
	Poland [2]	57	30	1.4	2.3	0.7	4.4	9.4	43
	Portugal	61	25	x(4)	6.0[d]	1.1	7.1	7.2	39
	Slovak Republic	59	27	1.3	2.8	3.2	7.3	7.0	41
	Slovenia	73	18	1.0	2.0	1.2	4.2	5.0	27
	Spain	62	18	3.3	5.4	3.1	11.7	8.6	38
	Sweden	49	39	0.9	c	c	6.0	6.4	51
	Switzerland	55	34	x(4)	4.0[d]	1.0	4.9	5.9	45
	Türkiye	40	28	x(4)	7.5[d]	2.3	9.8	22.5	60
	United Kingdom	45	42	1.8	2.7	1.5	6.0	7.4	55
	United States	45	38	3.0	1.9	0.6	5.5	11.5	55
	OECD average	54	31	2.2	3.0	1.4	6.4	9.4	46
	EU22 average	59	26	1.9	2.7	1.7	6.5	7.7	41
Partners	Argentina [1]	47	29	3.3	2.5	3.0	8.8	15.3	53
	Brazil [1]	32	38	3.5	4.5	5.1	13.0	17.9	68
	China	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m
	South Africa	43	11	1.5	2.5	4.2	20.0	26.2	57
	G20 average	m	m	m	m	m	m	m	m

Note: The figures by the duration of unemployment may not add up to the total share for the unemployed because of missing data. Data usually refer to the second quarter of studies, which corresponds in most countries to the first three months of the calendar year, but in some countries, to the second three months. See *Definitions* and *Methodology* sections for more information. Data and more breakdowns are available at http://stats.oecd.org/, *Education at a Glance Database*.

1. Year of reference differs from 2021: 2018 for Argentina and Brazil; and 2017 for Chile.

2. Data refer to the annual average for Estonia, Hungary and Poland; data refer to the average of March to December 2021 for New Zealand.

Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

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Table A2.3. Percentage of 25-29 year-olds in education/not in education, by educational attainment and work status (2021, quarterly data)

		Below upper secondary						Upper secondary or post-secondary non-tertiary						Tertiary					
			Not in education						Not in education						Not in education				
				NEET						NEET						NEET			
		In education	Employed	Unemployed	Inactive	Total	Total	In education	Employed	Unemployed	Inactive	Total	Total	In education	Employed	Unemployed	Inactive	Total	Total
		(1)	(2)	(3)	(4)	(5) = (3) + (4)	(6) = (2) + (5)	(7)	(8)	(9)	(10)	(11) = (9) + (10)	(12) = (8) + (11)	(13)	(14)	(15)	(16)	(17) = (15) + (16)	(18) = (14) + (17)
OECD	**Countries**																		
	Australia	8	52	8.0	31.9	39.9	92	20	65	3.4	11.5	14.9	80	21	71	2.9	5.3	8.2	79
	Austria	4	53	16.5	26.5	43.0	96	14	71	7.4	7.5	14.9	86	28	65	3.2	3.2	6.4	72
	Belgium	7	41	17.0	35.2	52.3	93	14	69	7.9	9.8	17.6	86	13	81	3.2	3.3	6.5	87
	Canada	3	50	9.8	37.1	47.0	97	11	65	9.1	14.8	23.9	89	13	74	6.0	6.6	12.6	87
	Chile [1]	13	46	11.7	29.5	41.2	87	27	46	9.5	18.3	27.8	73	2	74	11.1	13.1	24.2	98
	Colombia	2	63	9.6	25.7	35.3	98	12	60	12.6	16.0	28.6	88	12	67	13.9	6.9	20.8	88
	Costa Rica	12	53	16.0	19.5	35.5	88	15	51	20.6	13.0	33.6	85	35	50	12.9	2.1	15.0	65
	Czech Republic	3	56	6.7	34.6	41.4	97	5	76	4.6	14.2	18.8	95	16	70	1.8	11.5	13.3	84
	Denmark	26	38	6.4	30.2	36.7	74	32	58	3.5	6.2	9.7	68	26	62	7.7	3.9	11.5	74
	Estonia [2]	8	66	6.8	19.1	25.9	92	16	69	6.5	8.8	15.3	84	22	70	3.0	5.2	8.3	78
	Finland	32	29	8.8	29.4	38.2	68	29	55	6.3	9.5	15.8	71	27	67	4.0	2.4	6.3	73
	France	3	46	13.0	37.5	50.5	97	9	68	10.7	12.1	22.8	91	12	76	6.9	4.7	11.6	88
	Germany	10	51	8.4	30.8	39.2	90	21	68	3.7	7.6	11.3	79	26	68	2.2	4.5	6.7	74
	Greece	c	35	19.5	41.5	60.9	96	18	47	19.7	15.8	35.5	82	17	49	22.7	11.5	34.1	83
	Hungary [2]	1	52	10.5	36.6	47.1	99	9	79	4.5	7.5	12.0	91	7	86	3.1	4.2	7.3	93
	Iceland	26	52	c	18.2	21.7	74	32	55	c	9.9	13.4	68	26	65	4.8	c	9.1	74
	Ireland	7	41	9.8	42.3	52.1	93	17	52	9.7	21.1	30.8	83	18	76	2.4	4.2	6.6	82
	Israel	6	39	5.9	48.7	54.6	94	34	45	3.1	18.5	21.6	66	21	67	4.3	8.2	12.5	79
	Italy	3	41	18.5	37.5	55.9	97	16	50	11.0	22.9	33.9	84	27	51	7.7	14.1	21.9	73
	Japan	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Korea	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Latvia	c	59	c	35.6	41.3	100	10	64	8.9	16.7	25.6	90	11	77	5.6	6.8	12.4	89
	Lithuania	c	34	13.9	43.5	57.4	91	14	64	9.9	12.0	22.0	86	7	84	6.5	2.9	9.4	93
	Luxembourg	c	c	c	c	c	c	c	80	c	c	c	88	17	76	c	c	c	83
	Mexico	2	63	3.0	32.5	35.5	98	14	61	4.1	21.5	25.6	86	12	71	4.8	12.3	17.1	88
	Netherlands	14	58	5.3	23.2	28.5	86	25	67	1.6	7.2	8.7	75	22	73	3.0	1.6	4.6	78
	New Zealand [2]	7	59	8.4	25.5	33.9	93	11	72	5.2	11.3	16.5	89	15	79	1.9	4.8	6.7	85
	Norway	17	51	9.2	22.0	31.2	83	21	68	3.3	7.6	11.0	79	28	67	2.2	2.8	5.0	72
	Poland [2]	c	52	5.4	41.2	46.6	99	4	78	3.7	14.7	18.4	96	8	83	3.1	5.6	8.8	92
	Portugal	c	58	10.9	29.5	40.4	99	11	71	8.7	10.2	18.9	89	18	69	8.9	4.4	13.3	82
	Slovak Republic	c	22	19.7	58.1	77.8	100	4	81	6.1	9.4	15.5	96	14	72	6.5	8.1	14.6	86
	Slovenia	c	71 [r]	c	23.0 [r]	26.2 [r]	97 [r]	23	63	5.3	8.8	14.2	77	23	65	7.3	4.4	11.7	77
	Spain	4	48	27.9	20.2	48.1	96	22	51	18.9	8.4	27.3	78	22	59	11.8	6.6	18.4	78
	Sweden	25	52	10.8	11.8	22.6	75	25	67	2.7	5.5	8.3	75	24	70	3.4	2.8	6.2	76
	Switzerland	15	44	10.4	30.0	40.4	85	23	66	5.3	5.2	10.5	77	20	73	4.0	2.9	6.9	80
	Türkiye	10	42	8.9	38.4	47.3	90	20	45	11.1	24.2	35.3	80	20	53	11.4	16.0	27.4	80
	United Kingdom	5	57	6.1	32.1	38.3	95	11	76	4.2	9.4	13.6	89	15	79	2.7	3.7	6.4	85
	United States	7	50	7.8	35.1	43.0	93	10	63	8.2	19.2	27.4	90	14	75	3.8	7.2	11.0	86
	OECD average	10	49	11.0	31.8	42.2	92	17	63	7.7	12.5	20.0	83	18	70	6.0	6.1	12.1	82
	EU22 average	10	48	12.4	32.7	44.4	92	16	66	7.7	11.2	18.9	84	18	70	5.9	5.5	11.4	82
Partners	**Argentina** [1]	3	61	9.0	26	35.2	97	2	70	8.1	20	28.2	98	51	40	2.4	7	9.0	49
	Brazil [1]	5	47	12.5	35	47.4	95	17	50	10.7	22	32.4	83	18	62	8.4	11	19.4	82
	China	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa	2	26	33.7	38	72.0	98	11	33	31.2	24	55.3	89	10	51	29.2	10	39.1	90
	G20 average	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m

Note: NEET refers to young people who are neither employed nor in formal education or training. Data usually refer to the second quarter of studies, which corresponds in most countries to the first three months of the calendar year, but in some countries, to the second three months. See *Definitions* and *Methodology* sections for more information. Data and more breakdowns are available at http://stats.oecd.org/, *Education at a Glance Database*.

1. Reference year differs from 2021: 2020 for Brazil and Chile; 2018 for Argentina.

2. Data refer to the annual average for Estonia, Hungary and Poland; data refer to the average of March to December 2021 for New Zealand.

Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf). Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/3jrk5u

Table A2.4. Trends in the percentage of young adults in education/not in education, by age group and work status (2019 to 2021, annual data)

		18-24 year-olds									25-29 year-olds								
		2019			2020			2021			2019			2020			2021		
			Not in educaton			Not in educaton			Not in educaton			Not in educaton			Not in educaton			Not in educaton	
		In education	Employed	NEET	In education	Employed	NEET	In education	Employed	NEET	In education	Employed	NEET	In education	Employed	NEET	In education	Employed	NEET
		(4)	(5)	(8)=(6)+(7)	(13)	(14)	(17)=(15)+(16)	(22)	(23)	(26)=(24)+(25)	(31)	(32)	(35)=(33)+(34)	(40)	(41)	(44)=(42)+(43)	(49)	(50)	(53)=(51)+(52)
OECD	**Countries**																		
	Australia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Austria	47	42	11.4	49	40	11.9	49	40	11.8	19	69	11.5	19	68	13.4	19	69	12.6
	Belgium	61	26	12.7	64	24	12.2	66	23	10.6	8	75	17.3	9	72	18.3	12	72	16.4
	Canada	39	47	13.5	40	41	19.7	41	44	14.9	10	75	14.3	10	70	19.8	11	73	15.9
	Chile	m	m	m	55	19	26.1	m	m	m	m	m	m	16	56	28.0	m	m	m
	Colombia	30	43	27.6	28	38	34.5	29	39	31.5	11	66	23.1	9	60	31.3	9	63	27.8
	Costa Rica	50	27	22.8	50	29	20.7	50	26	24.1	21	59	19.8	23	55	21.8	24	51	24.8
	Czech Republic	m	m	m	m	m	m	m	m	m	9	75	16.0	9	73	17.8	8	74	18.2
	Denmark	57	31	12.4	58	30	11.7	58	31	10.8	26	58	16.0	26	56	17.6	28	58	13.9
	Estonia	56	35	9.3	57	30	12.6	58	27	15.3	17	68	14.9	18	66	16.7	17	69	13.5
	Finland	55	32	12.8	55	31	14.8	58	30	11.9	28	59	13.4	28	59	13.5	29	57	14.0
	France	54	29	17.5	56	27	17.5	56	28	16.0	8	71	20.6	8	70	21.6	10	71	19.3
	Germany	62	29	8.2	62	28	9.4	61	29	9.7	21	68	11.7	21	66	13.0	21	66	12.9
	Greece	65	16	19.0	64	16	20.7	69	14	16.6	15	57	28.0	17	53	29.6	17	53	29.5
	Hungary	50	35	14.5	48	37	15.0	50	36	14.7	7	75	17.1	8	72	19.2	7	79	13.7
	Iceland	56	37	6.6	60	31	9.0	59	33	7.7	28	63	9.0	28	61	11.2	26	62	12.6
	Ireland	54	33	12.9	56	29	15.2	59	29	11.1	13	72	15.3	12	68	19.7	16	68	15.4
	Israel	29	52	19.0	30	49	21.7	29	49	22.0	29	57	14.0	27	54	18.9	27	54	18.9
	Italy	53	23	24.1	53	21	25.8	53	21	26.0	16	53	30.7	17	50	33.3	16	53	31.2
	Japan	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Korea	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Latvia	61	28	10.9	60	29	10.7	59	28	13.2	10	76	14.6	9	70	20.4	10	70	19.9
	Lithuania	61	28	11.6	60	25	15.0	53	32	15.1	8	77	15.3	7	75	18.0	7	78	15.7
	Luxembourg	64	27	8.3	65	24	10.3	62	26	12.2	16	73	11.0	14	74	11.9	16	74	10.8
	Mexico	38	41	21.5	38	39	23.3	39	39	21.8	8	66	26.1	8	64	28.2	8	65	27.3
	Netherlands	65	28	6.9	66	27	7.6	69	27	4.5	22	69	9.4	22	69	9.2	23	70	7.7
	New Zealand	36	51	13.0	36	50	14.2	37	50	12.8	12	74	13.6	13	73	14.6	14	73	12.9
	Norway	m	m	m	m	m	m	62	30	7.9	m	m	m	m	m	m	23	67	10.2
	Poland	54	34	11.9	56	31	12.6	57	30	13.8	6	76	18.0	5	75	19.7	5	78	17.2
	Portugal	54	33	12.9	58	27	14.5	62	25	13.5	12	75	13.1	11	72	16.5	15	69	16.3
	Slovak Republic	56	32	12.5	57	29	13.8	59	27	14.3	6	73	20.8	6	71	22.1	7	73	19.4
	Slovenia	63	27	9.6	66	23	10.6	71	20	8.4	18	70	12.8	17	70	12.6	m	m	m
	Spain	58	23	19.2	59	19	22.0	61	20	19.2	15	60	24.4	16	56	28.2	16	58	25.8
	Sweden	49	40	11.7	50	36	13.7	49	39	12.4	23	67	9.6	24	65	10.5	25	65	9.8
	Switzerland	56	35	8.8	57	34	8.7	54[b]	34[b]	11.2[b]	22	71	7.9	22	70	7.3	21[b]	68[b]	10.4[b]
	Türkiye	35	31	33.9	35	28	36.9	37	31	32.5	15	50	35.2	15	47	38.2	15	50	35.0
	United Kingdom	41	44	14.5	42	43	15.2	44	42	13.7	10	77	12.9	11	76	12.9	12	75	12.6
	United States	43	42	14.6	43	38	19.3	42	41	17.0	11	73	16.2	11	67	21.7	11	70	19.0
	OECD average	52	34	13.9	53	31	15.9	53	32	15.1	15	69	16.2	15	66	18.7	16	66	17.6
	EU22 average	57	30	12.9	58	28	14.2	59	28	13.4	15	69	16.4	15	67	18.3	15	68	16.8
Partners	**Argentina**	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Brazil	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	China	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa	41	15	43.8	43	12	45.0	m	m	m	7	40	52.2	7	35	57.4	m	m	m
	G20 average	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m

Note: NEET refers to young people who are neither employed nor in formal education or training. See *Definitions* and *Methodology* sections for more information. Data and more breakdowns are available at http://stats.oecd.org/, *Education at a Glance Database*.
Additional columns showing data on the percentage of young adults in education by work status, and the percentage of unemployed and inactive NEETs are available for consultation on line (see StatLink below).
Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/bpz7lm

Indicator A3. How does educational attainment affect participation in the labour market?

Highlights

- Higher educational attainment leads to better labour-market outcomes. In 2021, on average, employment rates for tertiary-educated young adults (25-34 year-olds) are 8 percentage points higher than those who have attained upper secondary or post-secondary non-tertiary education and 26 percentage points higher than those who have attained below upper secondary education across OECD countries. Similarly, higher educational attainment is correlated with lower rates of unemployment and labour-market inactivity.
- Tertiary attainment among 25-34 year-olds has increased over the past two decades, but there is no sign of this leading to a decline in its labour-market value. In 2021, across OECD countries, the average unemployment rate of tertiary-educated younger adults was 2 percentage points below that of their peers with upper secondary or post-secondary non-tertiary attainment and 9 percentage points lower than for those with below upper secondary attainment. These differences are nearly identical to the differences in 2000.
- On average across OECD countries, employment rates are highest among tertiary-educated individuals who studied information and communication technologies (ICT), and lowest among those who studied the arts and humanities, social sciences, journalism and information. However, these differences need to be put into perspective: on average even those with arts and humanities, social sciences, journalism and information degrees have higher employment rates than their peers with upper secondary or post-secondary non-tertiary attainment.

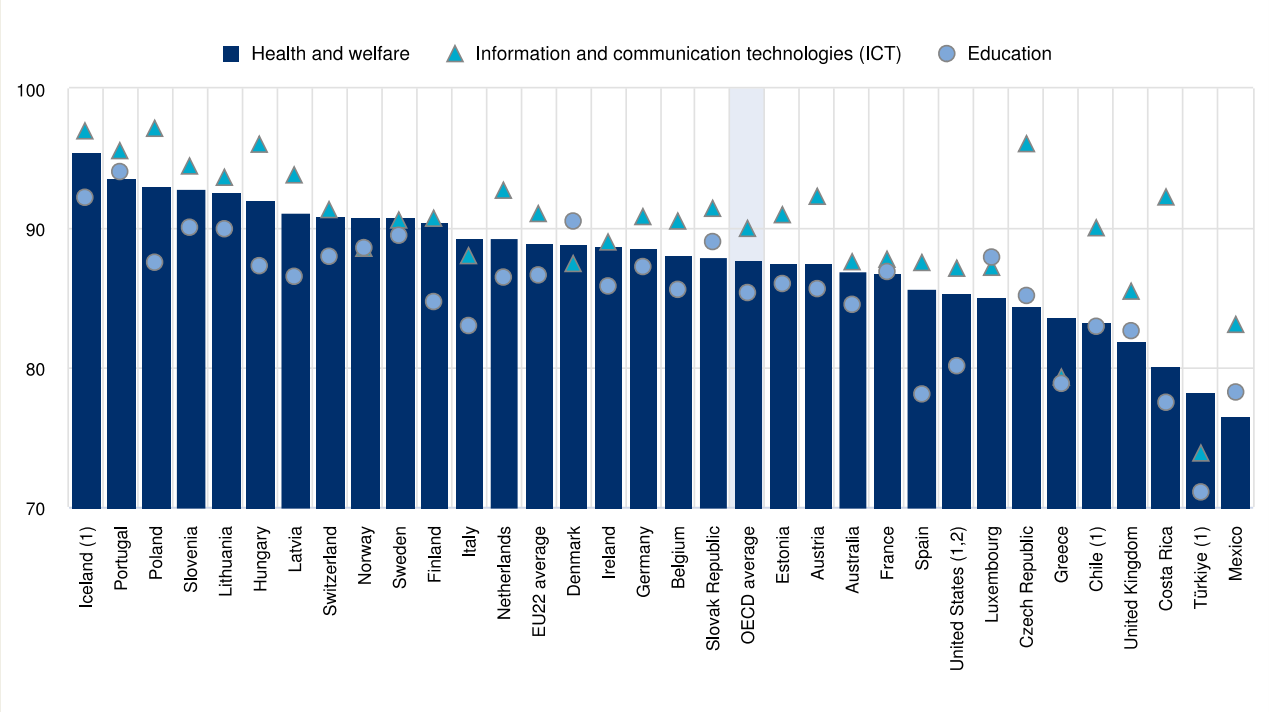
Context

Modern economies depend on a supply of highly skilled workers and these workers in turn reap labour-market benefits. These advantages, combined with expanded education opportunities, have increased the pool of skilled people across the OECD. Increasing demand for skills means labour markets can absorb the growing number of highly skilled workers, and continue to provide them with better employment prospects. In contrast, the labour-market prospects for adults with lower levels of qualifications are more challenging. Those with lower educational qualifications earn less (see Indicator A4) and are at greater risk of unemployment. In the coming years, their risk of unemployment will further increase, as many workers with lower qualifications work in jobs that could be automated in the near future (Arntz, Gregory and Zierahn, 2016[1]). It is estimated that 14% of existing jobs could disappear as a result of automation in the next 15-20 years, and another 32% are likely to change radically as individual tasks are automated (OECD, 2019[2]).

Education systems need to respond to the labour-market challenges of today and prepare students for the labour markets of the future. Labour-market outcomes by level of educational attainment are among the most important headline measures of the links between education and economic opportunities for individuals. They show the types of qualifications that are in demand by employers and can help governments to better understand global trends and anticipate how their economies may evolve in the coming years.

Figure A3.1. Employment rates of tertiary-educated adults, by field of study (2021)

Percentage of employed 25-64 year-olds among all 25-64 year-olds



1. Year of reference differs from 2021. Refer to the source table for more details.
2. Data refer to bachelor's degree field, even for those with additional tertiary degrees.
Countries are ranked in descending order of the employment rate of adults with a tertiary degree in the field of health and welfare.
Source: OECD (2022), Table A3.3. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

StatLink https://stat.link/mcsxo6

Other findings

- Tertiary attainment protects strongly against the effects of economic crises. During both the financial crisis of 2008 and the COVID-19 pandemic, unemployment increased much less among those with tertiary education than those with lower levels of attainment. In 2021, across OECD countries with comparable trend data, average unemployment rates among tertiary-educated 25-34 year-olds started to decline, whereas they stagnated for those with upper secondary or post-secondary non-tertiary attainment and increased for those with below upper secondary attainment.
- Higher educational attainment remains closely correlated with higher employment rates even within tertiary attainment levels. Adults with a doctoral or equivalent degree have the highest employment rates, while the employment rate of individuals with a master's or equivalent degree is higher than for those with a bachelor's or equivalent degree.
- There are differences in labour-market inactivity rates among tertiary-educated adults across OECD countries, ranging from 5% in Lithuania to over 20% in the Czech Republic and Italy. In some countries, a considerable fraction of tertiary-educated adults are not actively looking for work.

Analysis

Educational attainment and labour-market participation

Educational attainment and employment rates are strongly correlated. Upper secondary or post-secondary non-tertiary education is often seen as the minimum educational attainment for successful labour-market participation for most individuals (OECD, 2021[3]). There is a large increase in employment rates among 25-64 year-olds with upper secondary or post-secondary non-tertiary attainment compared to those with below upper secondary attainment. On average, only 58% of individuals with below upper secondary attainment are employed in OECD countries, but 75% of individuals with upper secondary or post-secondary non-tertiary attainment are employed. The employment rate among those with tertiary attainment is even higher, at 85%, but the difference in employment rates between upper secondary or post-secondary non-tertiary and tertiary attainment is smaller than the difference between below upper secondary and upper secondary or post-secondary non-tertiary attainment (Table A3.1).

There continues to be a strong relationship between labour-market participation and educational attainment that holds whether it is measured by employment rates, unemployment rates or inactivity rates. This relationship exists in nearly all OECD and partner countries with available data. It is very rare to find a country where a subpopulation with lower educational attainment has higher labour-market participation rates than a subpopulation with higher educational attainment Table A3.2 and Table A3.4). This positive relationship has been stable over the decades, despite the strong increase in attainment levels across the OECD (OECD, 2022[4])

While the link between educational attainment and employment rates holds for men and for women, it is particularly strong for women. Among 25-34 year-olds, in 2021, just 43% of women with below upper secondary attainment are employed, compared to 82% of those with tertiary attainment. These figures are 69% and 88% for men. The large gender difference among younger adults with below upper secondary attainment are unlikely to be solely due to employability. More likely, they are related to the persistence of traditional gender roles. Women who expect to stay home to take care of a family instead of pursuing a career have less incentive to obtain a formal education and are therefore more likely to have low educational attainment. This is reflected in inactivity rates for younger women with below upper secondary attainment that are on average more than twice as high as for men and resulting low employment rates across the OECD (Table A3.2 and (OECD, 2021[5])).

Tertiary attainment and employment rates

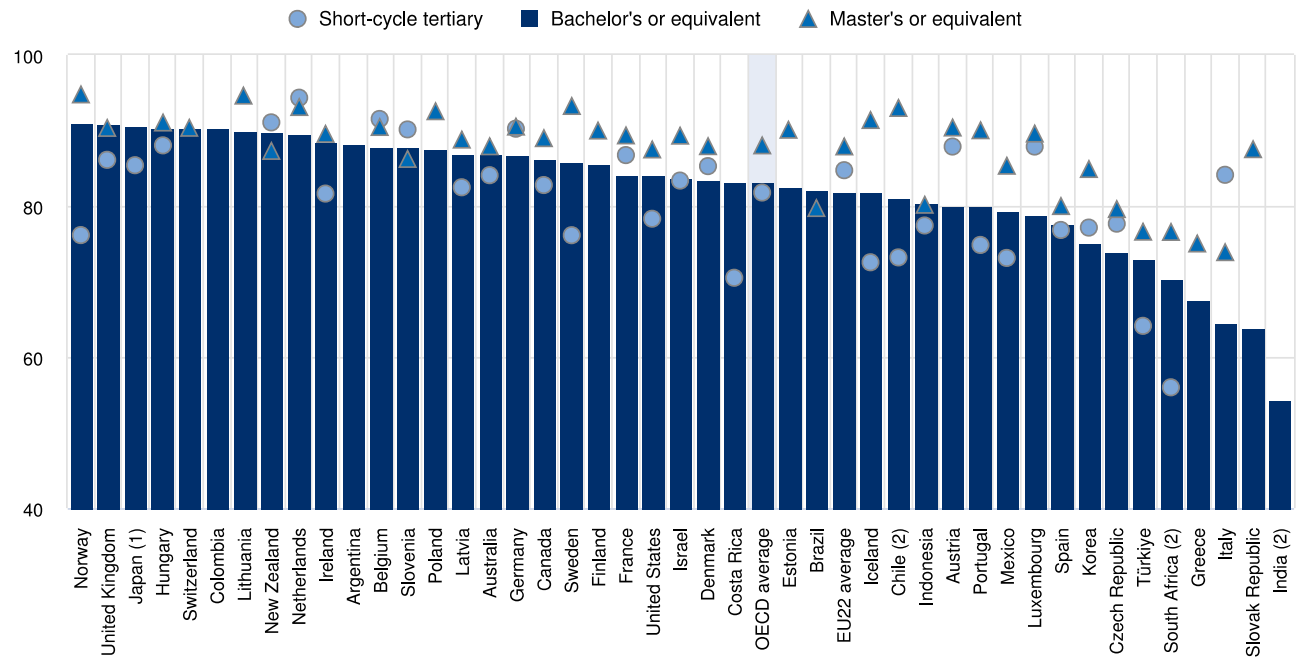
Educational attainment has increased strongly among younger adults in all OECD and partner countries with comparable data. On average across OECD countries, about 27% of 25-34 year-olds had completed a tertiary qualification in 2000 and this share increased to 48% in 2021 (see Indicator A1). The increase in attainment levels is a response to a changing labour market, in which skills are becoming ever more important and business are struggling to fill specialised positions. However, it is also putting pressure on workers who find that their qualifications, which were valuable not long ago, are no longer sufficient to compete against better qualified candidates (Lauder and Mayhew, 2020[6]).

Educational attainment and employment rates are positively correlated across different levels of tertiary attainment. Individuals aged 25-64 with a doctoral or equivalent degree have the highest employment rates of all ISCED attainment levels in all OECD countries except in Luxembourg and New Zealand. Likewise, the employment rate of individuals with a master's or equivalent degree is higher than the employment rate of those with a bachelor's or equivalent degree as their highest level of attainment everywhere except New Zealand. On average, individuals with a master's or equivalent degree are 5 percentage points more likely to be employed than individuals with a bachelor's or equivalent degree. The difference in employment rates persists throughout adults' working life in most OECD countries. So, although master's graduates are more likely to have work experience than bachelor's graduates, their higher employment rates are not simply due to them finding employment after graduating more easily than those with a bachelor's or equivalent degree (Figure A3.2 and Table A3.1).

On average across the OECD, 25-34 year-old graduates from short-cycle tertiary programmes have almost the same employment rates as those with a bachelor's or equivalent degree. However, this average hides large variations across countries. In some countries, short-cycle tertiary graduates have higher employment rates than those with bachelor's or master's or equivalent degrees, while in others they have lower rates. As short-cycle tertiary programmes aim to provide professional skills, often combined with an implicit promise of an easier transition into the labour market, these data suggest that there are differences in the effectiveness of such programmes (Figure A3.2).

Figure A3.2. Employment rate of 25-34 year-olds, by level of tertiary attainment (2021)

Percentage of employed 25-34 year-olds among all 25-34 year-olds



1. Data for tertiary education include upper secondary or post-secondary non-tertiary programmes (less than 5% of the adults are under this group).
2. Year of reference differs from 2021. Refer to the source table for more details.
Countries are ranked in descending order of the employment rate among 25-34 year-olds with a bachelor's or equivalent degree.
Source: OECD (2022), *Education at a Glance Database*, http://stats.oecd.org/. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

StatLink https://stat.link/im8fu5

At the other end of the tertiary attainment spectrum, the differences in employment rates across countries are much smaller. People with a doctoral or equivalent degree have the highest employment rate of any educational attainment level in almost all OECD countries. On average across the OECD, 93% of all 25-64 year-olds with a doctoral or equivalent degree are employed, and there are only four countries where it is below 90% (Estonia, New Zealand, Spain and the United States). In Hungary, an impressive 99% of adults with a doctoral or equivalent degree are in employment (Table A3.1).

By field of study

Employment rates for adults with tertiary attainment are high across all fields of study. Overall, the science, technology, engineering and mathematics (STEM) fields have the strongest employment outcomes. Within these fields, employment rates are highest for people who studied ICT; on average 90% of adults with a tertiary ICT degree are in employment in OECD countries. Similarly, the average employment rate of graduates in engineering, manufacturing and construction is very high at 89%. Education, a field of special relevance for many countries, has an average employment rate that is somewhat lower, but still high at 85%. Arts and humanities, social sciences, journalism and information is the broad field of study with the lowest employment rates among tertiary-educated 25-64 year-olds, at an average of 83%. To put this into perspective, the employment rate of individuals with tertiary attainment is still about 10 percentage points higher than that of their peers with upper secondary or post-secondary non-tertiary attainment on average across the OECD. This shows that tertiary attainment provides labour-market benefits even in fields of study that mostly do not directly train students for a specified career (Figure A3.1 and Table A3.3).

While the differences in employment rates between fields of study are small, they are very consistent across OECD countries. For example, employment rates for adults with tertiary attainment in ICT are as high as or higher than for those with tertiary attainment in arts and humanities and social sciences, journalism and information in all OECD countries. Within the STEM fields, graduates in natural sciences, mathematics and statistics tend to have lower employment rates than other STEM fields in almost all countries. The gaps are especially large in Chile, the Czech Republic, Mexico and Portugal, where employment rates are on average approximately 10 percentage points lower than in other STEM fields (Table A3.3).

No internationally comparable data on employment rates by field of study exist for below tertiary attainment levels across OECD countries. However, evidence suggest that occupation has an important effect on employment rates of low-skilled workers (Autor and Dorn, 2013[7]). Many countries have shortages of workers with below tertiary attainment levels in some sectors even if overall unemployment rates of those with these attainment levels is high. Thus, field of study is also likely to have a considerable influence on employment prospects also for workers with below tertiary attainment.

By subnational regions

On average, across OECD and partner countries with subnational data on labour-force status, there is more regional variation in employment rates among those with lower levels of educational attainment. For example, in Australia, employments rates for 25-64 year-olds adults with below upper secondary attainment range from 54% (in Canberra), to 63% (in Western Australia), compared with a range of 82% (in Tasmania) to 89% (in Northern Territory) for adults with tertiary attainment. Despite the concentration of economic activity in the capital city regions, in most countries, these regions do not generally have the highest employment rates. However, for tertiary-educated adults, the employment rate in the capital city region does tend to be slightly higher than the unweighted average of all regions in a country. In Greece, for example, the employment rate for adults with tertiary attainment in the capital city region of Attica is about 3 percentage points higher than the unweighted average of all Greece's regions (OECD, 2022[8])

Educational attainment and unemployment rates

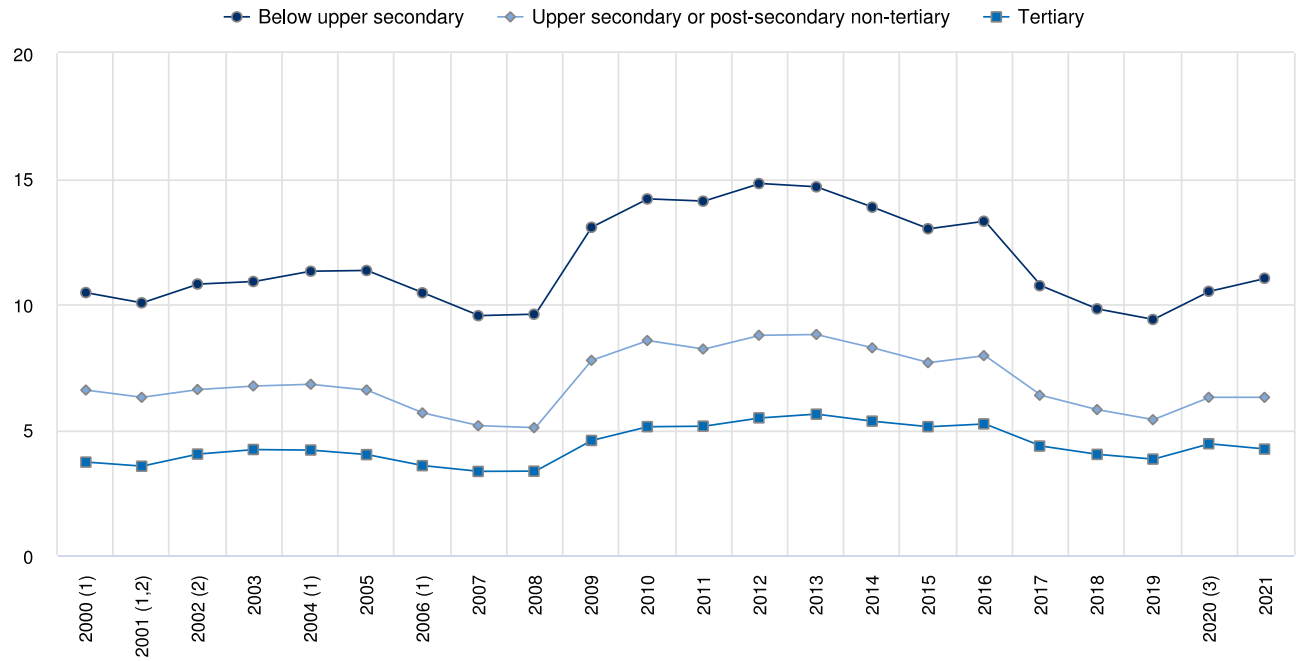
Between 2000 and 2021, tertiary attainment rates among 25-34 year-olds increased from 27% to 48% on average across OECD countries with available trend data (see Indicator A1). Despite this large increase, there are few signs that the labour-market benefits of a tertiary degree are diminishing. Among 25-34 year-olds, the average gap in unemployment rates between those with tertiary attainment and those with lower levels of attainment is almost exactly the same in 2021 as it was in 2000. In aggregate across the OECD, the labour market has absorbed a growing number of tertiary-educated workers without any noticeable effect on their unemployment rates (Figure A3.3).

Tertiary attainment also provides strong protection against the effects of economic crises. Unemployment increased strongly in the aftermath of the 2008 financial crisis for those with below upper secondary attainment, and to a lesser degree, also for those with upper secondary or post-secondary non-tertiary attainment. In contrast, the impact on tertiary-educated 25-34 year-olds was much smaller. A similar pattern can also be observed during the COVID-19 pandemic. While unemployment rates increased in 2020 for the three aggregate levels of educational attainment, the increase was much smaller for tertiary-educated younger adults than for those with lower attainment levels. In 2021, unemployment rates for tertiary-educated younger adults started to decline again, while they continued to grow for those with below upper secondary attainment and remained constant for those with upper secondary or post-secondary non-tertiary attainment (Figure A3.3).

While the data clearly suggest that increasing tertiary attainment has positive labour-market effects, two important caveats apply. First, aggregate trends across the OECD cannot rule out that, in some countries, the share of population with tertiary attainment is higher than optimal given labour-market conditions. Any conclusive analysis in this respect would not only have to consider the effects that increasing tertiary attainment has on new graduates, but also the consequences it has on the existing workforce. Second, the data do not imply that pursuing tertiary attainment is always the best choice at the individual level. For some people, upper secondary or post-secondary non-tertiary education leads to better career prospects and more fulfilling jobs than tertiary degrees. In contrast, there is little doubt that the decrease in the population with below upper secondary attainment has been a universally positive trend that should be further supported. The differences in socio-economic outcomes that are documented throughout Chapter A of this report are too large to make it plausible that any OECD country would be better off with a greater share of individuals with below upper secondary attainment.

Figure A3.3. Trends in unemployment rates, by educational attainment (2000 to 2021)

Percentage of unemployed 25-34 year-olds among 25-34 year-olds in the labour force, OECD average



Note: Because of a lack of data for many years, the following countries are excluded from the OECD average: Austria, Chile, Colombia, France, Iceland, Japan, Lithuania, Luxembourg, Norway and Slovenia. There are breaks in the time series following methodological change in the ISCED classification with minor impact on the aggregate levels of educational attainment.
1: Missing data for Israel.
2: Missing data for Finland.
3: Missing data for Türkiye.
Source: OECD (2022), *Education at a Glance Database,* http://stats.oecd.org/. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

StatLink https://stat.link/ktzcyw

Box A3.1. Cross-country differences in overqualification levels among tertiary-educated workers

While employment is crucial, it is also important that workers find jobs that correspond to their qualifications. To avoid being unemployed, individuals might accept jobs below their level of education. This wastes human capital and can reduce job satisfaction. This box presents the prevalence of overqualification across OECD countries.

The educational qualifications of workers and the educational requirements of employers meet in the labour market. Ensuring a good match between educational attainment and educational requirements of jobs is essential for countries to promote strong and inclusive growth (OECD, 2013[9])

For tertiary-educated workers, being overqualified means having a tertiary qualification while working in a job needing upper secondary or lower levels of educational attainment (see *Definitions* and *Methodology* sections for more information). With the expansion of tertiary education, a large number of tertiary graduates in some countries hold jobs that do not seem to make the best use of their qualifications. This phenomenon has become a growing concern among policy makers.

Education at a Glance 2018 showed that on average across OECD countries and economies that participated in the Survey of Adult Skills (PIAAC), 15% of tertiary-educated workers aged 25 to 64 reported being overqualified for their job (which means having a qualification of ISCED 5A or 6 while working in a job needing ISCED 3 or below). The highest

shares are observed in Japan, where over 25% of workers reported being in this situation. In contrast, in Denmark, Finland, Slovenia, Sweden and the Republic of Türkiye, no more than one in ten tertiary-educated workers are overqualified (OECD, 2018[10]).

These cross-country variations call for explanations on the positions of countries relative to the average overqualification level among tertiary-educated workers. There are two types of factors that may affect the relative overqualification levels among countries.

- **Individual-level factors**: country of birth is a major factor behind overqualification in most countries with a sizeable immigrant population. In Norway and Sweden, the share of overqualified workers is at least three times as high among foreign-born adults as among the native-born population. Age is another factor that plays a role in overqualification. Young people lacking work experience are more likely to accept jobs below their qualification level to enter the labour market. Gender, parental educational attainment, field of study, whether individuals work for the public sector and contract type may also influence the likelihood of being overqualified. Aggregated at the national level, difference in the distribution of workers with these different individual-level factors may explain the variation in the overqualification levels across countries.
- **Country-level factors:** First, the business cycle and the state of the labour market can affect the likelihood of being overqualified. It is well documented that adults entering the labour market during recessions are more likely to be overqualified. The same holds for those who enter a labour market which has a relative oversupply of tertiary-educated workers. Second, labour-market legislation appears to be of some importance. In countries with strict employment protection, employers may rely more on existing employees than outsiders to fill new vacancies and therefore reduce the overall opportunities for labour-market entrants. However, the effect of the strictness of employment protection on the overall incidence of overqualification is less conclusive, since the probability of overqualification may decrease since internal recruitment and promotions could reduce the number of overqualified employees over time. Third, the design and overall quality of the education system also differs across countries. Empirical research has found that graduates face tougher employment conditions in countries with relatively poor-quality education systems (Verhaest and Van Der Velden, 2013[11]).

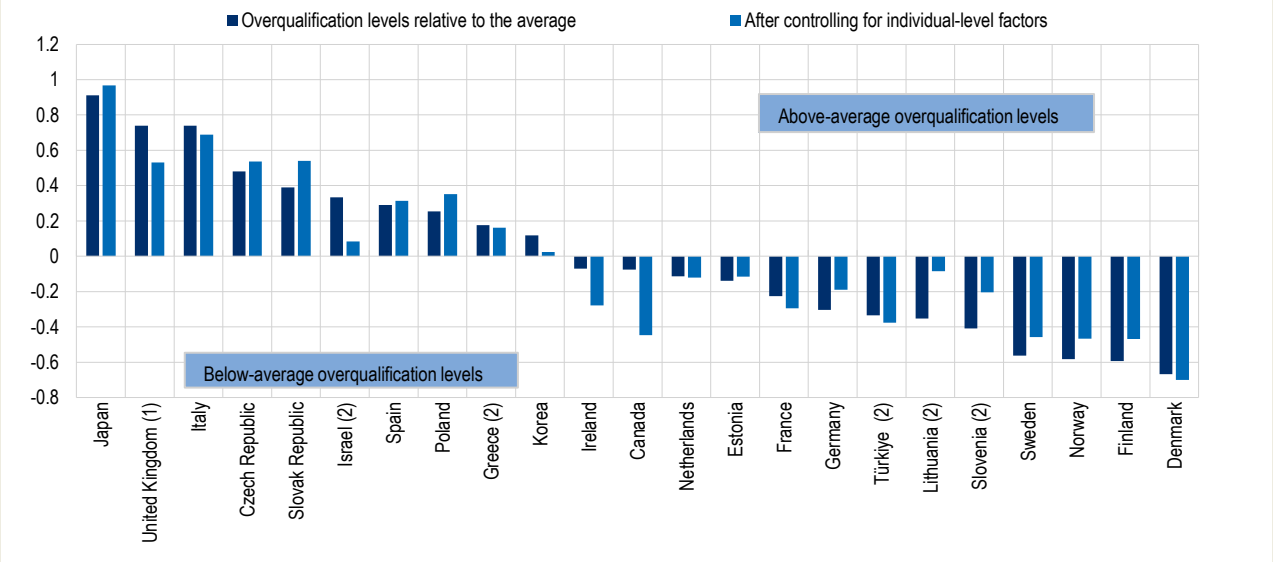
Figure A3.4 shows country overqualification levels relative to the average of the countries included in the figure, and how far individual- level factors contribute to explaining the above- or below-average levels of overqualification among tertiary-educated workers. Bars above zero signify above-average overqualification levels, while bars below zero mean below-average overqualification levels. These estimates are produced by multilevel logistic regression, and the regression table is available in Annex 3. The regression does not control for country-level factors as, in general, there is a lack of internationally agreed measures for these factors. To simplify the interpretation of the results, this analysis considers that variations not explained by the individual-level factors listed above are due to differences directly occurring at country level.

In Figure A3.4, the dark blue bars reflect the values cited above, before controlling for individual-level factors. Japan has the highest relative overqualification level and Denmark the lowest. After controlling for individual-level factors, bar lengths decreased the most in Canada, Ireland, Israel, Lithuania, Slovenia, the Slovak Republic and the United Kingdom (Figure A3.4). This implies that in these countries, the individual-level factors are contributing to the above- or below-average levels of overqualification. In contrast, in the Czech Republic, Denmark, Estonia, Greece, Italy, the Netherlands, Spain and Türkiye, the bar lengths barely change after controlling for individual-level factors. In these countries, the overqualification level is not strongly affected by the individual-level factors listed above, and the relative overqualification levels in these countries are likely to be influenced by country-level factors.

Looking more specifically at each individual-level factor, the risk of being overqualified among tertiary-educated workers decreases with age and parental educational attainment level, while the risk is greater among workers with a migrant background. Moreover, working in the private sector and having a temporary contract are both associated with a greater risk of overqualification. Field of study is also related to the risk of overqualification; in particular, workers who studied in the field of health and welfare are less likely to be overqualified.

Figure A3.4. Cross-country differences in overqualification levels among tertiary-educated workers (2012 or 2015)

Employed 25-64 year-olds



How to read this figure: Variables are unitless. The bars represent the positions of countries relative to the average overqualification level. If the length of a bar becomes shorter after controlling for individual-level factors, it implies that the individual-level factors contribute to explaining the above- or below-average levels of overqualification. See Annex 3 for the list of factors and for the regression table (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).
Note: An overqualified tertiary-educated worker is defined as a job holder who has attained an education at ISCED 5A or 6 while holding a job that needs only ISCED 3 or less. Educational attainment refers to ISCED-97. See *Definitions*, *Methodology* and *Source* sections for more information.
1. Individual-level data refer to the subnational entities England (UK) and Northern Ireland (UK).
2. Reference year is 2015; for all other countries and subnational entities the reference year is 2012.
Countries are ranked in descending order of relative overqualification levels.
Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

StatLink https://stat.link/du0gm1

Long-term unemployment

Long-term unemployment is a particularly damaging form of unemployment. It has severe negative consequences on the physical and mental well-being of the unemployed and their families. Moreover, the longer unemployment lasts, the harder it becomes to find a new job. Skills atrophy when they are not used and many employers are reluctant to hire the long-term unemployed even if they meet their requirements. These difficulties are aggravated by the fact that when the long-term unemployed do find a new job, they tend to be offered lower wages than those who have been unemployed for a shorter time (Abraham et al., 2016[12]). Due to these consequences, public policy needs to make particular efforts to prevent long-term unemployment.

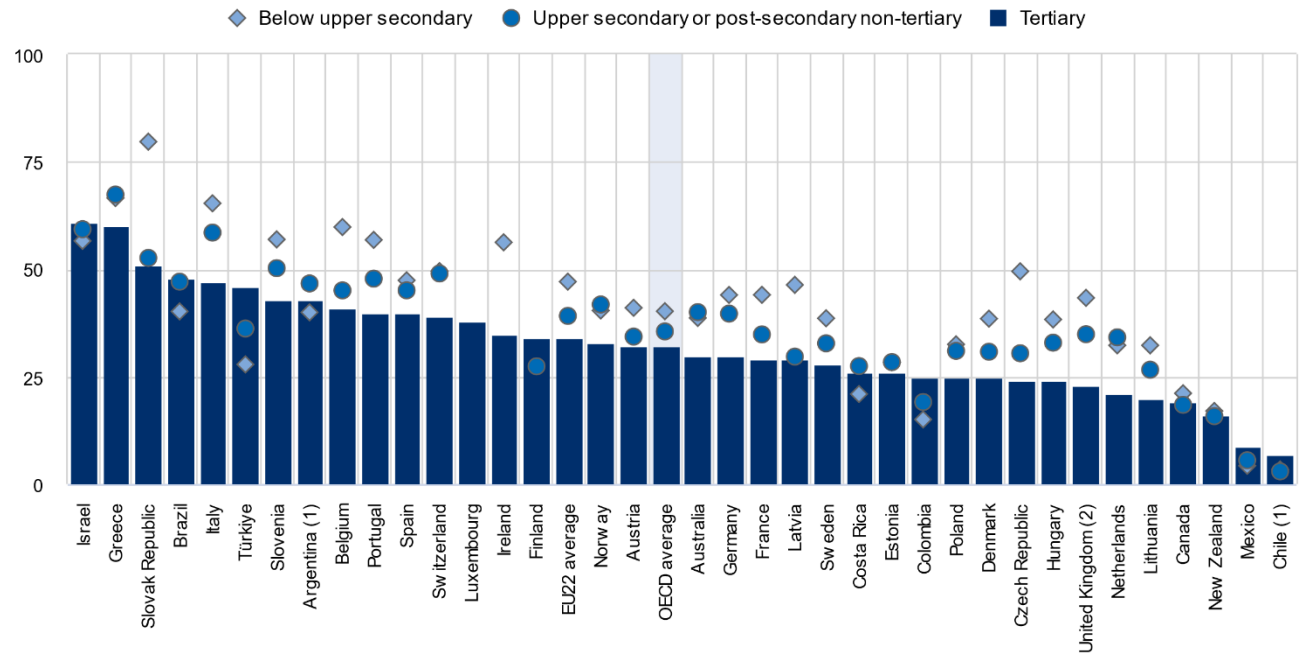
Higher educational attainment is also effective in reducing the risk of long-term unemployment. On average, 31% of unemployed tertiary-educated adults have been unemployed for over 12 months, compared to 35% of those with upper secondary or post-secondary non-tertiary attainment and 40% for those with below upper secondary attainment. Indeed, these figures understate the differences in the total number of long-term unemployed because they do not take into account the fact that individuals with greater educational attainment have much lower unemployment rates in the first place (Table A3.5).

This pattern of lower long-term unemployment rates among those with higher educational attainment holds in almost all OECD countries. The countries where the share of long-term unemployed is higher among tertiary-educated unemployed adults than those with lower attainment tend to have per capita GDP levels that are well below the OECD average. This might be due to

weaker unemployment protection schemes in these countries, forcing poorer unemployed adults, with lower attainment levels, to find a job more urgently than their wealthier peers with higher attainment levels. The only country with above-average per capita GDP where long-term unemployment is higher among tertiary-educated unemployed adults is the United States, another country with weaker unemployment protection schemes than many other OECD countries (Figure A3.5).

Figure A3.5. Long-term unemployment (12 months or more) among 25-64 year-olds, by educational attainment (2021)

As a percentage of all unemployed 25-64 year-olds in the labour force



1. Data for upper secondary attainment include completion of a sufficient volume and standard of programmes that would be classified individually as completion of intermediate upper secondary programmes (12% of adults aged 25-64 are in this group).
2. Year of reference differs from 2021. Refer to the source table for more details.
Countries are ranked in descending order of the share of tertiary-educated 25-64 year-olds who have been unemployed for 12 months or more.
Source: OECD (2022),Table A3.5. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

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Educational attainment and labour-market inactivity

While unemployment receives most public attention, the economic inactivity rate – the share of people who are neither working nor actively looking for a job – is another important measure of labour-market participation. The inactive population includes people who are caring for a family or are unable to work for health reasons, but also people who were unemployed and have given up looking for a job. Thus, long-term unemployment might eventually turn into inactivity, meaning people disappear from the unemployment statistics while still suffering from its harmful consequences.

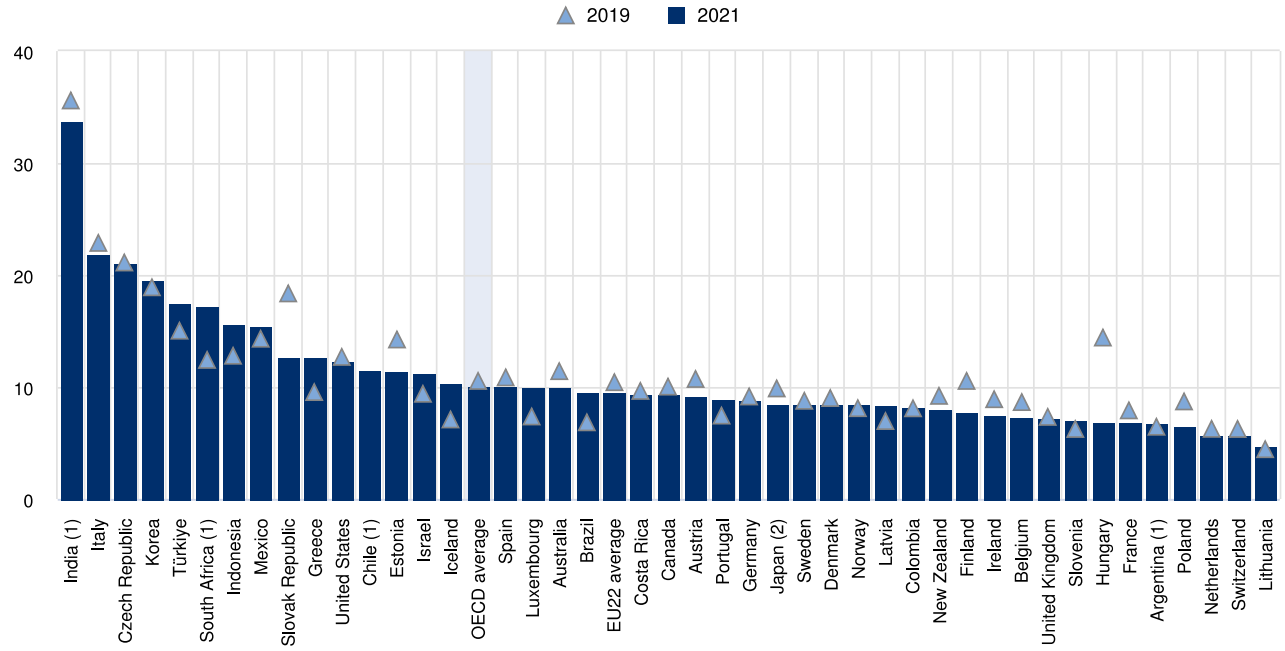
The societal costs of inactivity among individuals with tertiary attainment are especially high. Governments spend large sums to educate people to tertiary level (see Chapter C). While economic considerations are not the only reason for public spending on tertiary education, such spending is only sustainable if it creates a return in the form of higher tax revenues. Moreover, inactivity among tertiary-educated individuals removes their skills from the workforce, which also has an indirect impact on those with lower attainment levels as high-skilled employment tends to have positive spillover effects on low-skilled employment (Mazzolari and Ragusa, 2013[13]).

There are large difference among countries in the inactivity rates of tertiary-educated 25-34 year-olds across OECD countries. On average, in 2021, 10% of younger adults with tertiary attainment are not in the labour force, but in Lithuania the share is half that, at 5%, while in the Czech Republic and Italy it is more than twice the OECD average. (Figure A3.6).

Among 25-34 year-olds with upper secondary or post-secondary non-tertiary attainment, in 2021, average inactivity rates are 17%, rising to 32% for those with below upper secondary attainment across OECD countries. Notably, these rates have remained largely constant during the COVID-19 pandemic, suggesting that the feared shift towards higher inactivity rates has not materialised in most countries. While there are some countries that experienced an increase in inactivity rates, more countries experienced a decrease in inactivity rates among tertiary-educated adults from 2019 to 2021. In some countries, such as Hungary and the Slovak Republic, this decrease in inactivity rates among tertiary-educated younger adults has been substantial (over 5 percentage points) (Figure A3.6 and Table A3.4).

Figure A3.6. Trends in inactivity rates of tertiary-educated 25-34 year-olds (2019 and 2021)

Percentage of inactive 25-34 year-olds among all 25-34 year-olds



1. Year of reference differs from 2021. Refer to the source table for more details.
2. Data for tertiary education include upper secondary or post-secondary non-tertiary programmes (less than 5% of adults are in this group).
Countries are ranked in descending order of the percentage of inactive tertiary-educated 25-34 year-olds in 2021.
Source: OECD (2022), Table A3.4. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

StatLink https://stat.link/poq287

Definitions

Labour force (active population) is the total number of employed and unemployed persons, in accordance with the definition in the Labour Force Survey.

Age groups: Adults refer to 25-64 year-olds; **younger adults** refer to 25-34 year-olds.

Educational attainment refers to the highest level of education successfully completed by an individual.

Employed individuals are those who, during the survey reference week, were either working for pay or profit for at least one hour or had a job but were temporarily not at work. The **employment rate** refers to the number of persons in employment as a percentage of the population.

Fields of study are categorised according to the ISCED Fields of education and training (ISCED-F 2013). See the *Reader's Guide* for full listing of the ISCED fields used in this report.

Inactive individuals are those who, during the survey reference week, were outside the labour force and classified neither as employed nor as unemployed. Individuals enrolled in education are also considered as inactive if they are not looking for a job. The **inactivity rate** refers to inactive persons as a percentage of the population (i.e. the number of inactive people is divided by the number of the population of the same age group).

Levels of education: See the *Reader's Guide* at the beginning of this publication for a presentation of all ISCED 2011 levels. The previous classification, ISCED-97, is used for the analyses based on the Survey of Adult Skills (PIAAC) in the textbox. The levels of education are defined as follows: **below upper secondary** corresponds to levels 0, 1, 2 and 3C short programmes; **upper secondary or post-secondary non-tertiary** corresponds to levels 3 and 4; and **tertiary** corresponds to levels 5B, 5A and 6**.** ISCED 5A (tertiary-type A) consists of largely theory-based programmes designed to provide sufficient qualifications for entry to advanced research programmes and professions with high skill requirements, such as medicine, dentistry or architecture. The duration is at least three years full time, although usually four or more years. These programmes are not exclusively offered at universities, and not all programmes nationally recognised as university programmes fulfil the criteria to be classified as tertiary-type A. These programmes include second-degree programmes, such as the American master's degree. ISCED 5B consists of programmes that are typically shorter than those of tertiary-type A and focus on practical, technical or occupational skills for direct entry into the labour market, although some theoretical foundations may be covered. They have a minimum duration of two years full-time equivalent at the tertiary level. ISCED 6 consists of programmes that lead directly to the award of an advanced research qualification (e.g. PhD). The theoretical duration of these programmes is three years, full time, in most countries (for a cumulative total of at least seven years full-time equivalent at the tertiary level), although the actual enrolment time is typically longer. Programmes are devoted to advanced study and original research.

Qualification mismatch: For the analysis in the textbox, an **overqualified worker** is defined as a job holder who has attained an education at ISCED 5A or 6 while holding a job that needs only ISCED 3 or less. An **underqualified worker** is defined as a job holder who has attained ISCED 3 or below while holding a job that needs ISCED 5A or 6.

Unemployed individuals are those who, during the survey reference week, were without work, actively seeking employment and currently available to start work. The **unemployment rate** refers to unemployed persons as a percentage of the labour force (i.e. the number of unemployed people is divided by the sum of employed and unemployed people).

Methodology

For information on methodology, see Indicator A1.

Please see the *OECD Handbook for Internationally Comparative Education Statistics* (OECD, 2018[14]) for more information and Annex 3 for country-specific notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

The distribution of unemployment by its duration in Table A3.5 does not take into account unemployed adults who reported unknown duration of unemployment. The share of adults who have been unemployed for at least 3 months but less than 12 months refer to the share of those who have been unemployed for less than 12 months in Argentina, Australia, Colombia, Finland, Portugal, Switzerland and Türkiye.

The qualification mismatch presented in Box A3.1 does not reflect misalignments between the field of study of the worker and what is needed for the job. The definitions of overqualification can vary across different studies on the topic. The question asked by the Survey of Adult Skills on job requirements is the following: "Still talking about your current job: If applying today, what would be the usual qualifications, if any, that someone would need to get this type of job?". The analysis focuses on the comparison between ISCED 3 or below with ISCED 5A or 6 and does not look at the situation for ISCED 5B. This decision is driven by the blurred boundary between ISCED 5B and ISCED 5A or 6 and it also takes into account the fact that the ISCED 4 level is not well defined in the labour market.

Source

For information on sources, see Indicator A1.

Data on subnational regions for selected indicators are available in the *OECD Regional Statistics (database)* (OECD, 2022[8])

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Indicator A3 tables

Tables Indicator A3. How does educational attainment affect participation in the labour market?

Table A3.1	Employment rates of 25-64 year-olds, by educational attainment (2021)
Table A3.2	Trends in employment rates of 25-34 year-olds, by educational attainment and gender (2011 and 2021)
Table A3.3	Employment rates of tertiary-educated 25-64 year-olds, by field of study (2021)
Table A3.4	Trends in unemployment and inactivity rates of 25-34 year-olds, by educational attainment (2019 to 2021)
Table A3.5	Unemployment rates of 25-64 year-olds, by duration of unemployment and educational attainment (2021)

StatLink https://stat.link/cyt6uv

Cut-off date for the data: 17 June 2022. Any updates on data can be found on line at: http://dx.doi.org/10.1787/eag-data-en. More breakdowns can also be found at: http://stats.oecd.org, *Education at a Glance Database*.

Table A3.1. Employment rates of 25-64 year-olds, by educational attainment (2021)

Percentage of employed 25-64 year-olds among all 25-64 year-olds

		Below upper secondary	Upper secondary or post-secondary non-tertiary			Tertiary					All levels of education
			Upper secondary	Post-secondary non-tertiary	Total	Short-cycle tertiary	Bachelor's or equivalent	Master's or equivalent	Doctoral or equivalent	Total	
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
OECD	Countries										
	Australia	60	78	84	79	81	86	88	95	86	79
	Austria	54	75	85	76	85	80	89	93	86	76
	Belgium	45	72	85	73	86	85	89	95	87	74
	Canada	56	69	79	72	79	83	87[d]	x(7)	82	77
	Chile [1]	52	63	a	63	73	83	91[d]	x(7)	80	65
	Colombia	65	76[d]	x(2)	68	x(6)	87[d]	x(6)	x(6)	77	69
	Costa Rica	60	66	c	66	72	83	89	c	81	66
	Czech Republic	56	83[d]	x(2)	83	89	82	88	94	87	83
	Denmark	62	82	91	82	87	86	90	93	88	81
	Estonia	64	79	80	79	83	86	89	92	87	81
	Finland	54	76	95	77	82	88	90	m	88	79
	France	53	74	61	74	85	84	89	91	86	75
	Germany	62	80	86	82	88	87	89	93	88	81
	Greece	53	62	68	63	71	73	84	93	76	65
	Hungary	59	81	91	82	91	89	92	99	91	82
	Iceland	71	80	91	82	85	87	92	93	89	83
	Ireland	52	70	75	72	81	86	88	92	86	77
	Israel	48	70	a	70	84	86	90	92	87	76
	Italy	51	70	74	70	70	75	85	92	82	66
	Japan [2]	x(2)	82[d]	x(5)	m	82[d]	89[d]	x(6)	x(6)	86[d]	84
	Korea	61	70	a	70	76	77	86[d]	x(7)	77	73
	Latvia	62	73	75	73	82	86	86	97[r]	86	77
	Lithuania	58	74	74	74	a	88	92	96	90	80
	Luxembourg	62	72	78	72	81	81	89	89	86	77
	Mexico	64	69	a	69	72	78	86	92	78	68
	Netherlands	66	83	79	83	90	87	91	96	89	82
	New Zealand	72	82	86	83	90	89	88	89	89	83
	Norway	61	81	83	81	83	90	93	95	89	82
	Poland	49	74	74	74	76	89	91	97	91	78
	Portugal	70	82	81	82	78	83	92	95	90	80
	Slovak Republic	30	79	82	79	c	76	90	92	88	78
	Slovenia	50	75	a	75	86	89	91	94	90	79
	Spain	58	71	64	71	79	80	84	87	81	71
	Sweden	62	85	82	84	82	89	93	94	89	83
	Switzerland	67	82[d]	x(2)	82	x(6, 7, 8)	88[d]	89[d]	93[d]	89	83
	Türkiye	50	59	a	59	63	75	82	91	72	57
	United Kingdom [3]	64	79	a	79	82	87	88	91	86	80
	United States	52	67[d]	x(2)	67	75	80	85	88	81	72
	OECD average	58	75	80	75	81	84	89	93	85	76
	EU22 average	56	76	79	76	82	84	89	93	87	77
Partners	Argentina	66	73	a	73	x(6)	85[d]	x(6)	93	86	74
	Brazil	55	68	a	68	x(6)	80[d]	83	90	80	65
	China	m	m	m	m	m	m	m	m	m	m
	India [1]	61	63	75	64	x(6)	61[d]	x(6)	64	62	62
	Indonesia	73	73[d]	x(2)	73	75	82	82	89	81	74
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m
	South Africa [1]	40	53	m	53	67	77	84[d]	x(7)	73	49
	G20 average	58	71	m	70	m	81	m	87	81	71

Note: In most countries, data refer to ISCED 2011. For Argentina and India, data refer to ISCED-97. See *Definitions* and *Methodology* sections for more information. Data and more breakdowns are available at: http://stats.oecd.org/, *Education at a Glance Database*.

1. Year of reference differs from 2021: 2020 for Chile, India and South Africa.
2. Data for tertiary education include upper secondary or post-secondary non-tertiary programmes (less than 5% of adults are in this group).
3. Data for upper secondary attainment include completion of a sufficient volume and standard of programmes that would be classified individually as completion of intermediate upper secondary programmes (12% of adults aged 25-64 are in this group).

Source: OECD/ILO (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf). Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/9nshzv

Table A3.2. Trends in employment rates of 25-34 year-olds, by educational attainment and gender (2011 and 2021)

Percentage of employed 25-34 year-olds among all 25-34 year-olds

		Below upper secondary						Upper secondary or post-secondary non-tertiary						Tertiary					
		Men		Women		Total		Men		Women		Total		Men		Women		Total	
		2011	2021	2011	2021	2011	2021	2011	2021	2011	2021	2011	2021	2011	2021	2011	2021	2011	2021
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
OECD	Countries																		
	Australia	78[b]	70	49[b]	47	65[b]	60	92[b]	89	69[b]	71	82[b]	82	92[b]	91	80[b]	84	85[b]	87
	Austria	77	65	52	47	63	57	87	87	79	78	83	83	89	89	85	84	87	87
	Belgium	66[b]	57	41[b]	36	55[b]	47	86[b]	83	72[b]	70	79[b]	77	90[b]	90	88[b]	89	89[b]	89
	Canada	70	65	44	38	59	55	83	81	70	67	78	76	87	87	81	84	84	85
	Chile [1]	81[b]	68	43[b]	44	62[b]	56	81[b]	71	56[b]	51	68[b]	60	91[b]	83	81[b]	77	86[b]	79
	Colombia	m	87	m	42	m	68	m	84	m	52	m	68	m	85	m	72	m	78
	Costa Rica	83	81	39	39	62	62	90	83	63	50	76	66	86	85	82	74	84	79
	Czech Republic	60[b]	73	34[b]	38	46[b]	56	91[b]	95	62[b]	60	78[b]	80	91[b]	94	63[b]	66	76[b]	78
	Denmark	70	67	45	45	60	58	83	85	75	71	80	79	87	87	84	84	85	86
	Estonia	64	80	46	55	58	71	83	89	67	72	76	83	89	92	72	81	78	85
	Finland	64	57[b]	c	38[b]	56	48[b]	84	79[b]	70	72[b]	78	76[b]	91	89[b]	77	86[b]	83	87[b]
	France	68	62	43	39	56	52	87	82	68	71	79	77	90	89	84	86	87	87
	Germany	69[b]	70	43[b]	45	56[b]	59	84[b]	87	76[b]	81	80[b]	84	93[b]	91	86[b]	86	89[b]	88
	Greece	72[b]	64	37[b]	20	59[b]	46	74[b]	71	54[b]	50	64[b]	62	73[b]	75	67[b]	65	69[b]	69
	Hungary	56	70	25	45	41	59	82	90	59	79	72	85	91	93	72	89	80	91
	Iceland	79	75	57	68	70	73	80	88	62	70	72	80	88	89	83	81	85	84
	Ireland	46[b]	56	36[b]	29	41[b]	45	68[b]	79	61[b]	64	65[b]	72	83[b]	90	81[b]	87	82[b]	88
	Israel	58[b]	58	27[b]	41	46[b]	51	72[b]	69	62[b]	60	68[b]	65	83[b]	86	81[b]	83	82[b]	85
	Italy	73[b]	64	38[b]	31	58[b]	50	78[b]	74	59[b]	52	69[b]	64	71[b]	71	66[b]	70	68[b]	70
	Japan [2]	m	m	m	m	m	m	x(13)	x(14)	x(15)	x(16)	x(17)	x(18)	92[b,d]	94[d]	72[b,d]	84[d]	81[b,d]	89[d]
	Korea	69[b]	75	44[b]	56	58[b]	65	73[b]	68	51[b]	55	63[b]	63	85[b]	80	65[b]	73	75[b]	76
	Latvia	57	74	44	32	53	60	78	81	65	69	72	76	90	91	82	84	85	87
	Lithuania	43[b]	62	41[b]	40[r]	43[b]	57	71[b]	86	67[b]	66	69[b]	79	91[b]	93	87[b]	90	89[b]	91
	Luxembourg	c	83	c	c	c	74	c	88	c	81	c	85	c	89	c	84	89[b]	86
	Mexico	90	89	41	44	64	65	88	88	55	54	71	70	87	86	75	74	81	79
	Netherlands	81[b]	77	58[b]	62	71[b]	71	89[b]	90	82[b]	81	85[b]	86	92[b]	93	92[b]	89	92[b]	91
	New Zealand	77	77	46	56	62	68	88	90	67	73	78	82	89	93	78	86	83	90
	Norway	74	72	62	52	69	64	88	87	77	80	83	84	91	88	88	88	89	88
	Poland	57[b]	60	35[b]	31	49[b]	50	85[b]	92	58[b]	65	73[b]	81	91[b]	95	82[b]	88	85[b]	91
	Portugal	79	74	67	63	74	70	81	81	79	77	80	79	80	80	83	86	82	84
	Slovak Republic	bc	33	bc	18	28[b]	26	82[b]	89	57[b]	73	71[b]	83	88[b]	90	69[b]	79	77[b]	83
	Slovenia	bc	68	bc	41[r]	c	58	83[b]	89	74[b]	72	79[b]	84	91[b]	90	87[b]	87	89[b]	88
	Spain	63	66	51	49	58	59	71	71	63	67	67	69	79	80	75	77	77	78
	Sweden	71[b]	71	45[b]	46	60[b]	60	87[b]	85	78[b]	76	83[b]	82	88[b]	87	85[b]	85	86[b]	86
	Switzerland	78[b]	76[b]	62[b]	54[b]	70[b]	65[b]	90[b]	89[b]	81[b]	83[b]	86[b]	87[b]	92[b]	92[b]	82[b]	89[b]	87[b]	91[b]
	Türkiye	85[b]	79	25[b]	24	53[b]	51	88[b]	83	34[b]	32	66[b]	61	86[b]	83	66[b]	59	77[b]	71
	United Kingdom [3]	70[b]	72	41[b]	52	56[b]	64	87[b]	89	69[b]	77	78[b]	83	89[b]	93	83[b]	88	86[b]	90
	United States	66	64	38	38	54	53	72	74	62	61	67	68	87	87	78	81	82	84
	OECD average	70	69	44	43	57	58	82	83	66	67	75	76	88	88	79	82	83	84
	EU22 average	65	66	43	40	54	56	82	84	68	70	75	78	87	88	79	83	83	85
Partners	Argentina	87	83	43	41	67	64	88	81	59	59	73	70	96	92	85	86	89	88
	Brazil	87[b]	75	53[b]	37	71[b]	58	91[b]	82	40[b]	55	64[b]	68	92[b]	87	85[b]	78	88[b]	82
	China	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	India [1]	m	95	m	28	m	59	m	88	m	21	m	59	m	76	m	29	m	54
	Indonesia	93	88	50	47	70	67	91	86	50	50	72	70	87	87	74	74	80	80
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa [1]	55	41	39	26	47	34	62	51	41	38	51	45	75	67	64	61	70	63
	G20 average	m	73	m	39	m	57	m	80	m	56	m	69	m	85	m	75	m	80

Note: Totals might not add up to 100% for the averages because of missing data for some levels for some countries. The code "b" in columns for year 2011 represents that data refer to ISCED-97. Data in columns for year 2021 refer to ISCED 2011 for all countries except for Argentina and India. See *Definitions* and *Methodology* sections and Annex 3 for more information. Data and more breakdowns are available at http://stats.oecd.org/, *Education at a Glance Database*.

1. Year of reference differs from 2021: 2020 for Chile, India and South Africa.
2. Data for tertiary education include upper secondary or post-secondary non-tertiary programmes (less than 5% of the adults are under this group).
3. Data for upper secondary attainment include completion of a sufficient volume and standard of programmes that would be classified individually as completion of intermediate upper secondary programmes (9% of adults aged 25-34 are in this group).

Source: OECD/ILO (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf). Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/uo0zbf

Table A3.3. Employment rates of tertiary-educated 25-64 year-olds, by field of study (2021)

Percentage of employed 25-64 year-olds among all 25-64 year-olds

		Education	Arts and humanities, social sciences, journalism and information			Business, administration and law			Natural sciences, mathematics and statistics	Information and communication technologies (ICT)	Engineering, manufacturing and construction	Health and welfare			Total
			Arts	Humanities (except languages), social sciences, journalism and information	Total	Business and administration	Law	Total				Health (medical and dental)	Health (nursing and associate health fields)	Total	
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
OECD	Countries														
	Australia	85	x(4)	86	83	x(7)	x(7)	85	83	88	88	x(13)	x(13)	87	86
	Austria	86	83	83	84	86	87	86	87	92	87	90	86	87	86
	Belgium	86	x(4)	85	84	x(7)	x(7)	87	89	90	90	x(13)	x(13)	88	87
	Canada	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Chile [1]	83	84	89	86	83	85	83	78	90	89	92	83	83	84
	Colombia	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Costa Rica	78	x(4)	79	79	x(7)	x(7)	81	88	92	85	x(13)	x(13)	80	81
	Czech Republic	85	86	84	84	83	91	64	83	96	92	88	84	84	87
	Denmark	90	77	86	84	90	92	90	82	87	90	m	m	89	88
	Estonia	86	81	88	85	88	89	88	91	91	87	x(13)	x(13)	87	87
	Finland	85	85	85	85	86	95	85	89	91	90	96	90	90	88
	France	87	x(4)	84	81	x(7)	x(7)	86	87	88	88	x(13)	x(13)	87	86
	Germany	87	84	86	84	89	89	90	86	91	90	90	87	89	88
	Greece	79	x(4)	81	74	x(7)	x(7)	75	75	79	81	x(13)	x(13)	84	76
	Hungary	87	x(4)	93	91	x(7)	x(7)	90	89	96	93	x(13)	x(13)	92	91
	Iceland [1]	92	x(4)	x(4)	92	x(7)	x(7)	95	92	97	93	x(13)	x(13)	95	93
	Ireland	86	x(4)	86	77	x(7)	x(7)	89	87	89	95	x(13)	x(13)	89	86
	Israel	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Italy	83	69	78	76	85	81	83	81	88	88	x(13)	x(13)	89	82
	Japan	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Korea	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Latvia	87	88	85	84	86	78	84	91	94	87	92	95	91	86
	Lithuania	90	88	92	90	89	x(7)	89	90	94	89	93	92	93	90
	Luxembourg	88	x(4)	85	82	x(7)	x(7)	89	83	87	87	m	m	85	86
	Mexico	78	77	74	75	78	80	78	73	83	81	77	77	77	78
	Netherlands	86	89	87	87	91	88	91	86	93	89	93	90	89	89
	New Zealand	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Norway	89	89	89	88	90	90	90	85	89	92	x(13)	x(13)	91	89
	Poland	88	86	90	90	92	92	92	89	97	93	x(13)	x(13)	93	91
	Portugal	94	x(4)	91	87	x(7)	x(7)	89	83	96	89	x(13)	x(13)	94	90
	Slovak Republic	89	x(4)	89	86	x(7)	x(7)	90	87	91	89	x(13)	x(13)	88	88
	Slovenia	90	84	90	89	87	91	88	90	94	91	x(13)	x(13)	93	90
	Spain	78	x(4)	80	78	x(7)	x(7)	80	82	88	83	x(13)	x(13)	86	81
	Sweden	89	80	88	85	90	89	89	85	91	92	88	94	91	89
	Switzerland	88	82	85	84	89	85	88	91	91	93	92	91	91	89
	Türkiye [1]	71	x(4)	x(4)	67	x(7)	x(7)	73	73	74	78	x(13)	x(13)	78	75
	United Kingdom	83	x(4)	85	83	x(7)	x(7)	84	83	85	87	x(13)	x(13)	82	86
	United States [1, 2]	80	81	84	83	x(7)	x(7)	86	85	87	88	x(13)	x(13)	85	82
	OECD average	85	m	86	83	m	m	86	85	90	89	m	m	88	86
	EU22 average	87	m	86	84	m	m	86	86	91	89	m	m	89	87
Partners	Argentina	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Brazil	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	China	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	G20 average	m	m	m	m	m	m	m	m	m	m	m	m	m	m

Note: Data on humanities (except languages), social sciences, journalism and information might refer to the broad field social sciences, journalism and information only. Data in column 14 might differ from data in Table A3.1 column 9 due to differences in country coverage and reference years. See *Definitions* and *Methodology* sections for more information. Data and more breakdowns are available at http://stats.oecd.org/, *Education at a Glance Database*.

1. Year of reference differs from 2021: 2017 for Chile and the United States; 2016 for Iceland and Türkiye.
2. Data refer to bachelor's degree field, even for those with additional tertiary degrees.

Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf). Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/5eisan

Table A3.4. Trends in unemployment and inactivity rates of 25-34 years old, by educational attainment (2019 to 2021)

Inactivity rates are measured as a percentage of all 25-34 year-olds; unemployment rates as a percentage of 25-34 year-olds in the labour force

		Unemployment rate						Inactivity rate					
		Below upper secondary		Upper secondary or post-secondary non-tertiary		Tertiary		Below upper secondary		Upper secondary or post-secondary non-tertiary		Tertiary	
		2019	2021	2019	2021	2019	2021	2019	2021	2019	2021	2019	2021
		(1)	(3)	(4)	(6)	(7)	(9)	(10)	(12)	(13)	(15)	(16)	(18)
OECD	Countries												
	Australia	10	10	5	5	3	4	32	33	15	14	11	10
	Austria	15	23	4	7	4	4	31	27	10	12	11	9
	Belgium	17	23	6	9	4	4	38	38	14	15	9	7
	Canada	12	14	7	9	5	6	36	36	16	17	10	9
	Chile	m	m	m	m	m	m	m	m	m	m	m	m
	Colombia	10	10	12	16	12	15	22	25	16	19	8	8
	Costa Rica	14	20	12	19	9	12	22	23	16	19	10	9
	Czech Republic	13	14	2	4	1	1	34	35	16	17	21	21
	Denmark	10	10	6	4	7	6	37	35	16	17	9	9
	Estonia	7	11	5	6	3	3	26	20	14	12	14	11
	Finland	17	16[b]	7	8[b]	5	5[b]	41	42[b]	17	17[b]	11	8[b]
	France	24	20	11	10	6	6	33	35	15	14	8	7
	Germany	12	11	3	4	3	3	33	34	13	13	9	9
	Greece	30	29	26	20	19	20	23	35	16	22	10	13
	Hungary	11	13	3	4	2	2	34	33	16	11	14	7
	Iceland	6	10	5	7	4	6	16	19	12	14	7	10
	Ireland	13	15	6	9	4	4	44	47	19	21	9	8
	Israel	4	8	5	7	4	5	40	45	26	30	9	11
	Italy	21	21	14	14	12	10	33	36	25	26	23	22
	Japan [1]	m	m	x(7)	x(9)	3[d]	2[d]	m	m	x(16)	x(18)	10[d]	9[d]
	Korea	6	6	7	7	6	5	34	31	29	32	19	20
	Latvia	14	15	7	10	4	5	24	30	14	15	7	8
	Lithuania	19	19	8	9	3	4	33	30	14	13	4	5
	Luxembourg	c	c	c	c	4	4	c	c	8	10	7	10
	Mexico	3	4	4	5	6	6	31	32	25	26	14	15
	Netherlands	7	6	3	4	2	3	31	24	12	11	6	6
	New Zealand	7	7	4	4	2	2	26	27	15	14	9	8
	Norway	8	11	3	4	3	3	31	29	13	13	8	9
	Poland	13	12	4	4	3	3	46	43	18	15	9	7
	Portugal	9	11	6	10	7	8	14	22	9	12	7	9
	Slovak Republic	37	39	6	8	3	5	47	58	14	10	18	13
	Slovenia	13	15	6	6	5	5	29	32	9	11	6	7
	Spain	23	28	17	18	12	13	17	18	15	16	11	10
	Sweden	17	25	5	6	4	6	22	19	13	13	9	9
	Switzerland	10	14[b]	5	6[b]	4	4[b]	23	24[b]	9	8[b]	6	6[b]
	Türkiye	16	14	15	13	15	14	38	40	28	30	15	18
	United Kingdom [2]	7	9	3	4	2	3	28	30	13	13	7	7
	United States	10	11	6	10	2	4	37	40	21	24	13	12
	OECD average	13	15	7	8	5	6	31	32	16	17	11	10
	EU22 average	16	18	7	8	5	6	32	33	14	15	11	10
Partners	Argentina	14	13	11	11	5	5	26	27	20	22	6	7
	Brazil	15	18	13	15	8	9	26	29	16	19	7	10
	China	m	m	m	m	m	m	m	m	m	m	m	m
	India	3	m	8	m	17	m	43	m	39	m	36	m
	Indonesia	3	3	4	5	5	6	28	30	23	26	13	16
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa	43	m	33	m	21	m	31	m	24	m	12	m
	G20 average	13	m	10	m	7	m	33	m	21	m	13	m

Note: See *Definitions* and *Methodology* sections for more information. Data and more breakdowns are available at http://stats.oecd.org/, *Education at a Glance Database*. Additional columns showing 2020 data on the unemployment and inactivity rates of 25-34 year-olds are available for consultation on line (see StatLink below).
1. Data for tertiary education include upper secondary or post-secondary non-tertiary programmes (less than 5% of the adults are in this group).
2. Data for upper secondary attainment include completion of a sufficient volume and standard of programmes that would be classified individually as completion of intermediate upper secondary programmes (9% of adults aged 25-64 are in this group).
Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/retq1l

Table A3.5. Unemployment rates for adults by educational attainment and distribution of unemployment by its duration (2021)

Percentage of unemployed 25-64 year-olds among 25-64 year-olds in the labour force

		Below upper secondary				Upper secondary or post-secondary non-tertiary				Tertiary			
		Unemployment rate	Distribution of unemployment by its duration			Unemployment rate	Distribution of unemployment by its duration			Unemployment rate	Distribution of unemployment by its duration		
			Less than 3 months	3 months to less than 12 months	12 months or more		Less than 3 months	3 months to less than 12 months	12 months or more		Less than 3 months	3 months to less than 12 months	12 months or more
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
OECD	Countries												
	Australia	7	x(3)	61[d]	39	5	x(7)	60[d]	40	3	x(11)	70[d]	30
	Austria	14	27	32	41	5	32	33	34	4	35	34	32
	Belgium	13	17	23	60	6	25	30	45	3	28	31	41
	Canada	11	46	33	21	8	46	36	18	5	46	35	19
	Chile [1]	6	73	23	3	7	73	24	3	6	68	25	7
	Colombia	8	x(3)	85[d]	15	14	x(7)	81[d]	19	12	x(11)	75[d]	25
	Costa Rica	14	58	21	21	15	46	27	27	8	40	33	26
	Czech Republic	12	18	33	49	3	25	44	30	1	28	48	24
	Denmark	7	31	31	38	4	32	37	31	4	35	41	25
	Estonia	12	38	34	28	6	31	41	28	4	36	38	26
	Finland	14[b]	x(3)	65[b,d]	35[b]	7[b]	x(7)	73[b,d]	27[b]	4[b]	x(11)	66[b,d]	34[b]
	France	12	26	30	44	7	33	32	35	5	35	36	29
	Germany	7	26	30	44	3	27	33	40	2	34	37	30
	Greece	17	9	25	67	15	9	24	67	11	14	26	60
	Hungary	10	30	32	38	3	32	35	33	1	39	37	24
	Iceland	m	m	m	m	m	m	m	m	m	m	m	m
	Ireland	9	17	27	56	6	26	32	42	4	31	35	35
	Israel	6	8	35	57	6	9	32	59	4	8	31	61
	Italy	12	15	20	65	8	19	23	59	5	25	28	47
	Japan	m	m	m	m	m	m	m	m	2	m	m	m
	Korea	m	m	m	m	m	m	m	m	m	m	m	m
	Latvia	14	20	33	46	8	31	40	30	5	28	43	29
	Lithuania	15	31	37	32	9	37	36	27	4	39	42	20
	Luxembourg	6	c	c	c	4	c	c	c	4	c	30	38
	Mexico	3	78	17	4	4	68	26	6	4	63	28	9
	Netherlands	4	30	37	32	3	34	31	34	3	45	34	21
	New Zealand	4	39	83	17	3	41	84	16	2	50	84	16
	Norway	7	27	32	40	3	24	34	42	2	31	36	33
	Poland	7	22	45	32	3	25	44	31	2	30	45	25
	Portugal	6	x(3)	43[d]	57	6	x(7)	52[d]	48	4	x(11)	60[d]	40
	Slovak Republic	38	4	17	80	6	13	34	53	3	11	38	51
	Slovenia	8	11	32	57	5	20	30	50	3	22	35	43
	Spain	20	25	28	47	14	25	30	45	9	28	32	40
	Sweden	21	19	43	39	5	31	36	33	4	35	37	28
	Switzerland	10	x(3)	50[d]	50	5	x(7)	51[d]	49	3	x(11)	61[d]	39
	Türkiye	10	x(3)	72[d]	28	11	x(7)	64[d]	36	10	x(11)	54[d]	46
	United Kingdom [2]	6	23	33	43	3	31	34	35	3	39	39	23
	United States	10	36	39	25	7	37	41	22	4	31	42	27
	OECD average	11	29	38	40	6	32	40	35	4	34	42	31
	EU22 average	13	22	33	47	6	27	37	39	4	30	39	34
Partners	Argentina	9	x(3)	60[d]	40	8	x(7)	54[d]	46	3	x(11)	56[d]	43
	Brazil	12	27	33	40	12	21	32	47	7	16	36	48
	China	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	2	38	37	25	3	24	38	37	3	21	34	45
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m	m	m	m	m	m	m
	G20 average	m	m	m	m	m	m	m	m	m	m	m	m

Note: See *Definitions* and *Methodology* sections for more information. Data and more breakdowns are available at http://stats.oecd.org/, *Education at a Glance Database*.
1. Year of reference differs from 2021: 2017 for Chile.
2. Data for upper secondary attainment include completion of a sufficient volume and standard of programmes that would be classified individually as completion of intermediate upper secondary programmes (12% of adults aged 25-64 are in this group).
Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

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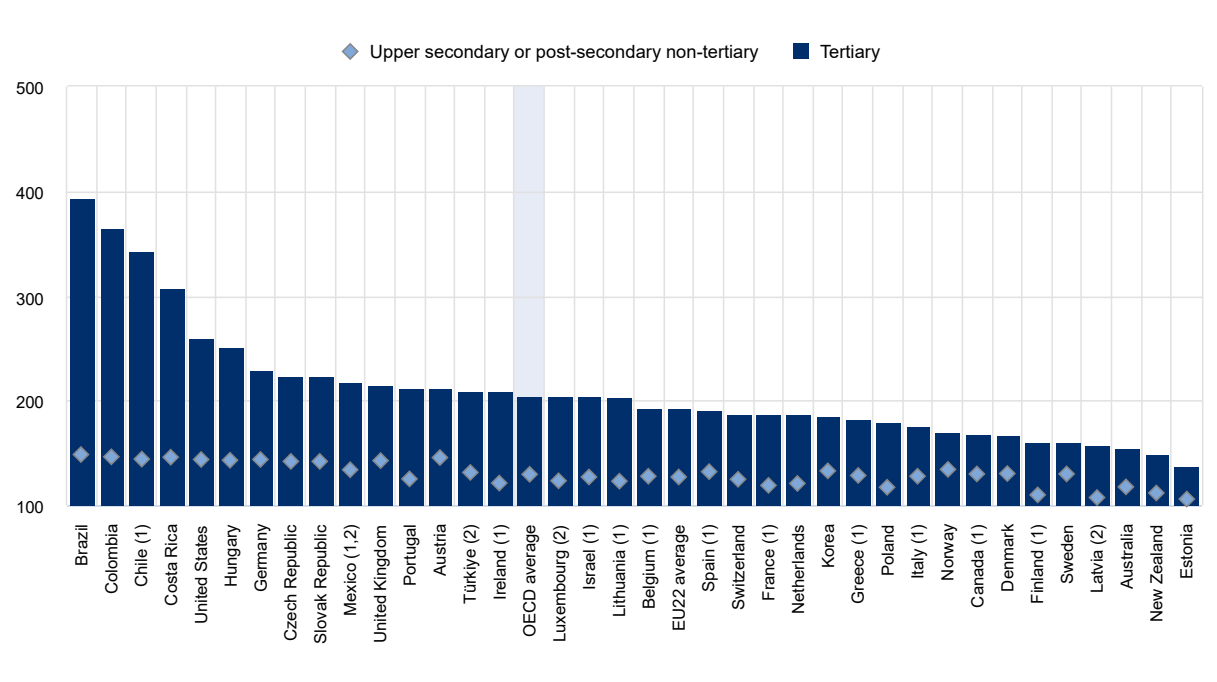
Indicator A4. What are the earnings advantages from education?

Highlights

- Greater educational attainment yields better earnings and this holds true for higher levels of tertiary attainment in most countries. On average across the OECD, full-time full-year workers who attained short-cycle tertiary education earned 20% more than those with upper secondary attainment in 2020. This earnings advantage increases to 44% among those who attained a bachelor's or equivalent qualification and to 88% among those with a master's or doctoral or equivalent degree.
- The earnings advantage for attaining at least a bachelor's or equivalent degree increases with age, probably because of seniority at work. On average across OECD countries, 25-34 year-olds with at least a bachelor's or equivalent degree and working full time and for the full year earn 39% more than their peers with upper secondary attainment, while 45-54 year-olds earn 75% more.
- Among tertiary-educated workers, those with a medical or dental degree or with a degree in the science, technology, engineering and mathematics (STEM) fields enjoy the highest earnings advantages. Despite being essential during the COVID-19 pandemic, workers with a degree in nursing or associated health field receive one of the smallest wage premiums among the eight OECD countries with available data.

Figure A4.1. Relative earnings of 25-64 year-old adults, by educational attainment (2020)

In per cent; full- and part-time workers; below upper secondary = 100



Note: There are cross-country differences in the inclusion/exclusion of zero and negative earners. See *Definitions* and *Methodology* sections for more information
1. Year of reference differs from 2020. Refer to the source table for more details.
2. Earnings net of income tax.
Countries are ranked in descending order of the relative earnings of tertiary-educated adults.
Source: OECD (2022), *Education at a Glance Database*, http://stats.oecd.org/. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

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Context

Higher levels of education usually translate into better employment opportunities (see Indicator A3) and higher earnings. The potential to earn more over their careers can be an important incentive for individuals to pursue education and training.

More young adults hold a tertiary degree today than ever before (see Indicator A1), and the expansion of tertiary education is ongoing. In general, labour markets continue to absorb this increasing supply, but there are substantial differences in earnings by field of study among tertiary-educated workers. Apart from cultural biases, the earnings differences by field of study may signify that some sectors and some skills are more in demand than others. In an unpredictable and changing world, it is important that education provides young people with knowledge and skills that meet labour-market and societal needs.

Variations in earnings also reflect factors other than educational attainment. For instance, the gender pay gap persists regardless of level of educational attainment and field of study. In addition, in some countries with a relatively small tertiary-educated population, the distribution of earnings is more skewed towards tertiary-educated workers than in other countries, leading to wide inequalities that can be linked to issues of social mobility.

Other findings

- In nearly all OECD and partner countries, there is persistent inequality in earnings between men and women. On average across the OECD, the gender pay gap is slightly wider among tertiary-educated workers, reflecting a more dispersed earnings distribution. In recent years, awareness of the differences in pay between men and women has risen, and the gap is tending to narrow in many OECD countries.
- The likelihood of earning more than the overall median increases with educational attainment and the rise is even more striking for workers earning more than twice the overall median. Among OECD countries, the distribution of earnings among tertiary-educated workers are the most skewed in Chile, Costa Rica and Mexico.
- In some countries, very large earning premiums associated with tertiary degrees may be connected to relatively high levels of income inequality, which in turn is reflected in greater demands for redistributive policies among adults without tertiary education.

Note

This indicator presents three types of relative earnings. The first uses the earnings of adults with below upper secondary attainment as a baseline, the second uses men's earnings as a baseline and the third uses the earnings of adults with upper secondary attainment as a baseline. In all cases, given the focus on relative earnings, any increase or decrease in the results could reflect a change in the interest group (numerator) or in the baseline group (denominator). Individuals with zero and/or negative earnings are considered as earners and they are taken into consideration in the calculation of relative earnings. To measure how skewed an earnings distribution is, this indicator considers the degree to which earnings are centred around the overall country median among groups with different levels of educational attainment. Overall median earnings refer to the earnings of all workers, without adjusting for differences in hours worked. Individuals with negative earnings should also be taken into account in the calculation of the overall median earnings.

Analysis

Relative earnings and educational attainment

Earnings advantages from education for all workers

Higher levels of educational attainment carry greater earnings advantages. On average across OECD countries, 25-64 year-old workers with upper secondary or post-secondary non-tertiary attainment earn 29% more than those with only below upper secondary attainment. This earnings premium ranges from below 10% in Estonia and Latvia to above 45% in Brazil, Colombia and Costa Rica (Figure A4.1).

The premium for completing a tertiary degree is much higher. Across the OECD, tertiary-educated workers earn twice as much as those with below upper secondary attainment. Country differences also widen when looking at the relative earnings associated with tertiary attainment. Tertiary-educated workers earn less than 50% more than those with below upper secondary education in Estonia and New Zealand, but the premium can be between twice and just under three times earnings in Brazil, Colombia, Chile and Costa Rica (Figure A4.1).

It is clear that higher educational attainment leads to better earnings, but interpreting relative earnings by educational attainment needs to be done with cautions. First, because earnings benefits are expressed in relative terms, greater educational attainment in countries with low earnings advantages can still provide relatively high absolute benefits. This is the case for the Netherlands and Switzerland, where relative earnings premiums are below the OECD average. However, because wage levels are high, the absolute differences between the earnings of workers with below upper secondary attainment and tertiary attainment in these two countries are among the five highest across the OECD (see Table X3.A4.4 from Annex 3 and Figure A4.1). Second, the relative supply and demand of tertiary-educated workers influences the earnings advantage from education in the labour market. Countries with very high relative earnings for tertiary attainment tend to have a smaller share of tertiary-educated individuals (see Indicator A1). Third, minimum wage laws, the strength of labour unions, the coverage of collective-bargaining agreements, the relative incidence of part-time and seasonal work, and the number of hours worked are likely to affect earnings. Box A4.1 also provides some insights on how adults without tertiary attainment perceive their earnings gap with tertiary-educated workers.

The analysis in this section has provided an overall picture of the earnings advantages from education and covers all adults with earnings from work. The rest of the analysis on relative earnings mainly focuses on full-time full-year workers to ensure better cross-country comparability.

Gender disparities in earnings for full-time full-year workers

Over the past decade, gains in educational attainment among women have contributed to a worldwide increase in their participation in the labour force (see Indicators A1 and A3). However, in nearly all OECD and partner countries, earnings inequality persists between men and women, with women not earning as much as men.

Although higher levels of educational attainment narrow gender differences in employment rates (see Indicator A3), the gender gap in earnings does not vary much across educational attainment levels. On average across OECD countries, tertiary-educated full-time full-year female workers in 2020 earned only 77% of their male counterparts' earnings, compared to 80% among those with upper secondary or post-secondary non-tertiary attainment, and 79% among those with below upper secondary attainment (Table A4.3). Costa Rica is the only exception where tertiary-educated women working full-time full-year earn slightly more than their male peers. As women are more likely to work part time and/or part year than men, the gender differences in earnings are wider among all workers than among full-time full-year workers (OECD, 2022[1]).

Differences in the choice of field of study between men and women are often considered to be one reason for the gender pay gap for those with a tertiary qualification. For example, men are more likely than women to study in the fields of science, technology, engineering and mathematics (STEM), which are associated with higher earnings, while a larger share of women study fields associated with relatively lower earnings, including education, and arts and humanities (see Indicator B4). However, even when comparing workers with a tertiary degree in the same field of study, women's work is less well remunerated than men's (OECD, 2022[1]).

Empirical research has found that, beyond social norms and gender stereotypes, the motherhood penalty seems to be an important contributor to wage differences between men and women in many OECD countries. On average across OECD countries, the wage gap between men and women is narrower for younger full-time full-year workers (25-34 year-olds) than their older peers, regardless of educational attainment (Table A4.3 and (OECD, 2022[1])). Many countries have introduced a mix of policies to bridge the gender pay gap, such as pay transparency laws, non-transferable paternity leave and reductions

in the effective marginal tax rates for second earners (Ciminelli, Schwellnus and Stadler, 2021[2]). In recent years, wage differentials between men and women have tended to narrow across OECD countries (OECD, 2022[1]).

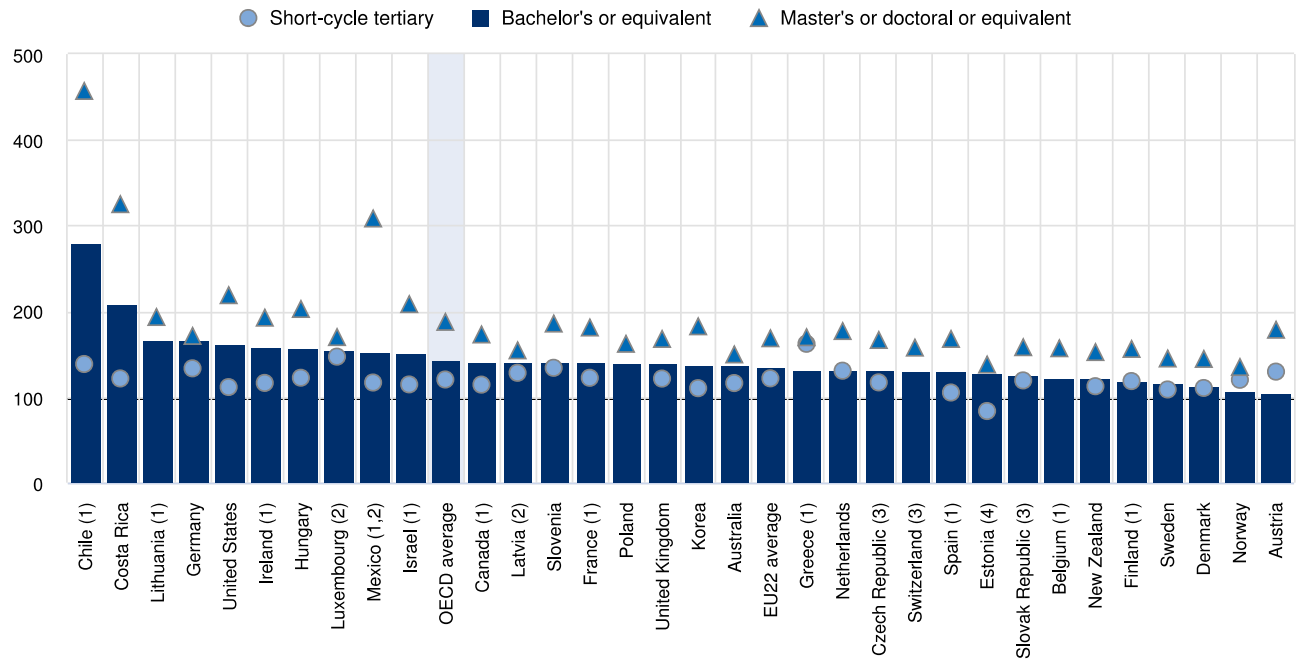
Relative earnings of tertiary-educated full-time full-year workers

By level of tertiary attainment

The earnings advantage of tertiary-educated workers varies considerably for different levels of tertiary attainment. Due to the large differences in earnings between tertiary-educated workers and those with below upper secondary attainment, the analysis in this section uses earnings for workers with upper secondary attainment as the baseline to better illustrate the relative position of each country.

Figure A4.2. Relative earnings of tertiary-educated adults, by level of tertiary attainment (2020)

25-64 year-old full-time full-year workers; in per cent; upper secondary education = 100



Note: There are cross-country differences in the inclusion/exclusion of zero and negative earners. See *Definitions* and *Methodology* sections for more information.
1. Year of reference differs from 2020. Refer to the source table for more details.
2. Earnings net of income tax.
3. Index 100 refers to the combined ISCED levels 3 and 4 in the ISCED 2011 classification. See the *Reader's Guide* for the list of ISCED levels.
4. Interpretation of the relative earnings of short-cycle tertiary education needs to be done with caution. There have been no graduates with this degree since 2013/14.
Countries are ranked in descending order of the relative earnings of 25-64 year-olds who attained a bachelor's or equivalent degree.
Source: OECD (2022), Table A4.1. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

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In most OECD and partner countries, the earnings advantage tends to increase with the level of tertiary attainment. On average across OECD countries, full-time full-year workers with a short-cycle tertiary degree as their highest level of education earned 20% more than those with upper secondary attainment in 2020. The advantage increases to 44% among those with a bachelor's or equivalent degree and to 88% among those with a master's or doctoral or equivalent degree (Figure A4.2).

There are some exceptions to this general pattern. Estonia is the only country where full-time full-year workers who attained short-cycle tertiary education earn less than those with upper secondary attainment. However, it is noteworthy that no one

has graduated with a short-cycle tertiary degree in Estonia since 2013/14. In Austria, Greece and Norway, the earnings of full-time full-year workers who attained a bachelor's or equivalent qualification are lower than for those with short-cycle tertiary attainment (Figure A4.2).

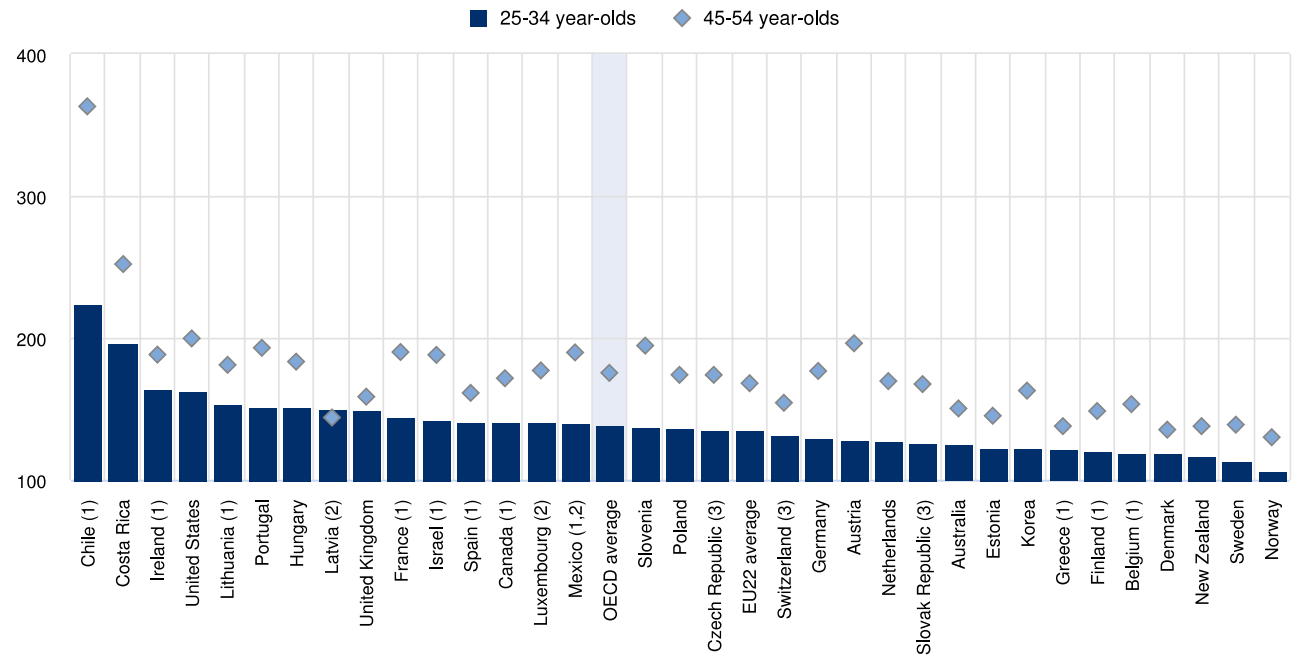
By age group

The earnings advantage from higher levels of educational attainment tends to increase throughout a person's working life. In some OECD countries, short-cycle tertiary education is often considered a stepping stone into further learning and holding a short-cycle tertiary degree as the highest level of educational attainment has become less common among younger generations (see Indicator A1 and (OECD, 2022[3])). The analysis in this section compares the earnings advantages across age groups and countries among adults with at least a bachelor's or equivalent degree compared with adults with upper secondary attainment.

In most countries, earnings increase with age for workers with all levels of educational attainment, but the increase in pay is more pronounced among tertiary-educated workers (Annex 3, Tables X3.A4.4 and A4.5). On average across OECD countries, among full-time full-year workers, younger adults (25-34 year-olds) with at least a bachelor's or equivalent degree earned 39% more than their peers with upper secondary attainment in 2020. Among 45-54 year-olds, this premium rises to 75% more. Latvia is the only country where younger adults enjoy a higher earnings advantage from at least a bachelor's or equivalent degree than their older peers. For the other OECD countries, although earnings advantages increase with age, there are sizable differences among countries, ranging from less than 20 percentage points between these two age groups in Denmark, Greece and the United Kingdom to over 50 percentage points in Austria, Costa Rica and Slovenia, and more than 100 percentage points in Chile (Figure A4.3).

Figure A4.3. Relative earnings of adults with at least a bachelor's or equivalent degree, by age group (2020)

In per cent; full-time full-year workers per age group; upper secondary education = 100



Note: There are cross-country differences in the inclusion/exclusion of zero and negative earners. See *Definitions* and *Methodology* sections for more information.
1. Year of reference differs from 2020. Refer to the source table for more details.
2. Earnings net of income tax.
3. Index 100 refers to the combined ISCED levels 3 and 4 in the ISCED 2011 classification. See the *Reader's Guide* for the list of ISCED levels.
Countries are ranked in descending order of the relative earnings of 25-34 year-olds with at least a bachelor's or equivalent degree.
Source: OECD (2022), *Education at a Glance Database*, http://stats.oecd.org/. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

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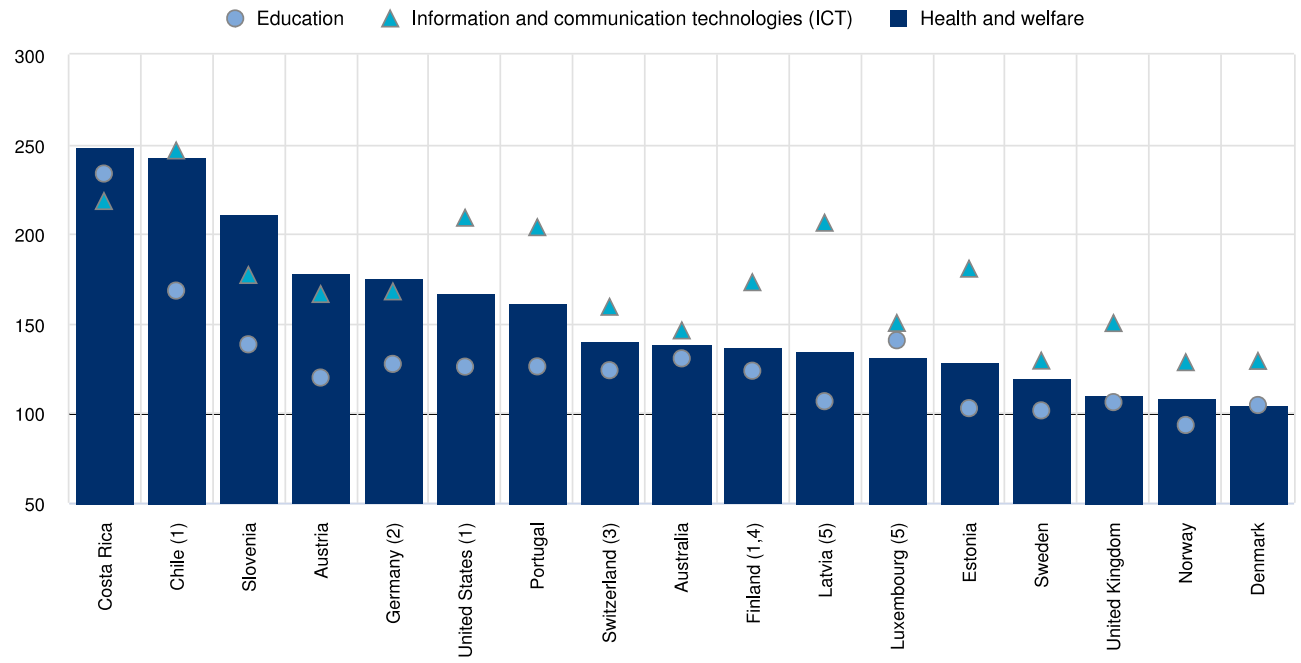
The larger earnings advantage for older age groups could be explained by their growing work experience and responsibilities (OECD, 2019[4]). Tertiary attainment is often a prerequisite for moving up the career ladder, and some workers may pursue a tertiary degree after starting their career (see Indicator A7). All these factors contribute to the increasing earnings advantages of tertiary-educated workers over time. Since these advantages are expressed in relative terms, it could also mean that the earnings advantage has fallen for younger generations with the increasing supply of tertiary-educated workers in the labour market. However, between 2013 and 2020, the earnings advantage for younger adults having at least a bachelor's or equivalent degree has changed by less than 5 percentage points in most OECD countries with available trend data (OECD, 2022[1]). Although these data cover less than a decade, the wage differential in favour of older generations seems to relate more to their seniority at work.

By field of study

A tertiary degree yields better earnings, but there are substantial differences across fields of study. Among the 17 OECD countries with available data, the combined STEM fields (i.e. science, technology, engineering and mathematics) are most commonly associated with the highest earnings. Only in Austria, Costa Rica and Slovenia do the earnings associated with a tertiary degree in health and welfare exceed the earnings from STEM fields combined. In contrast, degrees in the fields of education and of arts and humanities (except languages), social sciences, journalism and information yield relatively low earnings (Figure A4.4 and Table A4.4).

Figure A4.4. Relative earnings of tertiary-educated adults aged 25-64, by field of study (2020)

25-64 year-old full-time full-year workers; in per cent; upper secondary education (all fields) = 100



Note: There are cross-country differences in the inclusion/exclusion of zero and negative earners. See *Definitions* and *Methodology* sections for more information.
1. Year of reference differs from 2020. Refer to the source table for more details.
2. Earnings refer to academic programmes only.
3. Index 100 refers to the combined ISCED levels 3 and 4 in the ISCED 2011 classification. See the *Reader's Guide* for the list of ISCED levels.
4. Earnings refer to full- and part-time workers.
5. Earnings net of income tax.
Countries are ranked in descending order of the relative earnings of 25-64 year-olds with a tertiary degree in health and welfare.
Source: OECD (2022), Table A4.4. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

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Disaggregating earnings advantages by narrower fields of study helps to highlight the differences that may exist within a broader field. In the eight OECD countries with available data, although the differences in earnings among the individual STEM fields are quite small except in Luxembourg, there are large differences within the broad field of health and welfare. Full-time full-year workers with a medical or dental degree earn 50% more than those with a degree in nursing or associated health, except in Germany and Latvia. In Norway, workers with a tertiary degree in nursing or associated health fields even earn slightly less than workers with upper secondary attainment (all fields combined). The COVID-19 pandemic is challenging many countries' health systems and has underscored the lack of healthcare workers. Despite their importance, compared to all other fields of study, the earnings advantage associated with a tertiary degree in nursing or associated health fields is in the bottom three among the eight OECD countries with available data (Table A4.4).

The high earnings associated with some fields of study may relate to a potential mismatch between the supply of current graduates and labour-market needs. With rapid digitalisation, the relatively high earnings associated with an information and communication technologies (ICT) degree may reflect the imbalance between strong labour-market demand for ICT workers and the very small share of graduates who studied this field (see Indicator A1). However, supply and demand could instead be better aligned in the labour market by exploring other types of skills that may be substitutes for an ICT degree. For example, using job posting data, a recent study suggests that tertiary-educated workers with an educational background in engineering or business management seem to have technical skills that are suitable for filling vacancies in some ICT occupations (Brüning and Mangeol, 2020[5]).

Box A4.1. Earnings differences by educational attainment and support for income redistribution

The earnings differences arising from greater educational attainment create incentives for students to spend their early adulthoods pursuing higher educational degrees. Over the past decades, these earnings advantages have widened due to technological process and globalisation in most developed countries. In 2020, on average across OECD countries, tertiary-educated adults working full time and full year earn 63% more than their peers without a tertiary degree (Figure A4.5). If individuals are aware about the existence of earnings differences by educational attainment, however, how do they perceive these differences?

The OECD *Risks That Matter Survey* (2020) asked respondents whether they thought governments should reduce income differences between the rich and the poor by collecting taxes and providing social benefits. On average across countries participating in this survey, 62% of respondents believe that governments should do more, or much more to reduce income inequality – the possible response options were "much less", "less", "about the same as now", "more" and "much more". Respondents could also choose "can't choose" (OECD, 2021[6])

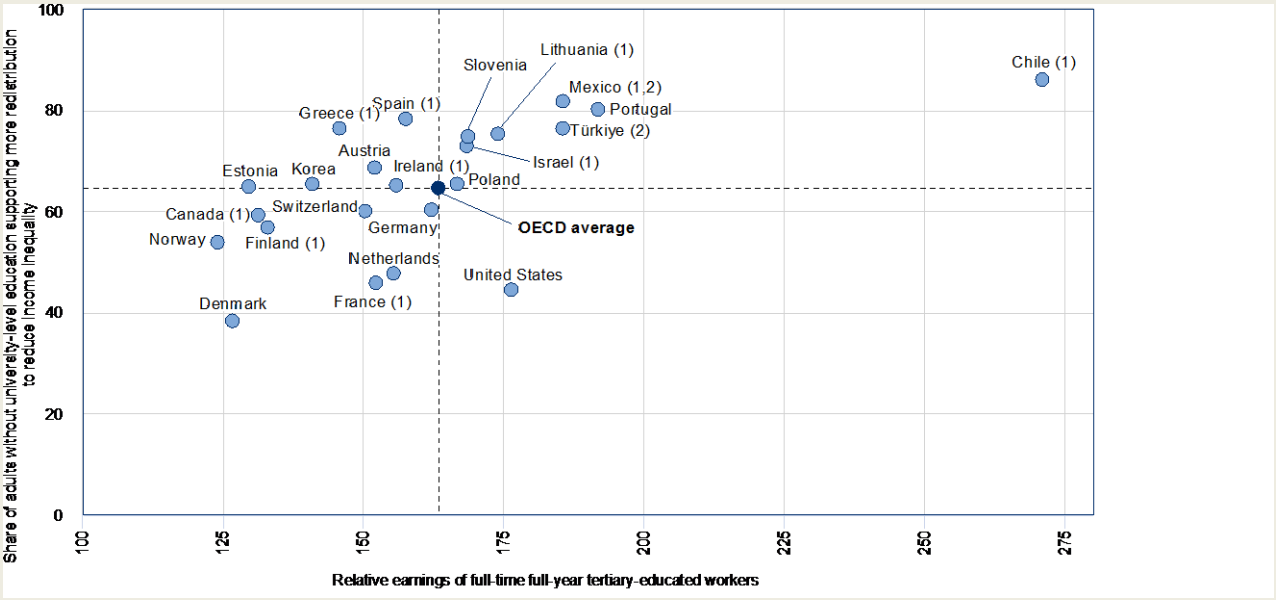
The results also reveal some differences by education level: on average, 65% of adults without any university-level education support more redistribution from the rich to the poor, compared to 61% of those with some university-level education (OECD, 2021[6]). Note that the education level mentioned here is not the same as the attainment levels used in the main analysis. Adults with some university-level education includes some who might not have completed it and therefore might not hold a tertiary degree.

Although income inequality is a broader concept than differences in earnings, labour income is still the main contributor to pre-tax income inequality (including differences in capital income) (OECD, 2012[7]). The notions of "rich" and "poor" used in the *Risks that Matter Survey* are conceptual and do not have definitions. Using the earnings differences between full-time full-year workers with and without tertiary attainment as a proxy for income inequality, Figure A4.5 shows that in general, a higher earnings premium from tertiary education is associated with greater support for more redistribution among adults without university-level education.

In Denmark and France, where the earnings premium of tertiary education is relatively low, adults without university-level education are among the least likely to reply that government should be doing more or much more to reduce income differences. Canada, Finland, Germany, the Netherlands, Norway and Switzerland also fit into this pattern, with relatively low earnings differences and less support for government intervention to reduce income gaps (Figure A4.5). These countries tend to already have relatively high levels of income redistribution and/or relatively low level of pre-tax income inequality, combined with relatively high earnings for workers without a tertiary degree (see Table X3.A4.4 from Annex 3 and (OECD, 2021[8])).

Figure A4.5. Relative earnings of tertiary-educated workers and share of adults without university-level education supporting more redistribution to reduce income inequality (2020)

Earnings of full-time full-year workers without tertiary attainment = 100



1. Year of reference for the relative earnings differs from 2020. Refer to the source table for more details.
2. Earnings net of income tax.
Source: OECD (2022), *Risks that Matter Survey* (http://oe.cd/RTM) and *Education at a Glance Database*, http://stats.oecd.org/. See *Source* section for more information and Annex 3 for (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

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The opposite situation is observed in Chile, Israel, Lithuania, Mexico, Poland, Portugal, Slovenia and the Republic of Türkiye. In Chile, the earnings premium of tertiary education is the highest among all countries shown in the figure (exceeding 170%), and almost nine in ten adults without tertiary education would support more redistributive measures from their governments. This is probably related to the fact that Chile has the lowest level of income redistribution after government intervention among OECD countries (OECD, 2021[8]). The United States stands out for its relatively low level of support for more redistribution among non-tertiary educated adults despite relatively high earnings differentials (Figure A4.5). A 2019 survey in the United States reveals that other issues ((e.g. health care affordability, terrorism and gun violence) are rated as higher priorities than reducing income inequality (Pew Research Center, 2020[9]).

Share of working students, by age group

Some young adults combine education with some forms of employment, and they receive remuneration from work before graduation (see Indicator A2). On average across OECD countries, 40% of students aged between 15 and 24 have income from employment over a year. There are large variations across countries, ranging from less than 10% in Belgium and Luxembourg to over 70% in Canada, Costa Rica, Denmark, Mexico and Türkiye (OECD, 2022[1]).

The costs of staying in the education system is likely to increase with age and in all OECD countries with available data, 25-29 year-old students are more likely to have paid jobs than 15-24 year-old students. On average across the OECD, 67% of 25-29 year-old students receive income from employment. This may partly be because, as students get older, they may enrol in higher levels of tertiary education; in some countries, tuition fees are higher for master's or doctoral or equivalent degrees than for lower tertiary programmes (see Indicator C5). It may also be the case that some 25-29 year-olds have already started working and are returning to education while continuing their careers. There is less cross-country variation in the share of working students among 25-29 year-olds than among 15-24 year-olds: the share of older students with income from employment ranges from 31% in Belgium to 90% in Norway (OECD, 2022[1]).

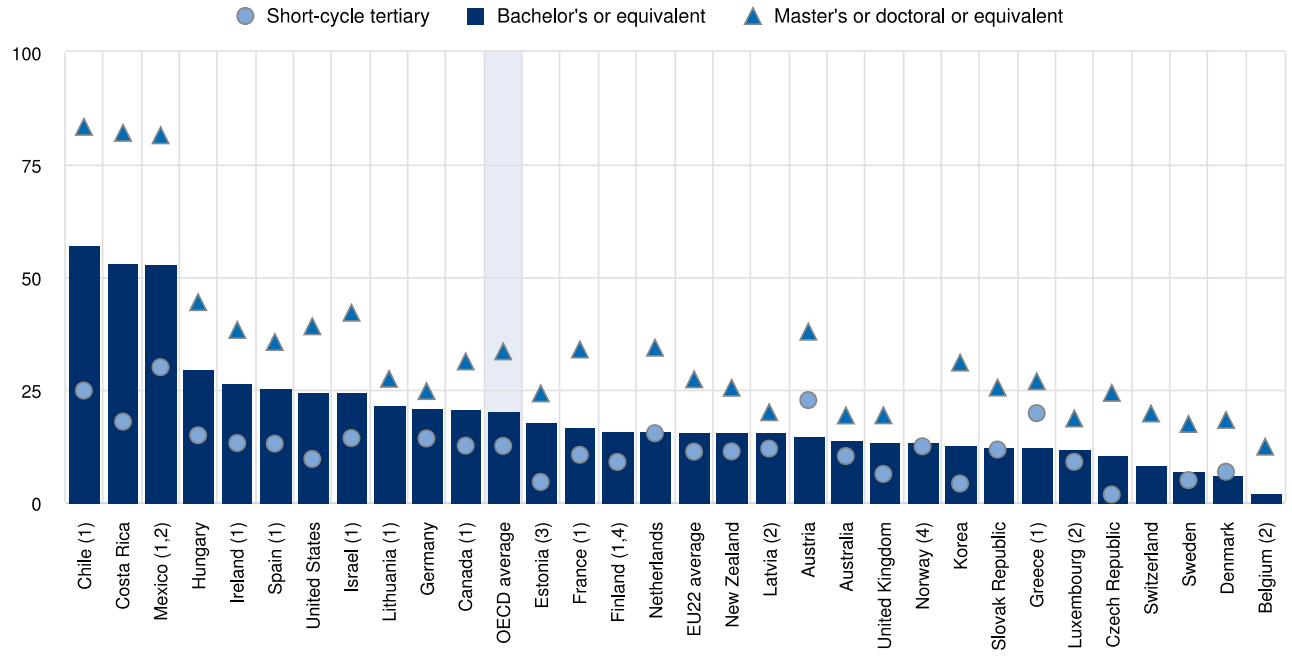
Distribution of earnings relative to the median, by educational attainment

Similar to relative earnings, the likelihood of earning more than the overall median increases with educational attainment. On average across OECD countries, 26% of workers with below upper secondary attainment earn more than the median, compared to 43% of those with upper secondary or post-secondary non-tertiary attainment. This share reaches 68% among workers with tertiary attainment (OECD, 2022[1]).

The differences are more considerable when looking at the share of workers earning more than twice the median. Across OECD countries, an average of 23% of tertiary-educated workers earn more than twice the median, compared to only 7% of those with upper secondary or post-secondary non-tertiary attainment and 3% of those with below upper secondary attainment (Table A4.2).

Figure A4.6. Percentage of tertiary-educated adults earning more than twice the median, by level of educational attainment (2020)

25-64 year-old full- and part-time workers



Note: Median refers to the median earnings from work for 25-64 year-olds with earnings (full- and part-time workers) for all levels of educational attainment. There are cross-country differences in the inclusion/exclusion of zero and negative earners. See *Definitions* and *Methodology* sections for more information.
1. Year of reference differs from 2020. Refer to the source table for more details.
2. Earnings net of income tax.
3. Interpretation of the percentage associated with short-cycle tertiary education needs to be done with caution. There have been no graduates with this degree since 2013/14.
4. Data for bachelor's or equivalent degree includes data from higher levels of tertiary education.
Countries are ranked in descending order of the percentage of adults with a bachelor's or equivalent degree earning more than twice the median.
Source: OECD (2022), *Education at a Glance Database*, http://stats.oecd.org/. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

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Among tertiary-educated workers, the distribution of earnings can vary considerably depending on the level of tertiary attainment. In nearly all OECD and partner countries, the share of workers earning more than twice the median increases at each level from short-cycle tertiary, to bachelor's or equivalent and master's or doctoral or equivalent degrees. On average across OECD countries, 13% of workers with a short-cycle tertiary degree earn more than twice the median. The share

increases to 20% among those with a bachelor's or equivalent degree and to 33% among those with a master's or doctoral or equivalent degree (Figure A4.6).

In some countries, the earnings distribution is more skewed than in others. For example, in Chile, Costa Rica and Mexico, the share of tertiary-educated workers earning more than twice the median is at least twice the OECD average (e.g. at least 46% compared to the average of 23%) (Table A4.2). In these countries, the tertiary-educated share of the population is also much lower than the OECD average (see Indicator A1). A strongly skewed earnings distribution among tertiary-educated workers may signal barriers to pursuing higher levels of education among students with disadvantaged socio-economic background.

Definitions

Adults refer to 25-64 year-olds; **younger adults** refer to 25-34 year-olds.

Educational attainment refers to the highest level of education successfully completed by an individual.

Fields of study are categorised according to the ISCED Fields of Education and Training (ISCED-F 2013). See the *Reader's Guide* for a full listing of the ISCED fields used in this report and Annex 3 for more details.

Levels of education: See the *Reader's Guide* at the beginning of this publication for a presentation of all ISCED 2011 levels.

Individuals with zero earnings refer to individuals who have earnings but the result of their business activities is exactly zero.

Individuals with negative earnings refer to individuals who reported deficit in business activities.

Methodology

The analysis of relative earnings of the population with specific educational attainment and of the distribution of earnings includes full-time and part-time workers. It does not control for hours worked, although the number of hours worked is likely to influence earnings in general and the distribution in particular. The analysis of differences in earnings between men and women includes full-time workers only. For the definition of full-time earnings, countries were asked whether they had applied a self-designated full-time status or a threshold value for the typical number of hours worked per week.

Earnings data are based on an annual, monthly or weekly reference period, depending on the country. This Indicator presents annual data, and earnings data with a reference period shorter than a year are adjusted. Please refer to Table X3.A4.1 in the Annex 3 for more information on the adjustment methods. Data on earnings are before income tax for most countries. Earnings of self-employed people are excluded for many countries and, in general, there is no simple and comparable method to separate earnings from employment and returns to capital invested in a business.

This indicator does not take into consideration the impact of effective income from free government services. Therefore, although incomes could be lower in some countries than in others, the state could be providing both free health care and free schooling, for example.

Data presented at the country level are average earnings, but there can be significant variations for individuals. Data shown in Table A4.2, "Distribution of workers by educational attainment and level of earnings relative to the median earnings (2020)", illustrate the earnings variations among individuals. Median earnings are for all adults with earnings from work, regardless of educational attainment.

The total average for earnings (men plus women) is not the simple average of the earnings figures for men and women. Instead, it is the average based on earnings of the total population. This overall average weights the average earnings separately for men and women by the share of men and women with different levels of educational attainment.

Category totals for fields of study may not be equivalent to the sum of the subcategories because some programmes cannot be classified into a specific subcategory but are included in the total. In addition, data on humanities (except languages), social sciences, journalism and information refers to the field social sciences, journalism and information only in Australia, Austria, Chile, Luxembourg and the United Kingdom.

In the earnings data, individuals with zero and/or negative earnings should be reported as earners. Individuals with negative earnings should also be taken into account in the calculation of the overall median earnings. However, data on individuals with zero and/or negative earnings are not available for all countries. Individuals with zero earnings are included for Belgium, Canada, Germany, Ireland, New Zealand, Norway, Sweden, Switzerland, Türkiye and the United States. Individuals with

negative earnings are included for Belgium, Canada, Denmark, Italy, New Zealand, Norway, Spain, Sweden and the United States. Refer to the *Definitions* section for the definition of individuals with zero and negative earnings.

The shares of working students are not comparable with the values presented in Indicator A2, due to differences in the reference period, age group and the definition of student status. Please refer to Table X3.A4.2 for more information.

Please see the *OECD Handbook for Internationally Comparative Education Statistics 2018* (OECD, 2018[10]) for more information and Annex 3 for country-specific notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

Source

This indicator is based on the data collection on education and earnings by the OECD Labour Market and Social Outcomes of Learning Network (LSO Network). The data collection takes account of earnings for individuals working full time and full year, as well as part time or part year, during the reference period. This database contains data on dispersion of earnings from work and on student earnings versus non-student earnings. The source for most countries is national household surveys such as Labour Force Surveys, the European Union Statistics on Income and Living Conditions (EU-SILC), or other dedicated surveys collecting data on earnings. About one-quarter of countries use data from tax or other registers. Please see Annex 3 for country-specific notes on national sources (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

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Indicator A4 tables

Tables Indicator A4. What are the earnings advantages from education?

Table A4.1	Relative earnings of workers, by educational attainment (2020)
Table A4.2	Distribution of workers by educational attainment and level of earnings relative to the median earnings (2020)
Table A4.3	Women's earnings as a percentage of men's earnings, by educational attainment and age group (2020)
Table A4.4	Relative earnings of tertiary-educated adults, by field of study (2020)

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Cut-off date for the data: 17 June 2022. Any updates on data can be found on line at: http://dx.doi.org/10.1787/eag-data-en. More breakdowns can also be found at http://stats.oecd.org, *Education at a Glance Database*.

Table A4.1. Relative earnings of workers, by educational attainment (2020)

25-64 year-olds with income from employment (full-time full-year workers); upper secondary attainment = 100

		Below upper secondary	Post-secondary non-tertiary	Tertiary			
				Short-cycle tertiary	Bachelor's or equivalent	Master's, doctoral or equivalent	Total
		(1)	(2)	(3)	(4)	(5)	(6)
OECD	Countries						
	Australia	89	108	116	137	150	135
	Austria	79	114	129	106	178	149
	Belgium [1]	90	109 [r]	c	123	157	139
	Canada [1]	85	120	114	143	173	137
	Chile [1]	71	a	138	279	457	241
	Colombia [2]	71	m	x(6)	x(6)	x(6)	237
	Costa Rica	73	c	122	209	325	208
	Czech Republic [2]	67	m	117	131	167	159
	Denmark	89	123	110	114	144	124
	Estonia	94	91	84	128	138	127
	Finland [1]	100	114	119	119	156	134
	France [1]	90	m	122	142	181	149
	Germany	78	116	133	167	171	162
	Greece [1]	81	102	162	132	170	138
	Hungary	82	122	122	157	203	173
	Iceland	m	m	m	m	m	m
	Ireland [1]	98	111	116	158	193	161
	Israel [1]	77	a	115	151	208	160
	Italy [1]	83	m	x(6)	x(6)	x(6)	137
	Japan	m	m	m	m	m	m
	Korea	78	a	110	138	182	135
	Latvia [3]	93	97	128	143	154	147
	Lithuania [1]	92	106	a	167	193	180
	Luxembourg [3]	85	107	147	155	170	163
	Mexico [1, 3]	80	a	117	153	308	158
	Netherlands	86	105	131	132	177	149
	New Zealand	90	96	112	122	152	127
	Norway	85	100	120	107	135	119
	Poland	86	101	m	140	162	157
	Portugal	81	112	103	x(6)	x(6)	170
	Slovak Republic [2]	80	m	119	126	158	154
	Slovenia	83	a	134	142	186	165
	Spain [1]	81	125 [r]	105	130	168	141
	Sweden	87	117	109	116	145	126
	Switzerland [2]	80	m	x(4, 5)	131 [d]	158 [d]	145
	Türkiye [3]	78	a	x(6)	x(6)	x(6)	160
	United Kingdom	73	a	121	140	168	145
	United States	74	m	112	163	219	171
	OECD average	83	m	120	144	188	155
	EU22 average	86	110	122	136	168	150
Partners	Argentina	m	m	m	m	m	m
	Brazil	72	m	x(6)	x(6)	x(6)	267
	China	m	m	m	m	m	m
	India	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m
	G20 average	m	m	m	m	m	m

Note: There are cross-country differences in the inclusion/exclusion of zero and negative earners. See *Definitions* and *Methodology* sections for more information. Data and more breakdowns available at http://stats.oecd.org/, *Education at a Glance Database.*

1. Year of reference differs from 2020: 2019 for Belgium, Canada, Finland, Ireland, Israel and Spain; 2018 for France, Greece, Italy, Lithuania and Mexico; 2017 for Chile.
2. Index 100 refers to the combined ISCED levels 3 and 4 in the ISCED 2011 classification. See the *Reader's Guide* for the list of ISCED levels.
3. Earnings net of income tax.

Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

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Table A4.2. Distribution of workers by educational attainment and level of earnings relative to the median earnings (2020)

Median earnings from work for 25-64 year-olds with earnings (full- and part-time workers) for all levels of educational attainment

		Below upper secondary					Upper secondary or post-secondary non-tertiary					Tertiary				
		At or below half the median	More than half the median but at or below the median	More than the median but at or below 1.5 times the median	More than 1.5 times the median but at or below twice the median	More than twice the median	At or below half the median	More than half the median but at or below the median	More than the median but at or below 1.5 times the median	More than 1.5 times the median but at or below twice the median	More than twice the median	At or below half the median	More than half the median but at or below the median	More than the median but at or below 1.5 times the median	More than 1.5 times the median but at or below twice the median	More than twice the median
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
OECD	**Countries**															
	Australia	16	51	22	6	5	12	46	24	10	8	10	32	27	17	14
	Austria	34	43	17	4	2	17	33	30	12	8	14	17	21	19	29
	Belgium [1]	11	64	22	3	c	5	60	31	4	1	2	30	49	13	6
	Canada [2]	38	30	18	8	5	27	31	21	11	10	21	23	22	15	19
	Chile [2]	25	50	18	4	3	13	41	26	10	10	4	16	18	14	48
	Colombia	42	32	20	4	2	25	25	33	10	7	9	11	22	13	45
	Costa Rica	28	45	22	3	2	14	35	31	9	10	6	11	20	14	50
	Czech Republic	22	64	13	1	0	4	51	34	8	3	2	19	39	19	21
	Denmark	33	39	22	4	2	18	38	33	7	4	15	23	39	14	10
	Estonia	16	52	6	17	8	15	46	8	22	9	10	32	10	29	19
	Finland [2]	30	37	24	6	3	21	40	29	7	3	12	23	33	17	15
	France [2]	31	40	21	4	4	21	39	28	7	5	11	20	32	17	20
	Germany	37	41	16	3	2	20	38	29	9	4	12	20	26	20	21
	Greece [2]	33	38	21	5	3	18	34	34	10	5	10	21	35	19	14
	Hungary	27	46	19	5	2	9	40	30	13	8	3	13	28	21	35
	Iceland	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Ireland [2]	41	34	13	6	6	27	34	25	7	7	15	19	21	18	27
	Israel [2]	24	56	12	4	4	19	43	20	9	8	12	25	22	14	27
	Italy [2]	29	34	25	8	4	18	30	29	12	10	15	21	26	15	23
	Japan	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Korea	26	61	11	2	0	14	53	22	8	3	6	34	28	20	12
	Latvia [1]	8	60	24	c	4	5	57	27	8	4	2	30	33	17	17
	Lithuania [2]	27	47	19	5	c	17	46	22	10	5	13	22	23	18	25
	Luxembourg [1]	22	63	11	3	1	10	54	26	8	2	3	29	32	21	16
	Mexico [1, 2]	32	31	21	8	8	16	21	25	15	24	6	10	15	16	53
	Netherlands	32	35	23	7	2	23	34	27	11	6	13	20	26	18	22
	New Zealand	23	39	26	7	5	21	35	27	9	8	14	25	29	15	17
	Norway	52	26	16	4	2	25	29	31	10	5	17	17	38	15	13
	Poland	0	75	20	4	1	0	61	27	7	4	0	29	35	17	19
	Portugal	10	56	25	6	4	6	44	30	10	10	3	15	24	20	37
	Slovak Republic	34	43	17	5	1	17	36	30	11	6	11	16	27	21	24
	Slovenia	0	85	14	1	0	0	65	27	6	2	0	23	32	25	21
	Spain [2]	33	34	23	5	4	22	32	24	10	11	15	21	20	17	27
	Sweden	27	44	24	4	1	16	36	35	9	4	15	24	37	15	10
	Switzerland	29	52	17	1	1	22	40	30	5	2	10	23	34	19	14
	Türkiye [1]	27	49	20	3	1	16	37	30	11	6	11	15	21	28	25
	United Kingdom	20	56	19	4	2	14	51	23	7	4	7	34	31	15	14
	United States	47	37	12	3	2	30	37	20	7	7	14	21	24	14	26
	OECD average	27	46	19	5	3	16	41	27	9	7	10	22	27	18	23
	EU22 average	24	49	19	5	3	14	43	28	9	6	9	22	29	19	21
Partners	Argentina	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Brazil	63	22	8	4	3	42	26	14	8	9	24	11	12	13	41
	China	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	G20 average	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m

Note: There are cross-country differences in the inclusion/exclusion of zero and negative earners. For a given level of educational attainment, the figures by level of earnings relative to the median earnings may not add up to 100% because of missing data. See *Definitions* and *Methodology* sections for more information. Data and more breakdowns available at: http://stats.oecd.org/, *Education at a Glance Database*.

1. Earnings net of income tax.

2. Year of reference differs from 2020: 2019 for Canada, Finland, Ireland, Israel and Spain; 2018 for France, Greece, Italy, Lithuania and Mexico; 2017 for Chile.

Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

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Table A4.3. Women's earnings as a percentage of men's earnings, by educational attainment and age group (2020)

Average earnings of adults with income from employment (full-time full-year workers)

		Below upper secondary			Upper secondary or post-secondary non-tertiary			Tertiary		
		25-64 year-olds	35-44 year-olds	55-64 year-olds	25-64 year-olds	35-44 year-olds	55-64 year-olds	25-64 year-olds	35-44 year-olds	55-64 year-olds
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
OECD	Countries									
	Australia	90	85	87	89	89	83	84	79	85
	Austria	79	73	73	86	83	89	75	80	81
	Belgium [1]	79	c	c	78	79 r	80 r	84	92	89
	Canada [1]	68	73	72	67	59	71	75	79	72
	Chile [1]	81	89	74	76	76	71	68	71	68
	Colombia	85	83	81	85	82	78	84	82	83
	Costa Rica	88	89	77	87	86	c	101	97	109
	Czech Republic	89	92	90	84	78	92	75	71	87
	Denmark	84	83	84	82	81	82	78	80	72
	Estonia	59	58	77	66	62	73	77	77	78
	Finland [1]	82	84	80	78	75	78	78	77	75
	France [1]	82	c	c	81	83	81	74	79	65
	Germany	76	69	c	81	81	80	68	76	65
	Greece [1]	72	64	70	83	85	78	78	80	81
	Hungary	87	89	84	88	84	91	71	66	79
	Iceland	m	m	m	m	m	m	m	m	m
	Ireland [1]	76 r	c	c	76	80	70	75	84	75
	Israel [1]	66	65	62	70	66	69	68	72	69
	Italy [1]	78	73	83	83	80	87	71	74	63
	Japan	m	m	m	m	m	m	m	m	m
	Korea	78	75	77	72	76	71	74	77	76
	Latvia [2]	70	69	c	73	71	77	75	76	79
	Lithuania [1]	85	85	91	80	78	83	76	75	78
	Luxembourg [2]	77	58	c	84	87	82 r	80	83	64
	Mexico [1, 2]	66	66	68	72	72	78	75	77	71
	Netherlands	83	85	87	84	89	84	78	90	79
	New Zealand	88	84	91	85	82	84	82	86	82
	Norway	81	79	81	79	76	80	76	77	74
	Poland	78	77	79	82	75	90	74	71	76
	Portugal	79	80	77	77	77	69	73	75	71
	Slovak Republic	79	81	78	81	77	88	75	71	84
	Slovenia	88	84	88	89	85	95	84	81	89
	Spain [1]	80	86	82	72	70	66	81	80	76
	Sweden	86	84	86	84	83	83	81	81	76
	Switzerland	81	81	81	84	86	80	79	85	83
	Türkiye [2]	73	74	57	82	79	92	82	83	70
	United Kingdom	78	70	74	70	72	65	78	79	79
	United States	71	74	63	76	71	78	70	72	64
	OECD average	79	78	79	80	78	80	77	79	77
	EU22 average	80	77	82	81	79	82	76	78	76
Partners	Argentina	m	m	m	m	m	m	m	m	m
	Brazil	76	79	73	69	70	66	63	66	60
	China	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m	m	m	m
	G20 average	m	m	m	m	m	m	m	m	m

Note: There are cross-country differences in the inclusion/exclusion of zero and negative earners. See *Definitions* and *Methodology* sections for more information. Data and more breakdowns available at: http://stats.oecd.org/, *Education at a Glance Database*.

1. Year of reference differs from 2020: 2019 for Belgium, Canada, Finland, Ireland, Israel and Spain; 2018 for France, Greece, Italy, Lithuania and Mexico; 2017 for Chile.
2. Earnings net of income tax.

Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

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Table A4.4. Relative earnings of tertiary-educated adults, by field of study (2020)

25-64 year-olds with income from employment (full-time full-year workers); upper secondary education (all fields) = 100

			Arts and humanities, social sciences, journalism and information			Business, administration and law						Health and welfare			
		Education	Arts	Humanities (except languages), social sciences, journalism and information	Total	Business and administration	Law	Total	Natural sciences, mathematics and statistics	Information and communication technologies (ICT)	Engineering, manufacturing and construction	Health (medical and dental)	Health (nursing and associate health fields)	Total	Other fields
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
OECD	Countries														
	Australia	131	x(4)	141	132	x(7)	x(7)	155	152	146	163	x(13)	x(13)	139	124
	Austria	120	x(4)	158	137	x(7)	x(7)	168	156	166	147	x(13)	x(13)	178	114
	Belgium	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Canada	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Chile [1]	168	x(4)	273	227	x(7)	x(7)	257	270	246	300	x(13)	x(13)	243	192
	Colombia	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Costa Rica	234	c	213	195	184	258	195	c	218	184	x(13)	x(13)	249	166
	Czech Republic	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Denmark	105	x(4)	x(4)	121	x(7)	x(7)	148	138	129	136	x(13)	x(13)	105	116
	Estonia	103	106	147	132	125	147	129	143	181	119	189	118	129	118
	Finland [1, 2]	124 [b]	100 [b]	142 [b]	125 [b]	146 [b]	225 [b]	151 [b]	147 [b]	173 [b]	180 [b]	273 [b]	117 [b]	137 [b]	133 [b]
	France	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Germany [3]	127	120	135	130	184	189	184	170	168	211	244	206	175	138
	Greece	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Hungary	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Iceland	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Ireland	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Israel	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Italy	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Japan	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Korea	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Latvia [4]	107	112	148	144	160	154	158	150	206	159	147	137	135	147
	Lithuania	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Luxembourg [4]	141	x(4)	141	135	x(7)	x(7)	157	134	150	173	x(13)	x(13)	131	c
	Mexico	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Netherlands	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	New Zealand	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Norway	93	90	123	117	130	136	131	132	128	141	167	99	109	120
	Poland	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Portugal [5]	126	126	162	168	194	203	195	183	204	195	x(13)	x(13)	162	141
	Slovak Republic	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Slovenia	138	146	157	156	160	182	163	178	177	172	279	185	211	147
	Spain	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Sweden	101	102	115	112	148	155	149	126	129	141	168	111	120	117
	Switzerland [6]	124	109	153	139	157	185	160	158	159	137	197	117	141	115
	Türkiye	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	United Kingdom	106	x(4)	117	102	x(7)	x(7)	138	118	150	156	x(13)	x(13)	110	107
	United States [1, 7]	126	145	187	178	x(7)	x(7)	201	230	209	233	x(13)	x(13)	167	148
	OECD average	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	EU22 average	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Partners	Argentina	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Brazil	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	China	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	G20 average	m	m	m	m	m	m	m	m	m	m	m	m	m	m

Note: There are cross-country differences in the inclusion/exclusion of zero and negative earners. In addition, data on humanities (except languages), social sciences, journalism and information might refer to the broad field social sciences, journalism and information only. See *Definitions* and *Methodology* sections for more information. Data and more breakdowns available at: http://stats.oecd.org/, *Education at a Glance Database*.

1. Year of reference differs from 2020: 2019 for Finland; 2017 for Chile and the United States.
2. Earnings refer to full- and part-time workers.
3. Earnings refer to academic programmes only.
4. Earnings net of income tax.
5. Arts and humanities, social sciences, journalism and information does not include the subfield of languages.
6. Index 100 refers to combined ISCED levels 3 and 4 in the ISCED 2011 classification. See the *Reader's Guide* for the list of ISCED levels.
7. Data refer to bachelor's degree field, even for those with additional tertiary degrees.

Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

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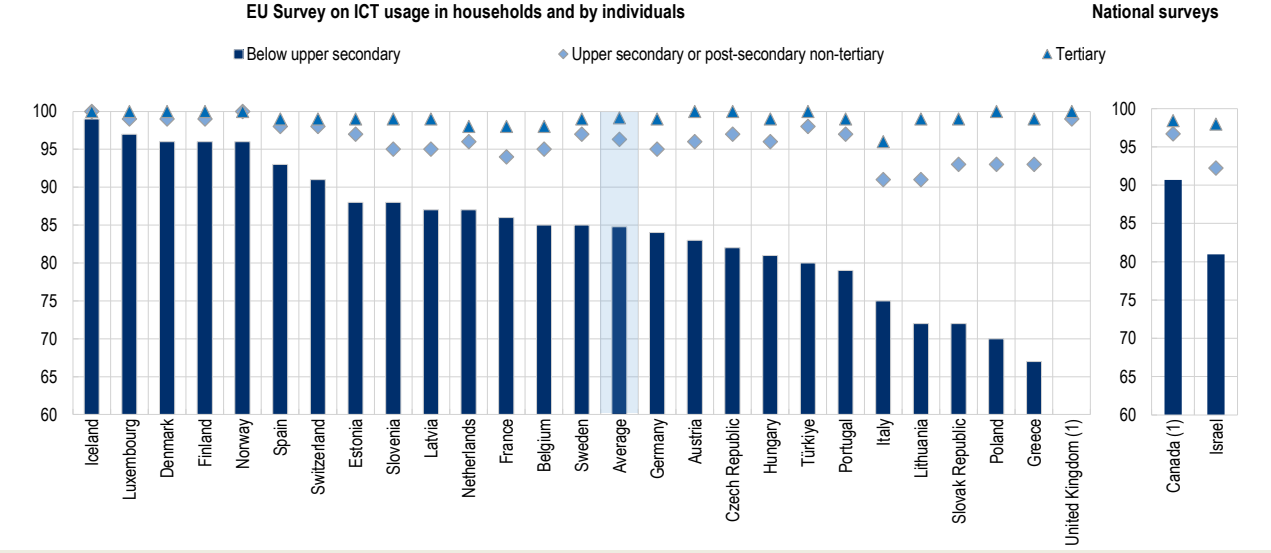
Indicator A6. How are social outcomes related to education?

Highlights

- Higher educational attainment is associated with more frequent use of the Internet. On average across OECD countries participating in the European Union Survey on Information and Communication Technologies usage in households and by individuals (EU-ICT), nearly all tertiary-educated 25-54 year-olds used the Internet at least once a week in 2021, compared to 85% for those with below upper secondary attainment. Educational attainment is more important in explaining Internet usage among 55-74 year-olds than among 25-54 year-olds.
- Internet use plays a role in keeping older people socially connected and preventing loneliness. However, the potential benefits remain concentrated among the highly educated. On average across OECD countries participating in EU-ICT, 71% of tertiary-educated 55-74 year-olds reported making telephone or video calls over the Internet in 2021, compared to 34% for those with below upper secondary attainment during that year.
- Parents can help their children to develop the skills and attitudes they need to thrive in the interconnected world. Evidence from the Programme of International Student Assessment (PISA) suggests that students with tertiary-educated mothers show greater interest in learning about other cultures, more positive attitudes towards immigrants and a stronger sense of global mindedness.

Figure A6.1. Share of 25-54 year-olds using the Internet at least once a week, by educational attainment (2021)

In per cent



Note: The reference period for Internet usage is the last three months prior to the survey. In general, data refer to the first quarter of the reference year.
1. Reference year differs from 2021. Refer to the source table for more details.
Countries are ranked in descending order of the share of 25-54 year-olds with below upper secondary attainment using the Internet at least once a week.
Source: OECD (2022), Table A6.1. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

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Context

Across OECD countries, there has been a significant shift in recognition of the importance of social benefits and measures of social well-being over the past decade. A number of countries have developed and continue to develop data sources across a number of social areas, providing opportunities to explore relationships between previously separate policy areas. There is, in parallel, a growing body of new research on the importance of non-economic aspects of well-being and the role played by education. Building on this insight, Indicator A6 of Education at a Glance (EAG) looks at a range of potential social outcomes of education, following the topics defined by the OECD well-being framework. In this edition, it has a special focus on social connections among adults and social tolerance among young people in the interconnected world.

Human beings are inherently social creatures. Digital technologies can reduce the barriers involved in traditional social interactions and facilitate social activities. With the rapid expansion of Internet services and use, online social networks have been growing in our societies and an increasing share of our personal interactions now take place on line. Some studies have found a strong inverse cross-country relationship between Internet use and loneliness, with people living in countries with higher levels of Internet access experiencing lower levels of loneliness (OECD, 2019[1]). One area of significance is the potential of digital technology to reduce loneliness among older adults. However, as this indicator highlights, Internet access alone is not enough to properly capitalise on the positive opportunities offered by digital technologies, as less-educated older adults are often excluded from online social connections.

Fuelled by rapid digital transformation and the increasing mobility of goods, services, capital and labour, globalisation has made our world more interconnected over the past decades. In addition to learning academic subjects, such as mathematics and science, students need to acquire the capacity to see the world from different perspectives, be open to different cultures and take a more active role in promoting collective well-being and sustainable development. Higher educational attainment is associated with more tolerant attitudes and greater awareness of global issues (Brennan et al., 2015[2]). As parents can transmit knowledge and act as role models in defining children's behaviour, highly educated parents might also be expected to transmit these positive attitudes to their children. The second main section of this indicator therefore investigates how mothers' educational attainment is related to their children's social tolerance and global mindedness.

Other findings

- More than nine out of ten households had access to the Internet in 2021 or the most recent year data were available. Among OECD countries taking part in EU-ICT, this share ranges from 85% in Greece to 99% in Luxembourg, the Netherlands, Norway and Switzerland. Countries not covered by the EU-ICT survey show comparable level of Internet access within households: 84% in Israel, 89% in the United States and 95% in Canada.
- Online platforms and mobile health solutions offer new sources of health-related information. On average across OECD countries participating in EU-ICT, the share of tertiary-educated 55-74 year-olds accessing health-related information on line is more than twice the share of those with below upper secondary attainment in 2021.
- COVID-19 has increased acceptance of remote working and therefore accelerated the digitalisation of work. Workers with tertiary attainment were more likely to telework than their lower-educated peers before the pandemic, and this gap has widened in many countries since. However, the relationship between educational attainment and the likelihood of teleworking is probably explained by job requirements across sectors and industries, as tertiary-educated workers are more likely to work in knowledge-intensive sectors with high share of jobs that are amenable to remote work.

Note

The differences by educational attainment displayed in this indicator do not account for socio-economic status and other moderating or mediating factors. The educational attainment gradient should therefore not be interpreted as the effect of education on the social outcomes measured.

Analysis

Internet access and use, by educational attainment and age group

More and more everyday activities are moving on line, and access to the Internet has become essential in the digital age. On average across OECD countries participating in the EU Survey on ICT usage in households and by individuals (EU-ICT), 93% of households reported having access to the Internet in 2021 or the most recent year data were available. This share does not vary much across countries: ranging from 85% in Greece to 99% in Luxembourg, the Netherlands, Norway and Switzerland. Countries not covered by the EU-ICT survey also show comparable level of Internet access within households: 84% in Israel, 89% in the United States and 95% in Canada (Table A6.1).

The share of 25-54 year-olds using the Internet at least once a week tends to increase with educational attainment. In 2021, among OECD countries taking part in EU-ICT, this share averaged 85% among those with below upper secondary attainment, 96% among those with upper secondary or post-secondary non-tertiary attainment and 99% among tertiary-educated adults. National data collected in Canada and Israel follow the same pattern. The Internet usage gap between tertiary attainment and upper secondary or post-secondary non-tertiary attainment was less than 10 percentage points in all OECD countries with available data. The difference between below upper secondary attainment and upper secondary or post-secondary non-tertiary attainment is clearer, exceeding 20 percentage points in Greece, Poland and the Slovak Republic, although it is below 5 percentage points in Denmark, Finland, Iceland, Luxembourg and Norway (Figure A6.1).

The difference in Internet use by educational attainment is more significant among 55-74 year-olds than among 25-54 year-olds. On average across OECD countries taking part in EU-ICT, 57% of 55-74 year-olds with only below upper secondary attainment used the Internet at least once a week in 2021. The share increases to 80% among those with upper secondary or post-secondary non-tertiary attainment, and reaches 95% among those with tertiary attainment (Table A6.1).

For the younger population the situation is very different and there is almost no variation by educational attainment. Almost all 16-24 year-olds use the Internet at least once week in all countries participating in EU-ICT, regardless of educational attainment. Israel is the only country where the difference between 16-24 year-olds with below upper secondary attainment (79%) and those with upper secondary or post-secondary non-tertiary attainment (97%) exceeds 10 percentage points (Table A6.1).

Online social connection among older people, by educational attainment

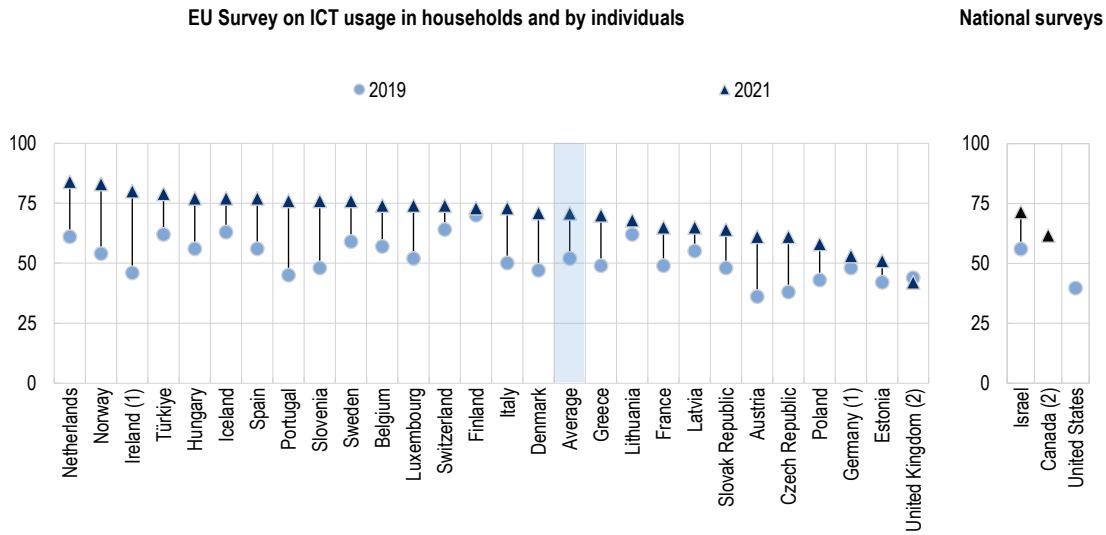
The Internet's potential for social connections could be particularly important for the elderly. Increasing life expectancy and changes in living patterns are leading to widespread social isolation and loneliness among older people, which is an issue of growing concern. Isolation and loneliness can have serious consequences for physical and mental health (WHO, 2021[3]). For older adults, one option for keeping socially connected in the digital age is to make online telephone or video calls. Older adults with high levels of educational attainment make greater use of the Internet to connect to others than their lower-educated peers. On average across OECD countries participating in EU-ICT, 20% of 55-74 year-olds with below upper secondary attainment made telephone or video calls over the Internet in 2019, compared to 35% among those with upper secondary or post-secondary non-tertiary attainment and 52% among those with tertiary attainment. The same pattern is observed in Canada, Israel and the United States (Figure A6.2 and Table A6.2).

The COVID-19 pandemic has increased the use of the Internet for telephone or video calls among all 55-74 year-olds. Many countries imposed social distancing measures and lockdowns since the outbreak of the pandemic. The barriers to face-to-face contacts compounded the feeling of loneliness and lack of connectedness. But the extent to which older adults have made use of these opportunities offered by the Internet to stay connected has also varied with educational attainment. On average across OECD countries taking part in EU-ICT, by 2021, the share of 55-74 year-olds making online telephone or video calls had increased to 34% among those with below upper secondary attainment, 51% among those with upper secondary or post-secondary non-tertiary attainment and 71% among those with tertiary attainment. Portugal, which had below-average share of older tertiary-educated adults making such calls in 2019, recorded the greatest increases among this group between 2019 and 2021, of over 30 percentage points (Figure A6.2 and Table A6.2).

In most OECD countries with available trend data, except in Finland, Latvia and Spain, the share of 55-74 year-olds making telephone or video calls over the Internet increased steadily between 2019 and 2021. For 55-74 year-olds at all levels of educational attainment, the share peaked in 2020 and fell back slightly in 2021 in Finland and Spain. While in Latvia, the share decreased between 2019 and 2020, but increased in 2021 (Table A6.2).

Figure A6.2. Share of tertiary-educated 55-74 year-olds making telephone or video calls over the Internet (2019 and 2021)

In per cent



Note: The reference period is the last three months prior to the survey. In general, data refer to the first quarter of the reference year. Refer to Annex 3 for more country-specific information.
1. There is a break in the series. Refer to the source table and Annex 3 for more details.
2. Reference year differs from 2021. Refer to the source table for more details.
Countries are ranked in descending order of the share of tertiary-educated 55-74 year-olds making telephone or video calls over the Internet in 2021.
Source: OECD (2022), Table A6.2. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

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The ongoing digital transformation is affecting people's lives across many dimensions, and older people with higher educational attainment seem to enjoy greater benefits from digitalisation.

Box A6.1 looks at older adults' use of the Internet to seek health-related information.

Box A6.1. The Internet as a source of health-related information for older people

Digital innovations can contribute to better health outcomes, improve patients' experience and achieve cost efficiencies in healthcare delivery. For most people, the increasing availability of health-related information on line remains the most direct way in which digitalisation affects their health experience (OECD, 2019[1]).

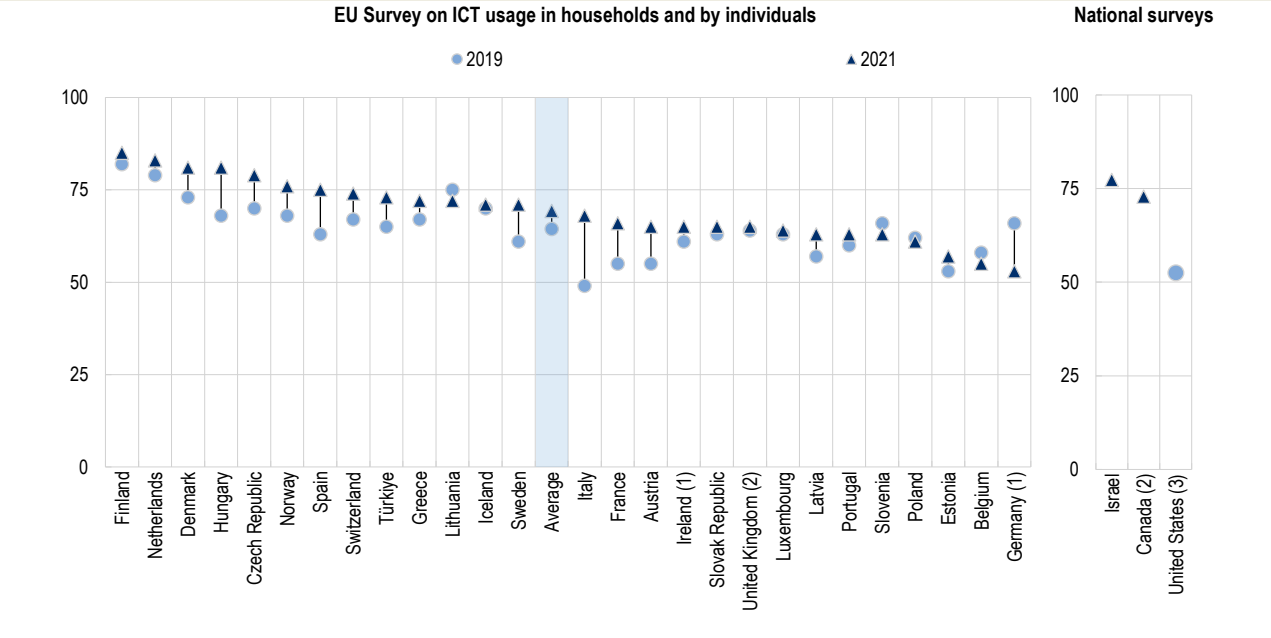
As people age, they are more likely to experience health challenges. The Internet offers unprecedented potential for people to learn about self-care treatments and improve their healthcare decision making but, as with other aspects of online behaviour, there are differences among older adults, depending on their educational attainment. It should be noted that not all of the content available over the Internet is verified, and there have been growing levels of disinformation on line related to COVID-19 (OECD, 2020[4]). To benefit from the Internet's potential as a source of health-related information, individuals need to be able to distinguish between high- and low-quality information. The ability to critically assess information probably has a positive relationship with educational attainment. In 2019, across OECD countries participating in the EU-ICT survey, tertiary-educated 55-74 year-olds were more than twice as likely on average to employ the Internet as a source of health-related information than their peers with below upper secondary attainment. The pattern is similar in Canada and Israel (Table A6.2, available on line).

The share of 55-74 year-olds seeking health-related information over the Internet increased between 2019 and 2021 (Table A6.2, available on line). This is probably related to the fact that in-person consultations and non-urgent care were limited and even suspended during the pandemic, especially early on (OECD, 2021[5]). On average across OECD

countries taking part in the EU-ICT survey, use of the Internet to seek health-related information rose from 64% of tertiary-educated 55-74 year-olds in 2019 to 69% in 2021. The increase was over 10 percentage points in France, Hungary, Italy and Spain. In contrast, in Belgium, Lithuania, Poland and Slovenia, the share of tertiary-educated 55-74 year-olds seeking health-related information on line fell over the same period (Figure A6.3).

Figure A6.3. Share of tertiary-educated 55-74 year-olds seeking health-related information over the Internet (2019 and 2021)

In per cent



Note: The reference period is the last three months prior to the survey. In general, data refer to the first quarter of the reference year. Refer to Annex 3 for more country-specific information.
1. There is a break in the series. Refer to the source table and Annex 3 for more details.
2. Reference year differs from 2021. Refer to the source table for more details.
3. The share of those seeking health-related information over the Internet represent the share of 55-74 year-olds who accessed the Internet and live in households where someone researched health information on line.
Countries are ranked in descending order of the share of tertiary-educated 55-74 year-olds seeking health-related information over the Internet in 2021.
Source: OECD (2022), Table A6.2. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

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While containment measures have restricted economic activities, the rapid expansion of teleworking has helped maintain some jobs during the COVID-19 pandemic.

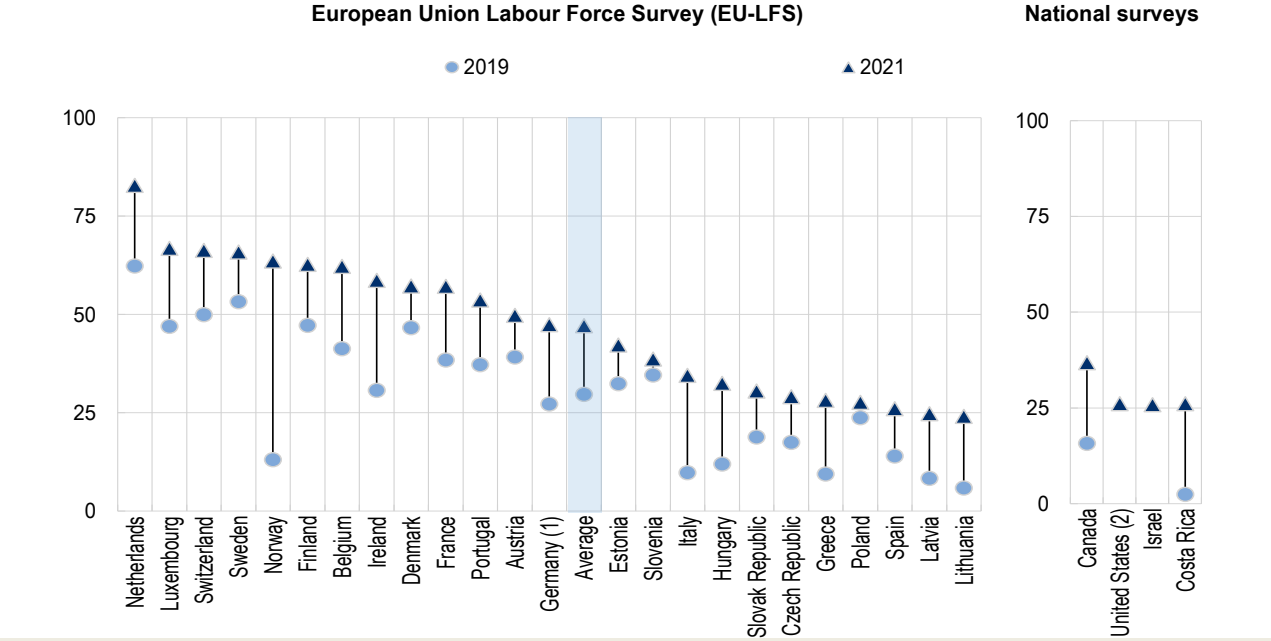
Box A6.2 details how remote working evolved during the pandemic across countries and attainment levels.

Box A6.2. Increase in teleworking during the COVID-19 pandemic

The global health crisis has affected the way many people work. On average across OECD countries participating in the EU Labour Force Survey (EU-LFS), the share of employed 25-64 year-olds who reported usually or sometimes working from home (i.e. working from home for at least one hour during the four weeks prior the survey) rose from 19% in 2019 to 24% in 2020 and 30% in 2021. Because the data all refer to the same reference period, the frequency of teleworking might be underestimated in some countries, if the pandemic did not reach its peak during that period. Surveys in other countries, such as Canada and Costa Rica, also recorded an increase in the share of workers who reported usually or sometimes teleworking during the pandemic (Table A6.7, available on line).

Figure A6.4. Share of tertiary-educated adults who reported usually or sometimes working from home (2019 and 2021)

In per cent; 25-64 year-old employed adults



Note: Usually or sometimes working from home means working at home at least one hour in the reference period of four weeks preceding the end of the reference week. Refer to Annex 3 for more country-specific information.
1. There is a break in the series. Refer to the source table and Annex 3 for more details.
2. Data represent the percentage of employed adults working from home at any time in the last 4 weeks because of the Coronavirus pandemic. Individuals that worked entirely from home before the pandemic are excluded from these estimates.
Countries are ranked in descending order of the share of tertiary-educated 25-64 year-olds who reported usually or sometimes working from home in 2021.
Source: OECD (2022), Table A6.7, available on line. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

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Although all OECD countries experienced overall increases in the share of employed adults teleworking during the pandemic, the extent of the increase varies widely by level of educational attainment. Tertiary-educated workers are much more likely to work remotely than their lower-educated peers, and the pandemic further widened this gap. On average across OECD countries taking part in EU-LFS, the share of workers with below upper secondary attainment usually or sometimes working from home increased by 1 percentage point (from 9% to 10%) between 2019 and 2021. The increase was 6 percentage points among those with upper secondary or post-secondary non-tertiary attainment (from 12% to 19%) and 17 percentage points for those with tertiary attainment (from 30% to 47%) (Figure A6.4 and Table A6.7, available on line).

These averages conceal some significant variations across countries. Among tertiary-educated workers, the likelihood of usually or sometimes working from home more than doubled in Greece, Hungary, Italy, Latvia, Lithuania and Norway between 2019 and 2021, while the increase was less than 20% in Poland and Slovenia. At the other end of the spectrum, in Austria, Greece, Luxembourg, Poland and Sweden, workers with below upper secondary attainment were less likely to report usually or sometimes working from home in 2021 than in 2019 (Figure A6.4 and Table A6.7, available on line).

The relationship between educational attainment and the likelihood of teleworking is probably explained by differing work requirements across sectors and industries. Many high-skilled jobs in knowledge-intensive industries can be done remotely using laptops, whereas manufacturing, which is in general dominated by lower-educated workers, would seem less suitable for telework (OECD, 2020[6]).

Social tolerance among 15-year-old students, by mother's educational attainment

Parents can help their children develop the skills and attitudes needed to thrive in the interconnected world. Using data from the PISA 2018 Global Competence questionnaire, this section analyses how their mothers' educational attainment influences students' interest in learning about other cultures and attitudes towards immigrants. This is the first time that the breakdown by mother's educational attainment has been published.

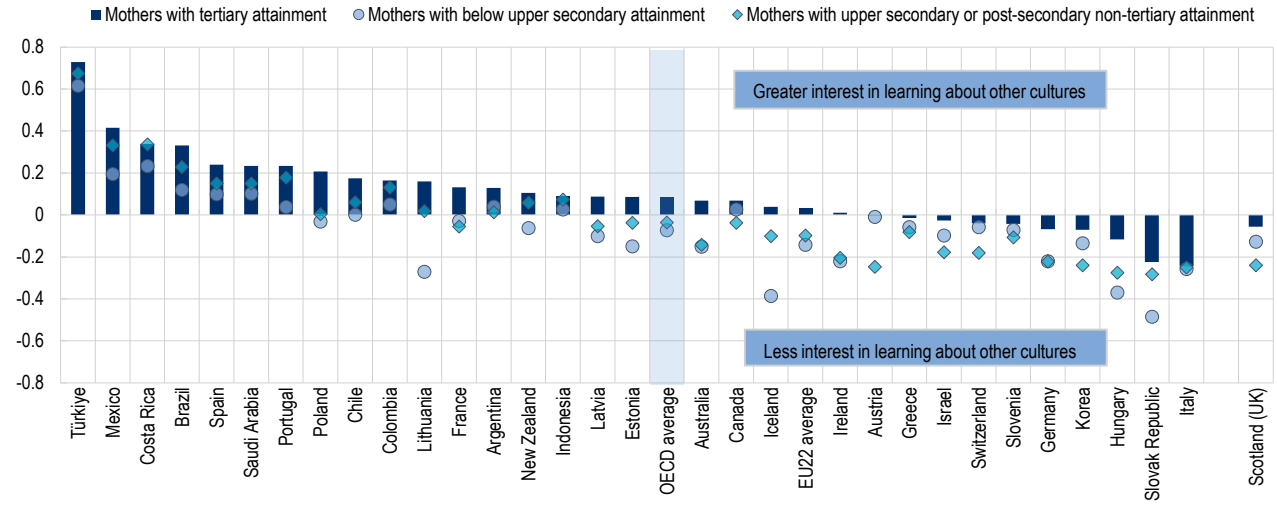
Student's interest in learning about other cultures

The PISA 2018 Global Competence questionnaire module asked 15-year-old students to respond to the following four statements: "I want to learn how people live in different countries"; "I want to learn more about the religions of the world"; "I am interested in how people from various cultures see the world"; and "I am interested in finding out about the traditions of other cultures". The five response categories were "not at all like me", "not much like me", "somewhat like me", "mostly like me" and "very much like me". These statements were combined to create the index of students' interest in learning about other cultures, with positive values indicate that students exhibited a greater interest in learning about other cultures than the average student across the OECD.

The greatest levels of interest in learning about different cultures were reported by 15-year-old students in the Republic of Türkiye, while those in Italy and the Slovak Republic reported the lowest (Table A6.3). In nearly all OECD and partner countries and other participants, students' interest in learning about other cultures is positively related to their mothers' educational attainment. In some countries, such as Australia, Estonia, France, Iceland, Ireland and Latvia, it was only the students with tertiary-educated mothers who expressed more curiosity about other cultures than the average of all students from OECD countries and economies. Italy was the only country with below-average interest among students in learning about other cultures where mother's educational attainment made almost no difference (Figure A6.5).

Figure A6.5. Students' interest in learning about other cultures, by mother's educational attainment (2018)

Programme for International Student Assessment (PISA); mean index



Note: PISA 2018 asked 15-year-old students to respond to the following four statements: "I want to learn how people live in different countries"; "I want to learn more about the religions of the world"; "I am interested in how people from various cultures see the world"; and "I am interested in finding out about the traditions of other cultures". These statements were combined to create the index of students' interest in learning about other cultures whose average is 0 and standard deviation is 1 across OECD countries. Positive values in this index indicate that the students exhibited a greater interest in learning about other cultures than the average student in OECD countries. Negative values do not imply that students responded negatively, but rather that they exhibited less interest in learning about other cultures than the average student across OECD countries.
Countries are ranked in descending order of mean index of the interest in learning about other cultures among students with tertiary-educated mothers.
Source: OECD (2022), Table A6.3. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

StatLink https://stat.link/pqc3kv

Among the four statements used to assess students' interest in learning about other cultures, there seems to be a distinction between students' response to the concepts of culture and of religion, as religion might be a more sensitive notion than culture (OECD, 2020[7]). On average across OECD countries and economies, more than 50% of students reported that they would like to learn how people live in different countries, about the perspectives of people from various cultures and to find out about the traditions of other cultures. In contrast, only 40% expressed an interest in learning about the religions of the world. Unlike with the three culture-related questions, students with tertiary-educated mothers were not always the ones who reported greatest interest in learning about other religions. In Austria, Canada, Greece, Israel, Italy, Scotland (United Kingdom), Slovenia and Switzerland, students whose mother attained below upper secondary education reported the greatest interest in learning about other religions (Table A6.4, available on line).

Attitudes towards immigrants

Many countries have seen the size of their immigrant population increase in recent years, with the war in Ukraine contributing to this trend. On average across OECD countries, in 2020, almost one-fifth of 25-64 year-olds were not born in the country where they currently live. Students' attitudes towards immigrants are therefore becoming crucial to creating cohesive and harmonious societies.

The PISA 2018 Global Competence questionnaire assessed students' attitude towards immigrants through their responses to the following statements: "Immigrant children should have the same opportunities for education that other children in the country have", "Immigrants who live in a country for several years should have the opportunity to vote in elections", "Immigrants should have the opportunity to continue their own customs and lifestyle", and "Immigrants should have all the same rights that everyone else in the country has". Reponses were provided on a four-point scale: "strongly disagree", "disagree", "agree" and "strongly agree". An index measuring overall attitudes towards immigrants is derived from these four statements, with a positive value indicating that students have more positive attitudes towards immigrants than the average student across OECD countries and other participants.

Students in Canada, Korea and Portugal reported the most positive attitudes towards immigrants, while those in Hungary had the least positive attitudes. Notably, there is no clear association between the share of foreign-born adults and students' attitudes towards immigrants. For instance, in Switzerland, 37% of 25-64 year-olds are foreign-born, but students do not report more positive attitudes than the average student across the OECD. In contrast, Portugal has relatively low share of foreign-born adults (11%), but students reported the most positive attitudes towards immigrants (Table A6.3).

While mother's educational attainment plays a positive role in their children's overall attitudes towards immigrants, the relationship becomes less conclusive when looking at the answers to individual statements. In 17 out of 30 OECD and partner countries and other participants with available data, students with tertiary-educated mothers were the most likely to be positive about the right to education for immigrants' children. Where the questions touched on issues related to identity or political rights, maternal educational attainment did not have a clear effect. However, in general there was a wider range of responses to these statements than to other statements (Table A6.5, available on line).

Global mindedness of 15-year-old students, by mother's educational attainment

As well as social tolerance towards different cultures and people with different backgrounds, students in this interconnected world are expected to take more active role in promoting collective well-being and sustainable development. "Global mindedness" is used here to explore students' interest in and sense of agency over global issues, and is related to individuals' ability to fit into the world and their sense of responsibility about engaging with global challenges.

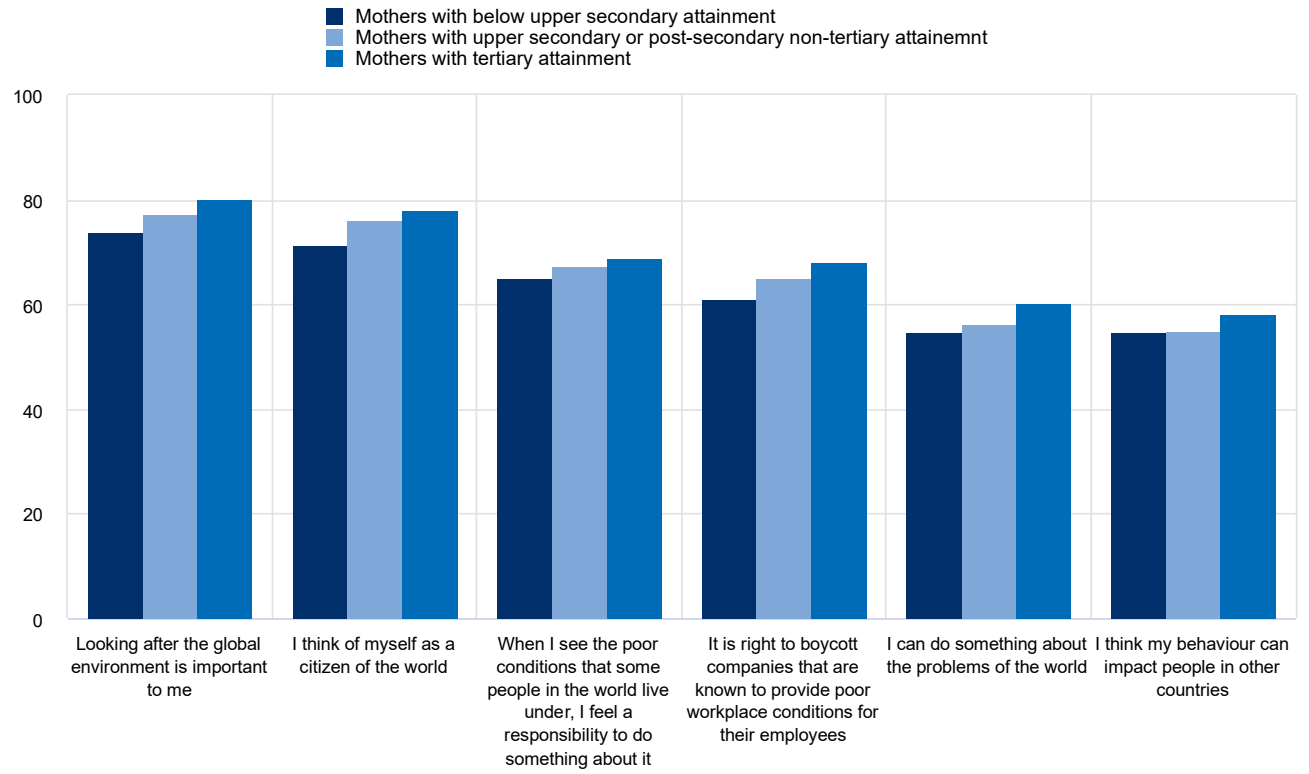
The PISA 2018 Global Competence questionnaire asked students the extent to which they agree ("strongly disagree", "disagree", "agree" or "strongly agree") with the following statements: "I think of myself as a citizen of the world", "When I see the poor conditions that some people live under, I feel a responsibility to do something about it", "I think my behaviour can impact people in other countries", "It is right to boycott companies that are known to provide poor workplace conditions for their employees", "I can do something about the problems of the world" and "Looking after the global environment is important to me". Positive values in this index indicate that students have a greater sense of global mindedness than the average students across OECD countries and economies.

According to the index created out of their self-reported answers, students in Costa Rica, Korea, Portugal, Spain and Türkiye have the highest sense of global mindedness, while those in Austria, Germany, Hungary, Latvia and the Slovak Republic have the lowest (Table A6.3). Students seemed to be more uncertain about whether they could make a difference to general

challenges than to specific issues. On average across OECD countries, students were less likely to give positive answers to the two broad statements – "I think my behaviour can impact people in other countries" and "I can do something about the problems of the world" – than to the other statements. This holds true for all countries and other participants except Colombia and Costa Rica, where students are the least likely to give positive answers to the statement "It is right to boycott companies that are known to provide poor workplace conditions for their employees" (Figure A6.6 and Table A6.6, available on line).

Figure A6.6. Students' global mindedness, by mother's educational attainment (2018)

Programme for International Student Assessment (PISA); OECD average; in per cent



Note: The percentage refers to the share of 15 year-old students agreeing or strongly agreeing with the following statements.
Source: OECD (2022), Table A6.6, available on line. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

StatLink https://stat.link/7a3g9r

In all OECD and partner countries and other economies except Italy, students with tertiary-educated mothers had the strongest sense of global mindedness (Table A6.3). However, the extent to which maternal educational attainment positively influenced students' attitudes to global issues differs for different statements. For instance, in all the countries and other PISA participants covered by EAG except the Slovak Republic, students with tertiary-educated mothers were the most likely to agree or strongly agree that they can do something about the problems of the world. In contrast, in 12 countries and other participants, it was not the students with tertiary-educated mothers who were most likely to agree or strongly agree that they feel a responsibility to do something about the poor conditions that some people in the world live under (Table A6.6, available on line).

Definitions

Age groups: Adults refer to 25-64 year-olds.

Educational attainment refers to the highest level of education successfully completed by an individual.

Levels of education: See the *Reader's Guide* at the beginning of this publication for a presentation of all ISCED 2011 levels.

The previous classification, ISCED-97, is used for the analyses based on the Programme for International Student Assessment (PISA): **Below upper secondary** corresponds to ISCED-97 levels 0, 1, 2 and 3C short programs; **upper secondary or post-secondary non-tertiary** corresponds to ISCED-97 levels 3A, 3B, 3C long programmes and level 4; and **tertiary** corresponds to ISCED-97 levels 5A, 5B and 6.

Methodology

Tables A6.1, A6.2 and Table A6.7, available on line, combine data from different sources which could compromise cross-country comparability in certain cases. Refer to table footnotes and Annex 3 for more country-specific information.

More information on the construction of indices in PISA are available at: https://www.oecd.org/pisa/data/pisa2018technicalreport/PISA2018_Technical-Report-Chapter-16-Background-Questionnaires.pdf.

For more information, please see the OECD *Handbook for Internationally Comparative Education Statistics 2018* (OECD, 2018[8]) and Annex 3 for country-specific notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

Source

- For Table A6.1 (Internet use, by educational attainment and age group): the EU Survey on ICT usage in households and by individuals (EU-ICT) for European OECD member countries; the Canadian Internet Use Survey (CIUS) for Canada; the Social Survey for Israel; and the American Community Survey (ACS) for the United States.
- For Table A6.2 (Trends in the use of the Internet for different activities among 55-74 year-olds, by educational attainment): EU-ICT survey for European OECD member countries; the CIUS for Canada; the Social Survey for Israel; and the Current Population Survey (CPS), Computer and Internet Use supplement for the United States.
- For Table A6.3 (Students' social tolerance, by mother's educational attainment), A6.4 (Students' interest in learning about other cultures, by mother's educational attainment), A6.5 (Students' attitudes towards immigrants, by mother's educational attainment) and A6.6 (Students' global mindedness, by mother's educational attainment): the PISA Global Competence questionnaire.
- For Table A6.7 (Percentage of adults working from home, by age group and educational attainment): the European Union Labour Force Survey (EU-LFS) or national LFS for European OECD member countries, Canada and Israel; the Continuous Employment Survey for Costa Rica; and the CPS for the United States.

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Indicator A6 tables

Tables Indicator A6. How are social outcomes related to education?

Table A6.1	Internet use, by educational attainment and age group (2021)
Table A6.2	Trends in the use of the Internet for different activities among 55-74 year-olds, by educational attainment (2019 to 2021)
Table A6.3	Students' social tolerance, by educational attainment of the mother (2018)
WEB Table A6.4	*Students' interest in learning about other cultures, by mother's educational attainment (2018)*
WEB Table A6.5	*Students' attitudes towards immigrants, by mother's educational attainment (2018)*
WEB Table A6.6	*Students' global mindedness, by mother's educational attainment (2018)*
WEB Table A6.7	*Percentage of adults working from home, by age group and educational attainment (2019 to 2021)*

StatLink https://stat.link/wc5d70

Cut-off date for the data: 17 June 2022. Any updates on data can be found on line at: http://dx.doi.org/10.1787/eag-data-en. More breakdowns can also be found at http://stats.oecd.org, *Education at a Glance Database*.

Table A6.1. Internet use, by age group and educational attainment (2021)

EU Survey on ICT usage in households and by individuals or national surveys; 16-74 year-olds

		EU Survey on ICT usage in households and by individuals									
			Share of the population using the Internet at least once a week								
			16-24 year-olds			25-54 year-olds			55-74 year-olds		
		Percentage of households with Internet access	Below upper secondary	Upper secondary or post-secondary non-tertiary	Tertiary	Below upper secondary	Upper secondary or post-secondary non-tertiary	Tertiary	Below upper secondary	Upper secondary or post-secondary non-tertiary	Tertiary
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
OECD	Countries										
	Austria	95	99	99	100	83	96	100	43	72	95
	Belgium	92	96	99	100	85	95	98	71	84	94
	Czech Republic	89	99	100	c	82	97	100	32	66	93
	Denmark	96	99	100	c	96	99	100	88	95	99
	Estonia	92	100	100	100	88	97	99	43	68	87
	Finland	97	100	99	c	96	99	100	71	89	99
	France	93	96	98	99	86	94	98	62	80	94
	Germany	92	96	98	100	84	95	99	59	78	93
	Greece	85	95	99	99	67	93	99	24	63	87
	Hungary	91	97	100	99	81	96	99	33	68	93
	Iceland	98	100	99	c	99	100	100	94	96	100
	Ireland	97	c	c	c	c	99	99	95	94	98
	Italy	90	95	95	94	75	91	96	47	79	89
	Latvia	91	98	100	100	87	95	99	38	72	94
	Lithuania	87	100	100	100	72	91	99	16	58	89
	Luxembourg	99	100	100	100	97	99	100	85	93	98
	Netherlands	99	94	95	100	87	96	98	84	95	96
	Norway	99	98	100	100	96	100	100	90	94	99
	Poland	92	97	99	100	70	93	100	22	56	93
	Portugal	87	100	99	100	79	97	99	39	88	94
	Slovak Republic	90	92	99	93	72	93	99	44	70	94
	Slovenia	93	100	99	c	88	95	99	51	74	96
	Spain	96	98	100	100	93	98	99	66	91	96
	Sweden	93	99	99	93	85	97	99	74	90	96
	Switzerland	99	99	98	100	91	98	99	86	91	98
	Türkiye	88	90	98	100	80	98	100	37	80	93
	United Kingdom [1]	97	c	100	100	c	99	100	c	89	97
	Average	93	97	99	99	85	96	99	57	80	95

		National surveys									
			Share of the population using the Internet at least once a week								
			16-24 year-olds			25-54 year-olds			55-74 year-olds		
		Percentage of households with Internet access	Below upper secondary	Upper secondary or post-secondary non-tertiary	Tertiary	Below upper secondary	Upper secondary or post-secondary non-tertiary	Tertiary	Below upper secondary	Upper secondary or post-secondary non-tertiary	Tertiary
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
OECD	Countries										
	Australia	m	m	m	m	m	m	m	m	m	m
	Canada [1, 2]	95	99	98	99	91	97	98	67	86	96
	Chile	m	m	m	m	m	m	m	m	m	m
	Colombia	m	m	m	m	m	m	m	m	m	m
	Costa Rica	m	m	m	m	m	m	m	m	m	m
	Israel [3]	84	79	97	90	81	92	98	62	85	96
	Japan	m	m	m	m	m	m	m	m	m	m
	Korea	m	m	m	m	m	m	m	m	m	m
	Mexico	m	m	m	m	m	m	m	m	m	m
	New Zealand	m	m	m	m	m	m	m	m	m	m
	United States [1]	89	m	m	m	m	m	m	m	m	m
Partners	Argentina	m	m	m	m	m	m	m	m	m	m
	Brazil	m	m	m	m	m	m	m	m	m	m
	China	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m	m	m	m	m
	G20 average	m	m	m	m	m	m	m	m	m	m

Note: The reference period for Internet usage is the last three months prior to the survey, unless otherwise specified. See *Definitions* and *Methodology* sections for more information. Note that the average differs from the one published by Eurostat as this is an unweighted average and the country coverage is different.

1. Reference year differs from 2021: 2020 for Canada and the United Kingdom; and 2019 for the United States.
2. Data refer to respondents who used the Internet over the last three months, but not necessarily at least once a week.
3. The age group 16-24 year-olds refers to 20-24 year-olds.

Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/ye5sdm

Table A6.2. Trends in the use of the Internet for different activities among 55-74 year-olds, by educational attainment (2019 to 2021)

EU Survey on ICT usage in households and by individuals or national surveys; percentage of individuals reporting using the Internet for a given activity for private purposes

		EU Survey on ICT usage in households and by individuals								
		Making telephone or video calls over the Internet								
		2019			2020			2021		
		Below upper secondary	Upper secondary or post-secondary non-tertiary	Tertiary	Below upper secondary	Upper secondary or post-secondary non-tertiary	Tertiary	Below upper secondary	Upper secondary or post-secondary non-tertiary	Tertiary
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
OECD	Countries									
	Austria	14	20	36	22	31	59	22	37	61
	Belgium	28	40	57	35	53	69	39	54	74
	Czech Republic	8	21	38	11	26	47	17	33	61
	Denmark	26	36	47	36	48	61	38	52	71
	Estonia	12	31	42	19	28	52	19	33	51
	Finland	31	43	70	39	59	79	36	48	73
	France	19	27	49	m	m	m	33	43	65
	Germany	31	38	48	36	46	56	30[b]	37[b]	53[b]
	Greece	10	32	49	13	34	54	17	45	70
	Hungary	11	34	56	17	41	71	23	50	77
	Iceland	35	47	63	55	62	69	52	60	77
	Ireland	15	30	46	44	56	60	59[b]	63[b]	80[b]
	Italy	19	38	50	30	57	69	34	58	73
	Latvia	10	29	55	13	37	54	23	45	65
	Lithuania	9	29	62	3	31	61	12	41	68
	Luxembourg	32	39	52	58	54	72	46	57	74
	Netherlands	34	49	61	59	74	86	58	78	84
	Norway	46	37	54	43	54	69	62	62	83
	Poland	6	21	43	5	25	51	9	26	58
	Portugal	10	34	45	18	45	62	27	65	76
	Slovak Republic	9	28	48	9	41	53	27	42	64
	Slovenia	11	21	48	13	27	59	30	39	76
	Spain	24	47	56	46	67	79	45	66	77
	Sweden	29	45	59	43	54	74	38	57	76
	Switzerland	37	47	64	m	m	m	62	55	74
	Türkiye	16	48	62	25	63	77	31	68	79
	United Kingdom	15	27	44	c	30	42	m	m	m
	Average	20	35	52	29	46	63	34	51	71

		National surveys								
		Making telephone or video calls over the Internet								
		2019			2020			2021		
		Below upper secondary	Upper secondary or post-secondary non-tertiary	Tertiary	Below upper secondary	Upper secondary or post-secondary non-tertiary	Tertiary	Below upper secondary	Upper secondary or post-secondary non-tertiary	Tertiary
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
OECD	Countries									
	Australia	m	m	m	m	m	m	m	m	m
	Canada	m	m	m	28	38	62	m	m	m
	Chile	m	m	m	m	m	m	m	m	m
	Colombia	m	m	m	m	m	m	m	m	m
	Costa Rica	m	m	m	m	m	m	m	m	m
	Israel	c	33	56	23	41	67	28	56	72
	Japan	m	m	m	m	m	m	m	m	m
	Korea	m	m	m	m	m	m	m	m	m
	Mexico	m	m	m	m	m	m	m	m	m
	New Zealand	m	m	m	m	m	m	m	m	m
	United States[1]	11	22	40	m	m	m	m	m	m
Partners	Argentina	m	m	m	m	m	m	m	m	m
	Brazil	m	m	m	m	m	m	m	m	m
	China	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m	m	m	m
	G20 average	m	m	m	m	m	m	m	m	m

Note: The reference period for activities is the last three months prior to the survey. Additional columns showing data on the share of 55-74 year-olds seeking health-related information over the Internet are available for consultation on line (see StatLink below). See *Definitions* and *Methodology* sections for more information. Note that the average differs from the one published by Eurostat as this is an unweighted average and the country coverage is different.

1. The share of those seeking health-related information over the Internet represent the share of 55-74 year-olds who accessed the Internet and live in households where someone researched health information on line.

Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/0bn5sh

Table A6.3. Students' social tolerance, by mother's educational attainment (2018)

Programme for International Student Assessment (PISA); based on responses by 15-year-old students

		Share of foreign-born adults	Interest in learning about other cultures				Attitudes towards immigrants				Global mindedness			
			Mother's educational attainment				Mother's educational attainment				Mother's educational attainment			
			Below upper secondary	Upper secondary or post-secondary non-tertiary	Tertiary	All levels of education	Below upper secondary	Upper secondary or post-secondary non-tertiary	Tertiary	All levels of education	Below upper secondary	Upper secondary or post-secondary non-tertiary	Tertiary	All levels of education
			Mean index	Mean index	Mean index	Mean index	Mean index	Mean index	Mean index	Mean index	Mean index	Mean index	Mean index	Mean index
		(1)	(2)	(4)	(6)	(8)	(10)	(12)	(14)	(16)	(18)	(20)	(22)	(24)
OECD	**Countries**													
	Australia	34	-0.15	-0.14	0.07	-0.03	0.20	0.22	0.39	0.31	-0.05	0.00	0.18	0.09
	Austria	25	-0.01	-0.25	0.00	-0.14	0.04	-0.20	-0.01	-0.11	-0.38	-0.25	-0.08	-0.20
	Belgium	m	m	m	m	m	m	m	m	m	m	m	m	m
	Canada	30	0.03	-0.04	0.07	0.04	0.35	0.37	0.50	0.46	-0.02	0.05	0.21	0.16
	Chile	3	0.00	0.06	0.17	0.08	0.13	0.25	0.27	0.22	-0.11	-0.01	0.03	-0.02
	Colombia	m	0.05	0.13	0.16	0.11	0.00	0.04	0.09	0.04	0.13	0.19	0.20	0.17
	Costa Rica	12	0.23	0.34	0.34	0.30	0.13	0.13	0.22	0.17	0.21	0.29	0.35	0.29
	Czech Republic	m	m	m	m	m	m	m	m	m	m	m	m	m
	Denmark	m	m	m	m	m	m	m	m	m	m	m	m	m
	Estonia	13	-0.15	-0.04	0.09	0.02	-0.29	-0.29	-0.27	-0.28	-0.39	-0.22	-0.14	-0.19
	Finland	m	m	m	m	m	m	m	m	m	m	m	m	m
	France	15	-0.03	-0.06	0.13	0.06	m	m	m	m	m	m	m	m
	Germany	21	-0.22	-0.22	-0.07	-0.18	0.09	0.05	0.21	0.12	-0.35	-0.32	-0.10	-0.27
	Greece	8	-0.06	-0.08	-0.01	-0.04	-0.10	-0.09	-0.03	-0.06	-0.11	0.03	0.12	0.06
	Hungary	3	-0.37	-0.28	-0.12	-0.21	-0.87	-1.00	-0.81	-0.90	-0.42	-0.28	-0.18	-0.25
	Iceland	m	-0.39	-0.10	0.04	-0.05	0.06	0.23	0.33	0.27	-0.21	-0.07	0.03	-0.02
	Ireland	22	-0.22	-0.20	0.01	-0.10	0.29	0.26	0.38	0.33	-0.05	-0.10	0.08	0.00
	Israel	23	-0.10	-0.18	-0.03	-0.09	m	m	m	m	m	m	m	m
	Italy	15	-0.26	-0.25	-0.25	-0.25	-0.20	-0.22	-0.23	-0.22	-0.13	-0.09	-0.11	-0.10
	Japan	m	m	m	m	m	m	m	m	m	m	m	m	m
	Korea	m	-0.14	-0.24	-0.07	-0.14	0.42	0.41	0.48	0.45	0.39	0.42	0.58	0.51
	Latvia	10	-0.10	-0.05	0.09	0.02	-0.48	-0.47	-0.41	-0.44	-0.46	-0.29	-0.18	-0.24
	Lithuania	5	-0.27	0.02	0.16	0.09	-0.29	0.03	0.07	0.04	-0.18	0.03	0.14	0.09
	Luxembourg	m	m	m	m	m	m	m	m	m	m	m	m	m
	Mexico	1	0.19	0.33	0.42	0.29	0.18	0.28	0.28	0.23	0.01	0.15	0.24	0.11
	Netherlands	m	m	m	m	m	m	m	m	m	m	m	m	m
	New Zealand	35	-0.06	0.06	0.11	0.03	0.24	0.30	0.40	0.32	-0.03	0.08	0.16	0.08
	Norway	m	m	m	m	m	m	m	m	m	m	m	m	m
	Poland	1	-0.03	0.00	0.21	0.05	-0.45	-0.49	-0.44	-0.47	-0.20	-0.20	-0.09	-0.17
	Portugal	11	0.04	0.18	0.23	0.14	0.43	0.49	0.49	0.47	0.24	0.36	0.38	0.32
	Slovak Republic	1	-0.49	-0.28	-0.22	-0.27	-0.58	-0.51	-0.45	-0.49	-0.34	-0.33	-0.26	-0.30
	Slovenia	12	-0.07	-0.11	-0.04	-0.07	-0.09	-0.07	-0.03	-0.05	-0.20	-0.15	-0.05	-0.10
	Spain	19	0.10	0.15	0.24	0.18	0.37	0.44	0.40	0.39	0.15	0.20	0.29	0.24
	Sweden	m	m	m	m	m	m	m	m	m	m	m	m	m
	Switzerland	37	-0.06	-0.18	-0.04	-0.10	0.09	-0.08	0.03	0.00	-0.28	-0.30	-0.04	-0.18
	Türkiye	m	0.61	0.67	0.73	0.65	-0.34	-0.33	-0.43	-0.36	0.28	0.25	0.32	0.28
	United States	m	m	m	m	m	m	m	m	m	m	m	m	m
	Other participant													
	Scotland (UK)	m	-0.13	-0.24	-0.06	-0.16	0.18	0.27	0.42	0.34	-0.03	-0.08	0.01	-0.05
	OECD average	17	-0.07	-0.04	0.08	0.01	-0.02	0.00	0.07	0.03	-0.10	-0.03	0.08	0.01
	EU22 average	15	-0.14	-0.10	0.03	-0.05	-0.15	-0.15	-0.08	-0.12	-0.20	-0.12	-0.01	-0.08
Partners	Argentina	m	0.04	0.01	0.13	0.08	0.02	0.09	0.10	0.07	-0.09	-0.07	-0.02	-0.05
	Brazil	m	0.12	0.23	0.33	0.22	-0.02	0.12	0.12	0.07	-0.09	-0.01	0.00	-0.04
	China	m	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	0.03	0.07	0.09	0.05	-0.32	-0.24	-0.30	-0.29	-0.05	0.00	0.04	-0.02
	Saudi Arabia	m	0.10	0.15	0.23	0.15	-0.32	-0.29	-0.30	-0.31	-0.04	-0.03	0.02	-0.02
	South Africa	m	m	m	m	m	m	m	m	m	m	m	m	m
	G20 average	m	m	m	m	m	m	m	m	m	m	m	m	m

Note: The reference year for the share of foreign-born adults (aged 25-64) is 2020 for most countries, please refer to Source section for more information. A negative value in the mean index does not imply that students responded negatively, merely that their answers were less positive than the average student across OECD countries. Likewise, positive values indicate more favourable or more positive responses than the OECD average. Mother's educational attainment refers to ISCED-97. See *Definitions* and *Methodology* sections for more information. Note that the OECD average differs from the one published by PISA as the country coverage is different.
Additional columns showing standard errors (S.E.) are available for consultation on line (see StatLink below).
Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/9v5lhm

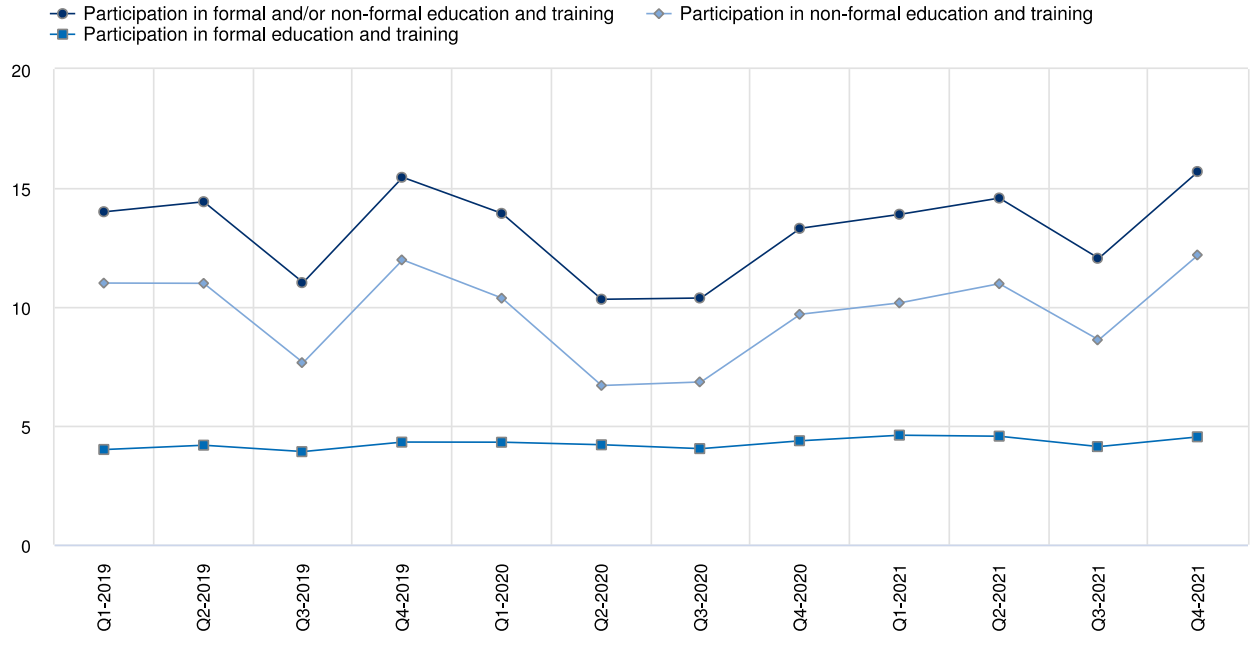
Indicator A7. To what extent do adults participate in education and training?

Highlights

- On average, across OECD countries with available data, the share of adults participating in formal and/or non-formal education and training in the previous four weeks fell from 14% in 2019 to 12% in 2020, but recovered to 14% in 2021.
- Tertiary-educated adults have a higher participation rate in non-formal education and training than those with a lower level of educational attainment. On average 16% of 25-64 year-olds with tertiary attainment had participated in non-formal education and training in the four weeks preceding the survey in 2021, compared to only 4% of their peers with below upper secondary attainment.
- Financial support for learners is mostly only available for traditional higher education programmes. At least 19 out of the 28 OECD countries and subnational jurisdictions surveyed offer support for full-time learners on these programmes, while financial support for short education programmes lasting less than two years is only available in 8 countries and subnational jurisdictions.

Figure A7.1. Trends in participation in formal and/or non-formal education and training, by quarter (2019, 2020 and 2021)

European Union Labour Force Survey (EU-LFS) or national surveys; OECD average; 25-64 year-olds



Note: Participation in formal and/or non-formal education and training during the previous four weeks.
Source: OECD (2022), Table A7.1. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

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Context

The completion of initial education should not be the end of the road for learning: investing in adult learning is essential to upgrade and adapt the skills of the workforce to labour-market needs. In light of a number of large-scale global trends, adult learning is becoming a crucial tool if OECD economies and societies are to adapt to emerging challenges and benefit from new opportunities. Globalisation and technological change mean an increasing number of jobs can be offshored or automated. Demographic change will mean fewer young people entering the labour market, so satisfying demands for skills will mean upgrading the skills of the existing workforce. These trends are already having a major impact on labour markets, and analyses suggest skill needs will continue to change rapidly over the next decades (OECD, 2019[1]).

Adults with low educational attainment are most likely to have low literacy and numeracy skills, and face a high risk of seeing their job offshored or automated. Holding positions with few opportunities for development, they often find themselves in a "low-skill trap" (OECD, 2019[1]). While they are most in need of skills development, they are much less likely to engage in adult learning than those with higher levels of education (OECD, 2021[2]).

The benefits of adult learning are not just economic. It can also contribute to personal fulfilment, improved health, civic participation and social inclusion (Ruhose, Thomsen and Weilage, 2019[3]). However, the wide differences in adult learning activities and participation among OECD countries at similar levels of economic development suggest that there are significant differences in learning cultures, learning opportunities at work and in adult education systems (Borkowsky, 2013[4]).

The indicator explores one facet of adult learning: participation patterns in adult education (both formal and non-formal) and training, with particular focus on who is pursuing education and training opportunities. It looks at the association between participation in adult learning and tertiary education, as well as the determinants of adult education and training, the information and communication technologies (ICT) skills needed to meet the Sustainable Development Goals (SDG), and the emerging importance of micro-credentials in adult education and training.

Other findings

- Across all OECD countries, regardless of survey method, adults' participation in non-formal education and training decreases with age. Similarly, when it comes to enrolment in formal tertiary education, the share among 25-29 year-olds is higher than it is among 40-64 year-olds.
- In most OECD countries with available data, job-related characteristics are the main determinant for participation in adult education and training, outweighing personal characteristics and educational attainment.
- A lack of ICT skills continues to be one of the key barriers keeping people from fully benefiting from the potential of digital technologies, including opportunities for online learning.

Note

Different sources are used for adult participation in formal and/or non-formal education and training. The main difference between the surveys used is the reference period for participation – whether it was in the previous 4 weeks or the 12 months prior to the survey; this leads to big differences in participation rates. In addition, some sources use annual data, which do not capture the fluctuations that may occur within a year, while others use quarterly data that are more relevant to the analysis of the impact of COVID-19.

In the SDG 4 monitoring framework, each target has at least one global indicator and a number of related thematic indicators designed to complement the analysis and measurement of the target. The SDG 4 monitoring framework has a total of 11 global indicators and 32 thematic indicators. A list of all the indicators and their methodologies is available at http://SDG4monitoring.uis.unesco.org. This indicator presents the proportion of youth and adults with ICT skills, by type of skill.

Analysis

Trends in participation in formal and/or non-formal education and training

Adult learning, also known as lifelong learning, can help individuals progress in their careers, and adapt to a fast-changing and uncertain world. This indicator looks at the adult learning without taking into account the labour force status of the individuals. Adult learning often takes the form of non-formal and/or informal education and training, in contrast to participation in formal education, which is more common among young people (Table A7.1). Although participation in formal education and training was largely stable between the first quarter of 2019 and the fourth quarter of 2021, the COVID-19 pandemic clearly affected participation in non-formal education and training. A dip in the third quarter of each year reflects a natural decline in participation rates during this period (the summer months in most OECD countries). However, in 2020 the drop occurred earlier, in the second quarter of the year reflecting the impact of the pandemic (Figure A7.1).

Overall, participation rates of adults in both formal and non-formal education and training had returned to their pre-pandemic levels by 2021 (with the data also showing the usual decline during summer months). On average, across OECD countries with available data in 2021, 14% of adults had participated in either formal or non-formal education and training in the preceding four weeks (Figure A7.1). In Greece, Poland and the Slovak Republic 5% or less of adults had participated, while the share reached 25% or above in Finland, the Netherlands and Sweden (Table A7.1). Box A7.1 analyses the determinants of participation in formal and/or non-formal education and training across European Union member states.

Non-formal education was the most important contributor to adult education and training between 2019 and 2021 (Figure A7.1). In 2021, on average over a four-week reference period, 10% of adults participated in non-formal education and training. Over this period, 22% of adults participated in non-formal education and training in Finland and 28% in Sweden, but only 1% participated in non-formal education and training in Costa Rica, Greece and the Republic of Türkiye. Adult participation in formal education and training is less common: on average 4% of adults participated in formal education across countries during the reference period. Finland (12%) and Sweden (10%) were the countries with the highest adult participation rate in formal education and training (Table A7.1, available on line).

Among countries that reported participation in the 12-month reference period preceding the Survey of Adult Skills (PIAAC) in 2019, the share of adults participating in non-formal education and training was also larger than the share participating in formal education. Participation by adults in formal and/or non-formal education and training was at least 50% in Canada, Israel, Korea and New Zealand (Table A7.1).

Box A7.1. Determinants of participation in adult education and training

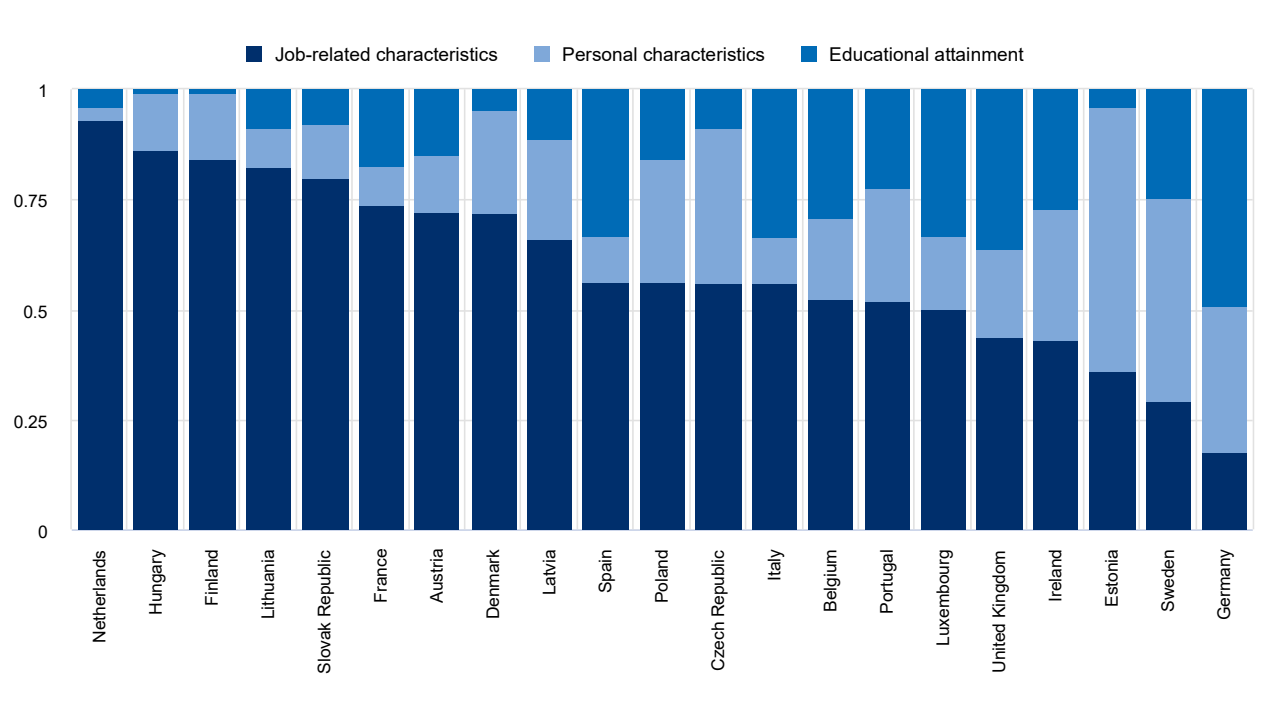
Previous editions of *Education at a Glance* have explored the factors that affect the likelihood of participating in adult education and training, such as job-relatedness, firm size, employment sector, gender and the presence of young children in the household. The analysis here explores the impact of each type of determinant, when different factors are considered together.

Using data from the 2016 wave of the Adult Education Survey, the European Commission's Joint Research Centre analysed the proportion of workers aged between 25 and 64 who reported having participated in formal or non-formal adult education and training in the preceding 12 months. Determinants are divided into three categories: personal characteristics (gender, age, migrant status, married/cohabiting status and degree of urbanisation of place of residence), educational attainment (low, medium and high) and job-related characteristics (occupation, firm size, work situation, professional status and sector).

Overall, job-related characteristics tend to predominate, compared to personal characteristics and educational attainment. However, in some countries job-related characteristics are not as prevalent as in others. For instance, in Germany and Sweden, education and personal characteristics are more important than job-related characteristics, which are mostly defined by occupation and firm size. In contrast, in Finland and France, job-related characteristics are prevalent and mostly defined by professional status (Figure A7.2).

Figure A7.2. Determinants of participation in adult education and training by job-related characteristics, personal characteristics and education (2016)

Relative contribution of each group of characteristics on whether or not an adult participates in adult education and training activities; in per cent



Note: Adult education and training refers to participation in formal and/or non-formal education and training. The analysis considers the average worker aged 25 to 64 who reported having participated in formal and/or non-formal education during the 12 months prior to the survey. The figure is based on the results of logistic regression models. It shows proportions of the overall improvement in model fit that is attributable to a given set of determinants.
Countries are ranked in descending order of the relative contribution (in per cent) of job-related characteristics to participation in adult education and training activities.
Source: Eurostat, 2016 wave of the Adult Education Survey.

StatLink https://stat.link/1iqd9x

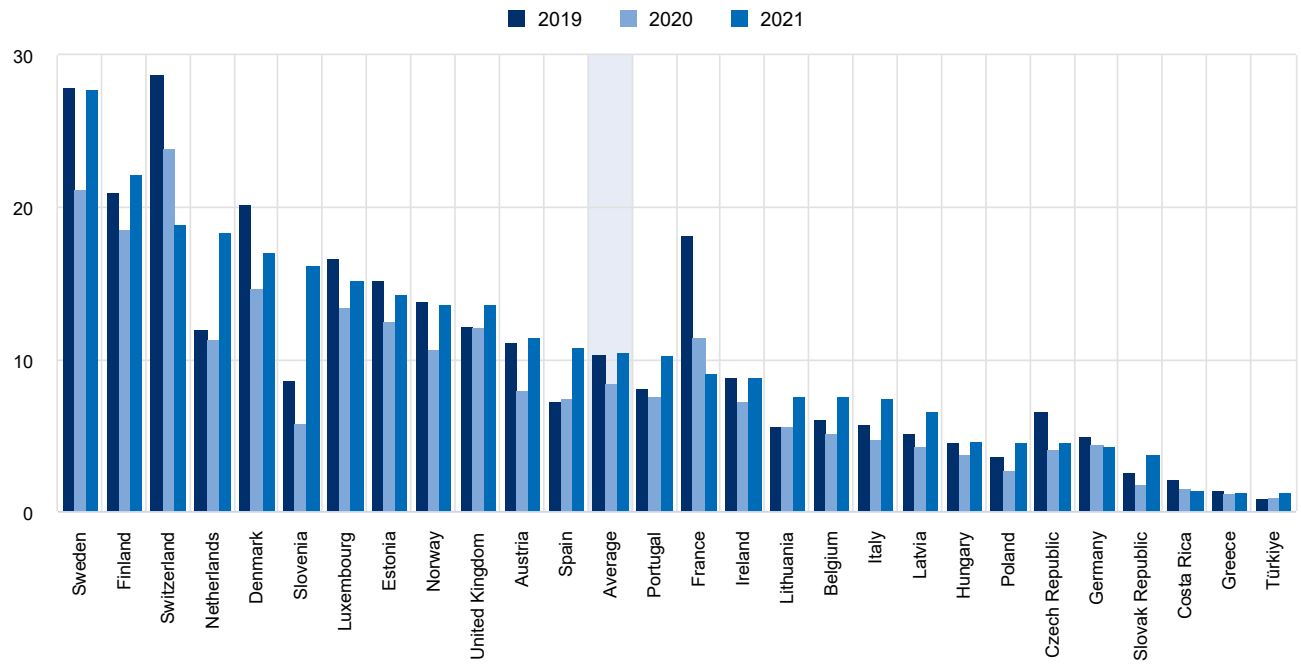
Participation in non-formal education and training in the context of COVID-19

The implementation of social distancing measures during the first months of the COVID-19 pandemic led to strict shutdowns and extensive use of remote working arrangements. In 2020, across OECD countries, the average share of people aged 25-64 who had participated in non-formal education and training in the last four weeks fell by 2 percentage points compared with 2019 (Figure A7.3). On average across the countries that collected data using a four-week reference period, adult participation in non-formal education and training fell by 4 percentage points between the first and second quarter of 2020. Trends in participation in both formal and/or non-formal education and training highlight the decrease in participation during the first quarters of 2020, and the drop in non-formal education and training accounts for most of this decline. This reflects the adult learning losses induced by the first phases of the COVID-19 pandemic (Table A7.1, available on line).

In 2021, adult participation in non-formal education and training returned to pre-pandemic levels in most countries. The extensive use of remote education and training may have benefited by the expansion of digital technologies. In addition, the reopening of schools may have removed a barrier to education and training for adults with young children at home. On average, the share of adults who had participated in non-formal education and training in the last four weeks increased by 2 percentage points between 2020 and 2021. In 12 out of 28 countries participation rates in non-formal education and training in 2021 even exceeded their pre-pandemic levels. However, participation rates have not returned to their pre-pandemic levels in all countries (Figure A7.3).

Figure A7.3. Trends in participation in non-formal education and training (2019, 2020 and 2021)

European Union Labour Force Survey (EU-LFS) or national surveys; annual average of quarterly data; 25-64 year-olds



Note: Participation in non-formal education and training during the previous four weeks in EU-FLS, Costa Rica, Türkiye and the United Kingdom national surveys.
Countries are ranked in descending order of the participation of 25-64 year-olds in non-formal education and training in 2021.
Source: OECD (2022), Table A7.1. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

StatLink https://stat.link/nofzhs

The impact of the COVID-19 pandemic on non-formal education and training opportunities has been uneven, with adults with lower levels of educational attainment being hardest hit. Participation in non-formal education and training is largely driven by employment, which has also been affected by the pandemic. In 2020, workers without an upper secondary qualification were more likely to lose their jobs or see a reduction in their hours worked than their peers with upper secondary attainment, while those with a tertiary qualification were least affected (OECD, 2021[5]). Workers without tertiary attainment were also more commonly employed in the sectors most affected by widespread lockdown scenarios than those with a tertiary qualification – 25% of those without tertiary education, compared to 22% of tertiary-educated workers. The differences are even larger across countries, reaching at least 10 percentage points in Australia and Norway (OECD, 2021[6]).

The impact of the pandemic and the associated lockdowns on employment has also varied with the ability to work from home, which is in turn associated with educational attainment. On average, only 18% of workers without tertiary attainment are able to work from home, compared to 54% of tertiary-educated workers among countries taking part in the Survey of Adult Skills (PIAAC) between 2011 and 2017 (Espinoza and Reznikova, 2020[7]). Likewise, according to the analysis included in Indicator A6, just 10% of employed adults with below upper secondary attainment reported usually or sometimes working from home in 2021, compared to 46% of those with tertiary attainment (see Indicator A6).

An additional challenge is that a large share of adults with lower educational attainment lack the skills needed to benefit from digital learning opportunities. While the capacity to pursue online education might have been useful before the pandemic, once learning activities moved, at least partly, from training rooms to online platforms, it became a pre-requisite for education in many cases. Adults without a tertiary qualification are least prepared to benefit from the digital transition (see Indicator A6). With the widespread use of ICT across all economic sectors, ICT skills are an essential requirement for the majority of job roles. Assessing youth and adults' proficiency in such skills helps governments to develop targeted policies to improve them (Box A7.2). Ensuring that most individuals are equipped with at least basic ICT skills is a critical challenge.

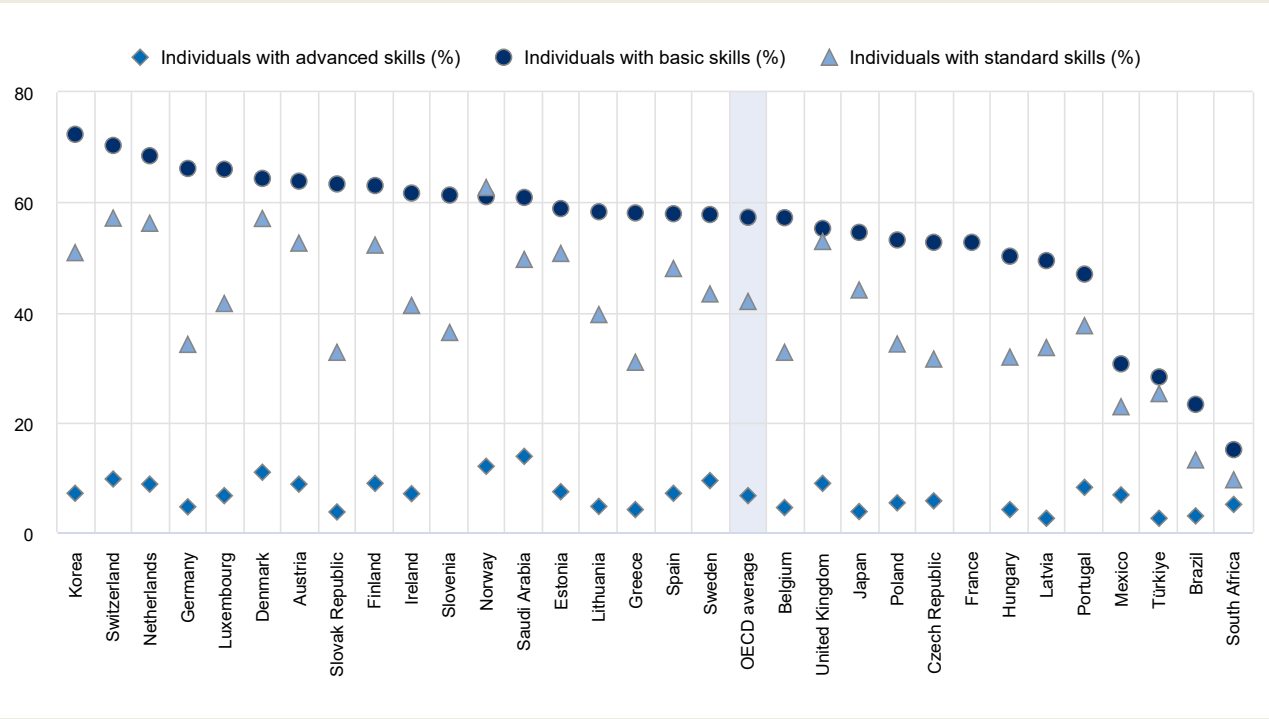
Box A7.2. Measuring information and communication technologies skills

The lack of ICT skills continues to be one of the key barriers keeping people from fully benefiting from the potential of digital technologies. Indicator 4.4.1 of the Sustainable Development Goals (SDG) measures the proportion of youth and adults with ICT skills, by type of skill. The indicator is calculated as the percentage of people in a given population who responded "yes" to a selected number of questions such as the use of ICT skills in various subject areas or learning domains, and the use of ICT skills regardless of where that activity took place, as well as the minimum amount of time spent using ICT skills and the availability of Internet access inside or outside their school or workplace, over the previous three months.

Because self-reporting may be subjective, the indicator measures ICT skills based on whether an individual has recently performed certain activities that require different levels of skill. To facilitate reporting, these activities have been grouped into three broader categories: basic, standard and advanced skills. Basic skills are relatively simple tasks, such as moving a file or folder, or sending an e-mail with an attachment. Standard skills include working with spreadsheets, creating electronic presentations or installing and configuring software. Advanced skills are being able to programme or code.

Figure A7.4. Proportion of youth and adults with information and communication technologies (ICT) skills, by skill level

SDG Indicator 4.4.1, in per cent



Note: For each country, the value for basic skills is the average value of the available recent data for following four activities: copying or moving a file or folder, using copy and paste tools to duplicate or move information within a document, sending e-mails with attached files, and transferring files between a computer and other devices. The value for standard skills is the average value of the available recent data for following four activities: using basic arithmetic formula in a spreadsheet; connecting and installing new devices; creating electronic presentations with presentation software; and finding, downloading, installing and configuring software. The value for advanced skills is the value for writing a computer program using a specialized programming language.
The age range for this indicator is 16-74 years except for Brazil and Japan (15-74 years) and Korea (15-49 years).
ITU data for European countries are provided by Eurostat. Differences between Eurostat digital skills data and ITU data may be found, due to differences in how skills are grouped, and the nature of the different skills included in the calculation.
Countries are ranked in descending order of proportion of youth and adults with basic ICT skills.
Source: International Telecommunication Union (ITU). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

StatLink https://stat.link/tjkou6

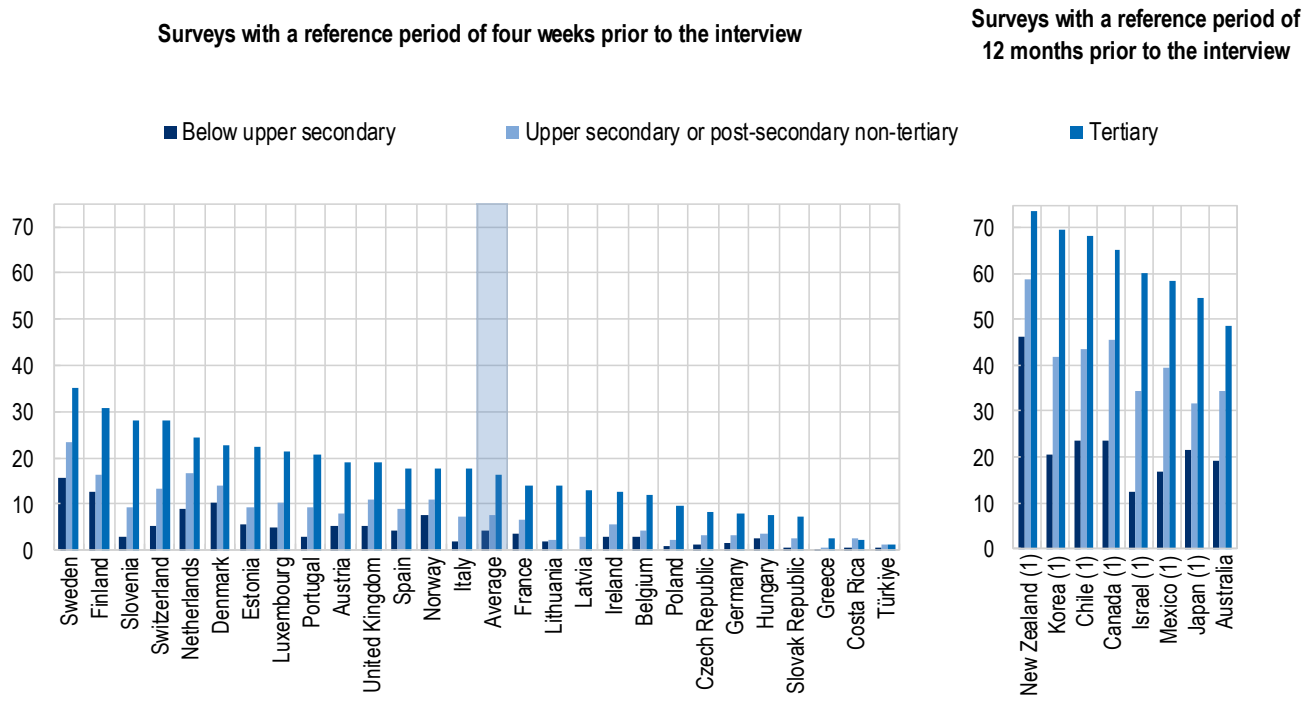
On average among OECD countries with available data, 55% of individuals reported having carried out one of the activities that comprise the basic skills category, e.g. sending an e-mail with an attachment, in the previous three months. In Korea and Switzerland, an average of at least 70% of individuals reported having these basic skills, compared to less than 30% in Brazil, South Africa and Türkiye. On average of 42% had used the standard skill components across OECD countries in that time. In Norway, more than 60% of individuals reported performing some of those activities, while only 13% did so in Brazil, and 10% in South Africa. In contrast, only 7% of individuals reported using advanced skills, such as writing a computer program using a specialised programming language in that time, ranging from 3% in Brazil, Latvia and Türkiye to more than 10% in Denmark, Norway and Saudi Arabia (Figure A7.4).

Participation in non-formal education and training, by gender, age group and educational attainment

Tertiary-educated adults have a higher participation rate in non-formal education and training than those with a lower levels of educational attainment. On average across OECD countries with available data, in 2021, 4% of 25-64 year-olds with below upper secondary attainment had participated in non-formal education and training in the four weeks preceding the survey. This rate increases to 8% for those with upper secondary or post-secondary non-tertiary attainment and reaches 16% for those with a tertiary attainment. Participation across countries varies greatly even among tertiary-educated adults: ranging from 3% or less in Costa Rica, Greece and Türkiye to 35% in Sweden (Figure A7.5).

Figure A7.5. Participation in non-formal education and training, by educational attainment (2021)

In per cent; 25-64 year-olds



Note: The left panel presents data with a four-week reference period (from the EU-LFS and national surveys for Costa Rica, Türkiye and the United Kingdom). The right panel presents data with a 12-month reference period (from PIAAC and a national survey for Australia).
1. Reference year differs from 2021. Refer to the source table for more details.
Countries are ranked in descending order of the participation of tertiary-educated 25-64 year-olds in non-formal education and training.
Source: OECD (2022), Table A7.2. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

StatLink https://stat.link/u1crsz

Even within the category of tertiary-educated adults, participation in non-formal education and training increases with educational attainment. In the four weeks prior to the survey, 22% of adults with doctoral or equivalent degrees participated in non-formal education and training, compared to 12% of those with a short-cycle tertiary degree. Similar findings are observed in participation rates among surveys using the preceding 12 months as a reference period (Table A7.2). The difference in the reference period for participation (the previous 4 weeks or the previous 12 months), as well as the frequency of date (annual or by quarter) explain the large differences in participation rates in adult education and training between countries participating in EU-FLS, Survey of Adult Skills (PIAAC) or in national surveys (Table A7.2; Figure A7.5).

As the analysis of the participation in adult education and training by gender with data from the Adult Education Survey (AES) in *Education at a Glance 2021* has shown, participation rates in non-formal education and training do not differ much by gender (OECD, 2021[8]). On average over a four-week reference period, the participation of women in non-formal education and training is about 2 percentage points higher than the participation of men. The gender gap exceeds 7 percentage points (in favour of women) only in Denmark, Finland and Sweden. In countries that collected data using a 12-month reference period such as Canada, Chile, Japan, Korea, Mexico and New Zealand, the gender gap is reversed. On average, 23% of women and 25% of men had taken part in non-formal education and training in the previous 12 months (Table A7.2).

Older adults are less likely to participate in non-formal education and training than the younger ones regardless their labour force status (OECD, 2021[6]). Across all countries, regardless of whether surveys have a reference period of 4 weeks or 12 months, participation in non-formal education and training decreases from the age of 40 onwards. For instance, on average, 12% of 25-34 year-olds reported participating in non-formal education and training in the four weeks prior to the survey compared with 7% of 55-64 year olds (Table A7.2).

Box A7.3 considers the support available for learners to access innovative alternatives to traditional formal education programmes such as micro-credentials. Studies suggest that learners in higher education micro-credential courses tend to be more educated and more skilled (OECD, 2021[9]).

Box A7.3. Micro-credentials, an alternative to traditional formal education programmes

The accelerating skills obsolescence and the increasing cost of higher education for both learners and providers in many countries are pushing education systems to develop more flexible learning opportunities. In this context, a proliferation of learning programmes and credentials have been positioned as “alternatives” to traditional formal programmes. Alternative credentials include academic certificates, industry certifications and digital badges. One form of alternative credentials gaining increasing policy attention is the micro-credential. Many definitions of micro-credentials are currently in use, but most denote an organised education or training programme associated with a credential, which validates a specific skill, knowledge or experience (OECD, 2021[9]). The term “micro-credential” is commonly understood to refer to both the credential itself and the education or training programme which leads to the credential award.

The OECD identified 8 types of micro-credential programmes based on the features of the 118 programmes identified in a sample of European institutions. These are:

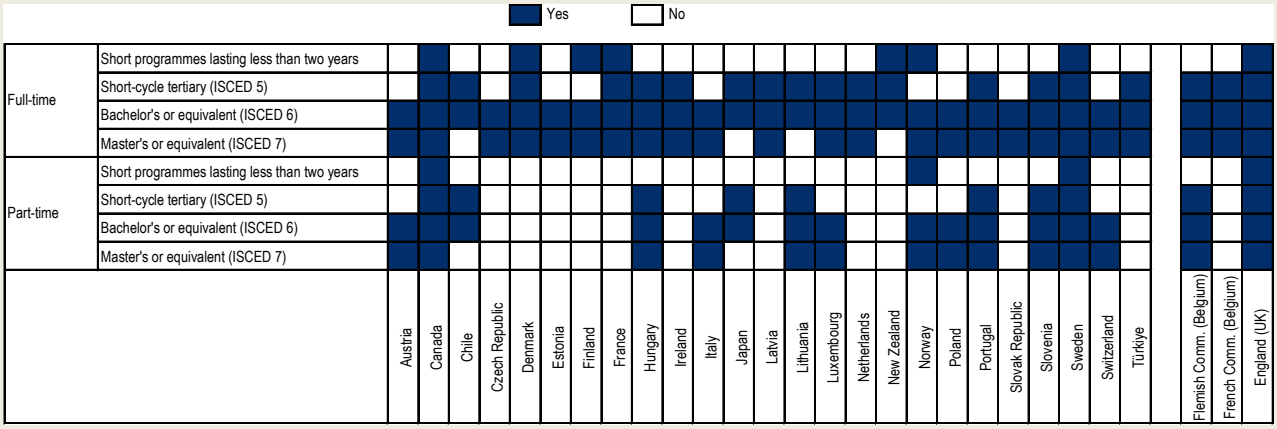
- individual courses and modules from larger programmes
- extension and complementary courses for existing students
- specialisations for the acquisition of specific knowledge and/or skills
- continuing professional development and training courses
- continuing education and lifelong learning courses
- massive open online courses (MOOCs) and asynchronous learning programmes
- institution-specific degrees and diplomas
- postgraduate sub-degree programmes.

The 2020 OECD Higher Education Policy Survey (HEPS) aimed to advise policy makers on how financial and human resources could be allocated, managed and used in higher education systems to improve performance in higher education (Golden, Troy and Weko, 2021[10]). Policy makers have come to see micro-credentials as a way to provide learners with important opportunities for academic advancement, personal development, upskilling and reskilling. Micro-credentials are also recognised by governments as a potential means to support improved access to higher education, including for learners from underserved groups. Micro-credentials may be offered by a range of organisations, not all of which are

traditional providers of training and education. They include schools, higher education institutions, and private education and training providers. In general, micro-credential learners are likely to be of working age, tend to already have a higher education degree, tend to be from more privileged socio-demographic groups, generally have a higher level of digital competence, and are likely to already have some knowledge related to the course topic,

Comprehensive public financial support can help to improve access to micro-credentials for learners in less advantaged circumstances. However, currently, support for learners to acquire micro-credentials appears far from comprehensive – at least through established higher education financial support policies. The 2020 OECD Higher Education Policy Survey showed that financial supports for learners are mostly available for traditional higher education programmes.

Figure A7.6. Countries and subnational jurisdictions providing grant support to students, by programme type and study intensity (2020)



Source: Higher Education Policy Survey, 2020. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

StatLink https://stat.link/6172im

In most countries and subnational jurisdictions student grants are far more likely to be available to support learners taking traditional full-time bachelors' programmes than short, non-degree programmes. Such support also tends to be less accessible for part-time students, which is the likely mode of study for micro-credentials (Figure A7.6).Flexible and targeted non-degree learning opportunities in higher education thus often tend to be fee-based, funded by either learners or their employers, rather than public financial support programmes. Consequently, there is a risk that the swift expansion of micro-credential opportunities will further widen gaps in skills and advancement, permitting relatively affluent learners employed in firms with generous support for reskilling to capitalise on micro-credential opportunities that others lack.

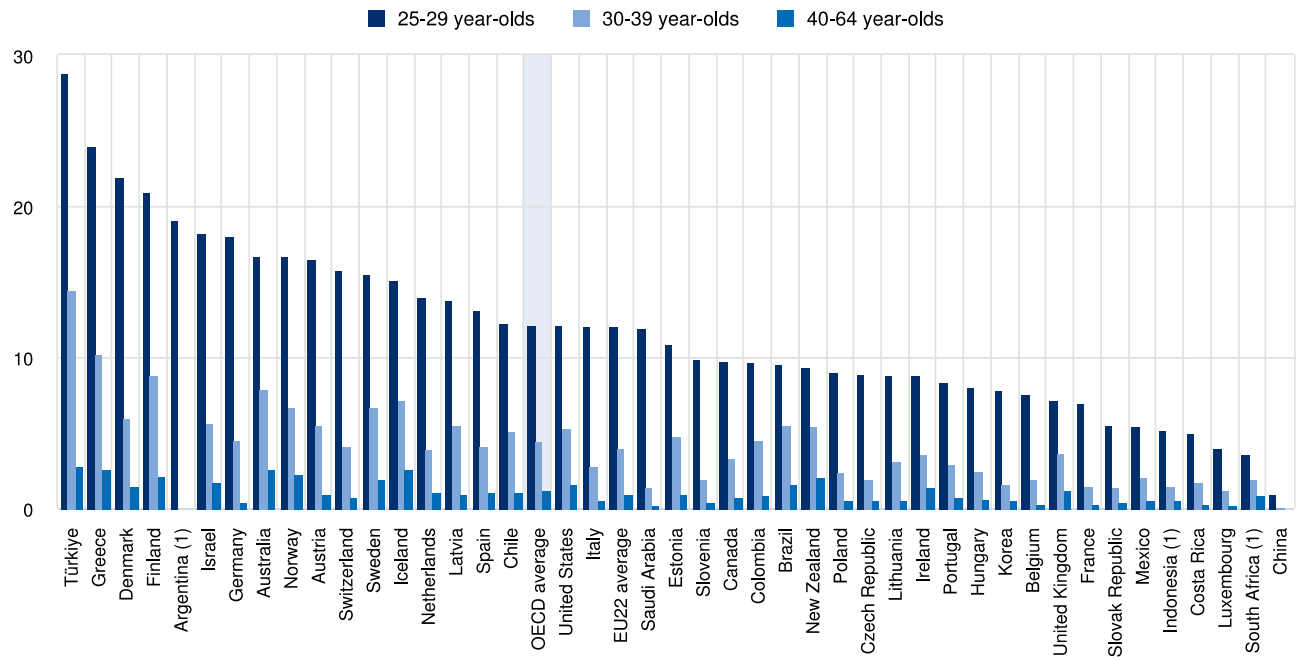
Enrolment in formal education, by age group and educational attainment

Enrolment in formal education is less common among the older population, as students graduate leaving the formal education system and entering the labour market. Enrolment in formal tertiary education tends to occur at a younger age (see Indicator B1). On average across OECD countries, in 2020, 12% of 25-29 year-olds are enrolled in formal tertiary education, falling to 4% among 30-39 year-olds and to less than 1% among 40-64 year-olds. Across OECD and partner countries, enrolment in formal tertiary education among 25-29 year-olds ranges from 4% in Luxembourg and South Africa to over 25% in Türkiye. In Australia, Finland, Greece, Iceland, Norway, Sweden and Türkiye, at least 7% of 30-39 year-olds are enrolled in formal tertiary education. At most 3% of 40-64 year-olds are enrolled in formal tertiary education across OECD countries, such as in Australia, Greece, Iceland and Türkiye (Figure A7.7).

Adults are more likely to pursue higher levels of education than lower levels. On average across OECD countries with available data, less than 1% of the 25-64 year-olds are enrolled in formal education below upper secondary level, 1% in upper secondary and post-secondary non-tertiary education and 3% in tertiary education (Table A7.3). Participation rates in programmes below tertiary level may reflect the extent to which adult education provides second chances.

Figure A7.7. Enrolment rates in formal tertiary education, by age group (2020)

In per cent



1. Reference year differs from 2020. Refer to the source table for more details.
Countries are ranked in descending order of the percentage of 25-29 year-olds in tertiary education.
Source: OECD (2022), Table A7.3. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).

StatLink https://stat.link/tienro

Definitions

Adults refer to 25-64 year-olds; **younger adults** refer to 25-34 year-olds; **older adults** refer to 55-64 year-olds.

Adult education and training (adult learning) means the participation of adults in lifelong learning. Adult learning usually refers to learning activities after the end of initial education. The participation rate in education and training covers participation in both formal and non-formal education and training.

Educational attainment refers to the highest level of education successfully completed by an individual.

Learning activities are any activities of an individual organised with the intention to improve their knowledge, skills, and competences. There are two fundamental criteria that distinguish learning activities from non-learning activities: they must be intentional and organised. Intentional learning (as opposed to random learning) is defined as a deliberate search for knowledge, skills or competences or attitudes of lasting value. Organised learning is defined as learning planned in a pattern or sequence with explicit or implicit aims.

The learning activities are defined within a classification named classification of learning activities (CLA) (EUROSTAT, 2016[11]). The current version of the CLA (2016 edition) is aligned with ISCED 2011:

- **Formal education and training** is defined as "education that is institutionalised, intentional and planned through public organisations and recognised private bodies, and - in their totality - constitute the formal education system of a country. Formal education programmes are thus recognised as such by the relevant national education or

equivalent authorities, e.g. any other institution in cooperation with the national or sub-national education authorities. Formal education consists mostly of initial education [...]. Vocational education, special needs education and some parts of adult education are often recognised as being part of the formal education system. Qualifications from formal education are by definition recognised and, therefore, are within the scope of ISCED. Institutionalised education occurs when an organisation provides structured educational arrangements, such as student-teacher relationships and/or interactions, that are specially designed for education and learning" (UIS, 2012[12]).

- **Non-formal education and training** is defined as "education that is institutionalised, intentional and planned by an education provider. The defining characteristic of non-formal education is that it is an addition, alternative and/or complement to formal education within the process of lifelong learning of individuals. It is often provided in order to guarantee the right of access to education for all. It caters to people of all ages but does not necessarily apply a continuous pathway structure; it may be short in duration and/or low-intensity; and it is typically provided in the form of short courses, workshops or seminars. Non-formal education mostly leads to qualifications that are not recognised as formal or equivalent to formal qualifications by the relevant national or sub-national education authorities or to no qualifications at all. Nevertheless, formal, recognised qualifications may be obtained through exclusive participation in specific non-formal education programmes; this often happens when the non-formal programme completes the competencies obtained in another context" (UIS, 2012[12]).
- Informal learning is "intentional, but it is less organised and less structured ... and may include for example learning events (activities) that occur in the family, in the workplace, and in the daily life of every person, on a self-directed, family-directed or socially-directed basis" (EUROSTAT, 2016[11]).
- Job-related non-formal education and training: taking part in non-formal education and training activity in order to obtain knowledge and/or learn new skills needed for a current or future job, to increase earnings, to improve job and/or career opportunities in a current or another field and generally to improve their opportunities for advancement and promotion.
- Employer-sponsored job-related non-formal education and training: all job-related non-formal education and training activities paid for at least partially by the employer and/or done during paid working hours.

Levels of education: See the *Reader's Guide* at the beginning of this publication for a presentation of all ISCED 2011 levels.

Lifelong learning encompasses all learning activities undertaken throughout life with the aim of improving knowledge, skills and competences, within personal, civic, social or employment-related perspectives. The intention or aim to learn is the critical point that distinguishes these activities from non-learning activities, such as cultural or sporting activities.

Methodology

For data from the Survey of Adult Skills (PIAAC), observations based on a numerator with fewer than 5 observations or on a denominator with fewer than 30 observations times the number of categories have been replaced by "c" in the tables.

This indicator includes data on participation in formal and/or non-formal education and training from different sources that have different reference period: either 4 weeks or 12 months before the survey.

The European Union-Labour Force Survey (EU-LFS) is held quarterly and measures participation in formal and/or non-formal education and training during a four-week period excluding guided on-the-job training. The EU-LFS methodology can be found at https://ec.europa.eu/eurostat/statistics-explained/index.php?title=EU_labour_force_survey_-_methodology.

National surveys in Costa Rica, Türkiye and the United Kingdom also use a four-week reference period, while the Survey of Adult Skills (PIAAC) as well as the national surveys of Australia and Colombia measure participation in formal and/or non-formal education and training during a 12-month period.

The data presented in Figure A7.2 refer to the results of a logistic regression (run for each country separately) where the dependent variable captures participation and non-participation in adult learning activities. The independent variables are grouped into the three categories: personal characteristics, educational attainment and job-related characteristics. The relative importance of each of these three categories in accounting for participation in adult learning activities is identified by comparing the reduction in deviance attributable to all the independent variables belonging to each category. The relative contribution of each group of determinants could not be presented in terms of the "proportion of variance explained", because this concept is not well defined in the context of logistic regression (European Commission, 2020[13]).

The International Telecommunication Union (ITU) methodology can be found at: https://www.itu.int/en/ITU-D/Statistics/Documents/publications/manual/ITUManualHouseholds2020_E.pdf (ITU, 2020[14]).

The Higher Education Policy Survey (HEPS) used in Figure A7.6 refers to the Higher Education Policy data collection that occurred during the second half of 2020 and which was administrated by the OECD Higher Education Policy team. In total, 29 OECD countries and other participants responded to at least one of the survey modules, and 27 jurisdictions completed the entire survey (Golden, Troy and Weko, 2021[10]).

Source

- For Tables A7.1 and A7.2 on participation in formal and/or non-formal education and training: the EU-LFS for European OECD countries (i.e. Austria, Belgium, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, the Netherlands, Norway, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden and Switzerland); the Survey of Adult Skills (PIAAC) for Canada, Chile, Israel, Japan, Korea, Mexico and New Zealand; and national data sources for Australia (ABS survey of Work-Related Training and Adult Learning), Costa Rica (Continuous Employment Survey), Colombia (Great Integrated Household Survey), Türkiye (Labour Force Survey) and the United Kingdom (Labour Force Survey).
- For Table A7.3 on enrolment rates in formal education: The UNESCO-UIS/OECD/EUROSTAT data collection on education statistics administered by the OECD in 2020 for all countries; all data refer to the academic year 2019/20 (for details, see Annex 3 at https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).
- For Figure A7.2 on the determinants of adult learning: the Adult Education Survey (AES) for European OECD countries.
- For Figure A7.4 on the proportion of youth and adults with ICT skills: the World Telecommunication/ICT Indicators Database for all countries.
- For Figure A7.6 on jurisdictions providing grant support to students: the Higher Education Policy Survey (HEPS) for 28 OECD countries and subnational jurisdictions.

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Indicator A7 tables

Tables Indicator A7. To what extent do adults participate in education and training?

Table A7.1	Trends in participation in formal and/or non-formal education and training, by year and quarter (2019, 2020 and 2021)
Table A7.2	Participation in non-formal education and training, by gender, age group and educational attainment (2021)
Table A7.3	Enrolment rates in formal education, by level of education and age group (2020)

StatLink https://stat.link/aj6ef5

Cut-off date for the data: 17 June 2022. Any updates on data can be found on line at: http://dx.doi.org/10.1787/eag-data-en. More breakdowns can also be found at http://stats.oecd.org, *Education at a Glance Database*.

Table A7.1. Trends in participation in formal and/or non-formal education and training, by year and quarter (2019, 2020 and 2021)

In per cent, 25-64 year-olds

		Surveys with a reference period of four weeks prior to the interview														
		Participation in formal and/or non-formal education and training														
		2019					2020					2021				
		Annual average	First quarter	Second quarter	Third quarter	Fourth quarter	Annual average	First quarter	Second quarter	Third quarter	Fourth quarter	Annual average	First quarter	Second quarter	Third quarter	Fourth quarter
		%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
		(1)	(3)	(5)	(7)	(9)	(11)	(13)	(15)	(17)	(19)	(21)	(23)	(25)	(27)	(29)
OECD	Countries															
	Austria	15	16	16	11	16	12	14	9	10	13	15[b]	14[b]	16	12	16
	Belgium	8	9	9	5	10	7	9	7	6	9	10[b]	10[b]	11	8	11
	Costa Rica	9	8	9	10	9	8	9	8	9	8	8	7	8	8	8
	Czech Republic	8	9	9	6	8	6	8	4	5	5	6[b]	5[b]	6	6	7
	Denmark	25	27	26	21	27	20	25	15	18	22	22[b]	17[b]	22	22	28
	Estonia	20	19	22	16	24	17	20	13	15	21	18[b]	19[b]	18	16	20
	Finland	29	30	29	23	33	27	30	25	22	33	31[b]	32[b]	32	25	34
	France	20	21	21	14	23	13	21	8	10	13	11[b]	11[b]	11	9	14
	Germany	8	8	9	7	9	8	9	8	7	8	8[b]	7[b]	8	7	8
	Greece	4	4	4	4	4	4	4	4	4	4	3[b]	4[b]	4	3	3
	Hungary	6	7	5	4	7	5	6	4	4	7	6[b]	6[b]	5	5	6
	Ireland	13	12	13	11	15	11	14	9	9	12	14[b]	15[b]	14	12	13
	Italy	8	9	9	6	9	7	8	7	6	8	10[b]	11[b]	11	7	10
	Latvia	7	8	7	6	8	7	8	4	6	8	9[b]	10[b]	9	7	9
	Lithuania	7	8	7	5	7	7	8	7	6	7	8[b]	9[b]	10	7	9
	Luxembourg	19	20	20	14	22	16	18	15	12	20	18[b]	19[b]	19	13	20
	Netherlands	19	20	20	18	21	19	20	18	18	20	27[b]	27[b]	28	24	28
	Norway	19	20	21	14	23	16	19	15	12	20	20[b]	19[b]	19	16	24
	Poland	5	5	5	4	5	4	5	3	3	3	5[b]	5[b]	5	5	6
	Portugal	11	11	12	8	12	10	10	9	9	12	13[b]	13[b]	14	11	14
	Slovak Republic	4	5	3	3	4	3	4	2	2	3	5[b]	4[b]	5	5	5
	Slovenia	11	12	12	8	13	8	11	6	8	9	19[b]	17[b]	21	15	22
	Spain	11	11	12	8	12	11	11	11	9	13	14[b]	15[b]	15	12	16
	Sweden	34	37	35	27	38	29	34	27	24	30	35[b]	33[b]	36	29	41
	Switzerland	32	31	35	26	37	28	31	23	25	32	23[b]	21[b]	24	20	26
	Türkiye	6	6	6	5	6	6	6	5	5	6	6	7	6	6	7
	United Kingdom	15	15	15	14	16	15	15	14	15	16	17	17	16	16	17
	Average	14	14	14	11	15	12	14	10	10	13	14[b]	14[b]	15	12	16

		Surveys with a reference period of twelve months prior to the interview														
		Participation in formal and/or non-formal education and training														
		2019					2020					2021				
		Annual average	First quarter	Second quarter	Third quarter	Fourth quarter	Annual average	First quarter	Second quarter	Third quarter	Fourth quarter	Annual average	First quarter	Second quarter	Third quarter	Fourth quarter
		%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
		(1)	(3)	(5)	(7)	(9)	(11)	(13)	(15)	(17)	(19)	(21)	(23)	(25)	(27)	(29)
OECD	Countries															
	Australia	m	m	m	m	m	m	m	m	m	m	39	m	m	m	m
	Canada [1]	58	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Chile [1]	47	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Israel [1]	53	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Japan [1]	42	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Korea [1]	50	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Mexico [1]	31	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	New Zealand [1]	68	m	m	m	m	m	m	m	m	m	m	m	m	m	m

Note: Participation in formal and/or non-formal education and training during previous 4 weeks in EU-LFS, Costa Rica, Türkiye and the United Kingdom national surveys, and previous 12 months in Survey of Adult Skills (PIAAC) and Australia national survey. See *Definitions* and *Methodology* sections for more information. Note that the average differs from the one published by Eurostat as this is an unweighted average and the country coverage is different.
Additional columns showing standard errors (S.E.) as well as data by type of education and training are available for consultation on line (see StatLink below).
1. Year of reference differs from 2019: 2017 for Mexico; 2015 for Chile, Israel and New Zealand; and 2012 for Canada, Japan and Korea.
Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/vkpuob

Table A7.2. Participation in non-formal education and training, by gender, age group and educational attainment (2021)

In per cent

		Surveys with a reference period of four weeks prior to the interview													
			Gender		Age group						Tertiary				
		Total	Men	Women	25-34 year-olds	35-44 year-olds	45-54 year-olds	55-64 year-olds	Below upper secondary	Upper secondary or post-secondary non-tertiary	Short-cycle tertiary	Bachelor's or equivalent	Master's or equivalent	Doctoral or equivalent	Total
		%	%	%	%	%	%	%	%	%	%	%	%	%	%
		(1)	(3)	(5)	(7)	(9)	(11)	(13)	(15)	(17)	(19)	(21)	(23)	(25)	(27)
OECD	**Countries**														
	Austria	11	10	13	15	13	12	7	5	8	14	22	24	23	19
	Belgium	8	8	7	9	10	7	5	3	4	8 r	10	15	20	12
	Costa Rica	1	1	2	3	2	1	0	1	3	2	2	4	m	2
	Czech Republic	5	5	5	6	5	5	3	1 r	3	6	6	9	8 r	8
	Denmark	17	14	21	18	18	18	15	10	14	20	22	24	28	23
	Estonia	14	11	17	16	16	14	10	6 r	9	13 r	23	25	c	22
	Finland	22	18	27	22	25	25	17	13	16	24	29	36	43	31
	France	9	8	10	11	11	9	5	4	7	12	14	17	15	14
	Germany	4	4	5	6	5	4	3	2	3	5	6	10	13	8
	Greece	1	1	1	3	1	1	0	0	1	2	2	4	5	3
	Hungary	5	5	5	5	5	5	3	3	4	7	7	8	13	8
	Ireland	9	8	10	10	10	9	7	3	6	9	12	16	19	13
	Italy	7	8	7	7	8	8	6	2	7	9	13	19	24	18
	Latvia	7	4	9	7	8	7	4	c	3	10 r	12	15	c	13
	Lithuania	8	6	9	9	10	7	5	2	2	c	11	20	28	14
	Luxembourg	15	15	16	18	18	13	c	5 r	10 r	11	23	22	22	21
	Netherlands	18	18	18	19	20	19	16	9	17	25	22	27	24	24
	Norway	14	13	14	15	15	14	11	8	11	15	18	21	19	18
	Poland	5	4	5	5	6	5	2	1	2	3	7	10	18	10
	Portugal	10	9	11	12	12	11	6	3	9	18	15	23	26	21
	Slovak Republic	4	4	4	4	4	4	2	1	3	6	6	8	9	7
	Slovenia	16	15	18	18	20	17	10	3	9	19	27	31	37	28
	Spain	11	10	12	15	13	11	6	4	9	13	19	20	22	18
	Sweden	28	23	33	28	29	31	24	16	23	31	36	37	38	35
	Switzerland	19	18	19	21	21	20	14	5	13	c	25	29	42	28
	Türkiye	1	1	1	2	1	1	0	1	1	2	4	4	5	1
	United Kingdom	14	12	15	15	15	14	10	5	11	17	18	22	23	19
	Average	10	9	12	12	12	11	7	4	8	12	15	18	22	16

		Surveys with a reference period of twelve months prior to the interview													
			Gender		Age group						Tertiary				
		Total	Men	Women	25-34 year-olds	35-44 year-olds	45-54 year-olds	55-64 year-olds	Below upper secondary	Upper secondary or post-secondary non-tertiary	Short-cycle tertiary	Bachelor's or equivalent	Master's or equivalent	Doctoral or equivalent	Total
		%	%	%	%	%	%	%	%	%	%	%	%	%	%
		(1)	(3)	(5)	(7)	(9)	(11)	(13)	(15)	(17)	(19)	(21)	(23)	(25)	(27)
OECD	**Countries**														
	Austrialia [1]	39	37	42	47	41	37	30	19	35	44	49	54	51	49
	Canada [2]	54	54	53	59	59	55	41	23	46	m	m	m	m	65
	Chile [2]	44	50	38	57	47	39	29	24	44	m	m	m	m	68
	Israel [2]	45	43	46	47	47	44	39	12	34	m	m	m	m	60
	Japan [2]	41	47	35	48	43	45	30	21	32	m	m	m	m	55
	Korea [2]	49	53	45	60	55	44	32	21	42	m	m	m	m	70
	Mexico [2]	29	32	26	36	29	27	15	17	39	m	m	m	m	59
	New Zealand [2]	63	64	63	65	67	64	57	46	59	m	m	m	m	74

Note: The reference period for the participation in non-formal education and training is the previous 4 weeks for the EU-LFS, Costa Rica, Türkiye and the United Kingdom national surveys, and it is the previous 12 months for the Survey of Adult Skills (PIAAC) and Australia national survey. See *Definitions* and *Methodology* sections for more information. Note that the average differs from the one published by Eurostat as this is an unweighted average and the country coverage is different.
Additional columns showing standard errors (S.E.) are available for consultation on line (see StatLink below).
1. Data for upper secondary or post-secondary non-tertiary education refer to post-secondary non-tertiary education.
2. Year of reference differs from 2021: 2017 for Mexico; 2015 for Chile, Israel and New Zealand; and 2012 for Canada, Japan and Korea.
Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/gkve42

Table A7.3. Enrolment rates in formal education, by level of education and age group (2020)

Percentage of students enrolled over the total population

		Below upper secondary				Upper secondary or post-secondary non-tertiary				Tertiary			
		25-64 year-olds	25-29 year-olds	30-39 year-olds	40-64 year-olds	25-64 year-olds	25-29 year-olds	30-39 year-olds	40-64 year-olds	25-64 year-olds	25-29 year-olds	30-39 year-olds	40-64 year-olds
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
OECD	Countries												
	Australia	1	1	1	1	5	8	6	3	6	17	8	3
	Austria	0	0	0	0	0	1	1	0	4	16	6	1
	Belgium	1	2	2	1	2	3	3	2	2	8	2	0
	Canada	0	0	0	0	m	m	m	m	3	10	3	1
	Chile	0	0	0	0	0	1	1	0	4	12	5	1
	Colombia	0	0	0	0	0	1	0	0	3	10	5	1
	Costa Rica	m	m	m	m	0	3	0	1	0	5	2	0
	Czech Republic	0	0	0	0	0	1	1	0	2	9	2	1
	Denmark	0	0	0	0	2	6	3	1	5	22	6	2
	Estonia	0	0	0	0	1	3	2	1	3	11	5	1
	Finland	0	0	0	0	5	8	7	3	6	21	9	2
	France	0	0	0	0	0	1	0	0	1	7	2	0
	Germany	0	0	0	0	1	3	1	0	3	18	5	0
	Greece	0	0	0	0	1	2	1	0	7	24	10	3
	Hungary	0	0	0	0	1	2	1	1	2	8	2	1
	Iceland	0	0	0	0	2	6	3	1	6	15	7	3
	Ireland	0	0	0	0	2	3	2	1	3	9	4	1
	Israel	0	0	0	0	0	0	0	0	5	18	6	2
	Italy	0	1	1	0	0	0	0	0	2	12	3	1
	Japan	0	0	0	0	m	m	m	m	m	m	m	m
	Korea	0	1	1	0	0	0	0	0	4	8	2	1
	Latvia	0	0	0	0	0	1	1	0	4	14	6	1
	Lithuania	0	0	0	0	1	1	1	0	2	9	3	1
	Luxembourg	0	0	0	0	0	1	1	0	1	4	1	0
	Mexico	2	2	2	1	0	2	0	0	2	5	2	1
	Netherlands	0	0	0	0	1	4	2	1	3	14	4	1
	New Zealand	0	0	0	0	5	8	6	3	4	9	5	2
	Norway	0	0	0	0	1	3	1	0	5	17	7	2
	Poland	0	0	0	0	1	1	1	0	2	9	2	1
	Portugal	0	0	0	0	1	1	1	0	2	8	3	1
	Slovak Republic	0	0	0	0	0	1	1	0	1	6	1	0
	Slovenia	0	0	0	0	0	2	0	0	2	10	2	0
	Spain	0	1	1	0	1	2	1	1	3	13	4	1
	Sweden	3	5	5	2	3	6	4	1	5	16	7	2
	Switzerland	0	0	0	0	0	2	1	0	3	16	4	1
	Türkiye	0	0	1	0	1	3	2	0	10	29	14	3
	United Kingdom	0	0	0	0	1	2	2	1	3	7	4	1
	United States	0	0	0	0	0	1	0	0	4	12	5	2
	OECD average	0	0	0	0	1	3	2	1	3	12	4	1
	EU22 average	0	0	0	0	1	2	1	1	3	12	4	1
Partners	Argentina[1]	m	m	m	m	m	1	0	0	m	19	m	m
	Brazil	1	1	1	0	1	2	1	0	4	10	6	2
	China	m	m	m	m	m	m	m	m	m	1	0	0
	India	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia[1]	m	m	m	m	m	0	0	0	m	5	2	1
	Saudi Arabia	m	m	m	m	m	1	0	0	m	12	1	0
	South Africa[1]	m	m	m	m	m	3	0	0	m	4	2	1
	G20 average	m	m	m	m	m	m	m	m	m	m	m	m

Note: See *Definitions* and *Methodology* sections for more information. Data and more breakdowns are available at http://stats.oecd.org/, *Education at a Glance Database*.
1. Year of reference differs from 2020: 2019 for Argentina, Indonesia and South Africa.
Source: OECD/UIS/Eurostat (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-A.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/z2rwod

Chapter B. Access to education, participation and progress

Indicator B1. Who participates in education?

Highlights

- On average, 63% of tertiary students across the OECD are enrolled in bachelor's programmes. Only in Austria, France and Luxemburg do bachelor's students make up less than half of all tertiary students. Enrolment rates in short-cycle tertiary programmes shows the largest differences across countries: 38% of students in Türkiye and 32% of students in the United States are enrolled in such programmes, while the share is below 5% in 14 other OECD and partner countries.
- Around one-fifth of tertiary students are enrolled on a part-time basis, but large differences exist across OECD countries. Studying part-time is especially common in many Nordic countries, Australia, New Zealand and the United States, where more than 30% of students study part-time. It allows students to obtain a tertiary education while pursuing a career or taking care of a family and is an important instrument for broadening access to tertiary education. However, in some countries like the Czech Republic, and Greece, less than 5% of students study part-time.
- In some countries, such as Chile, Israel, Korea, Latvia and the United Kingdom, 80% or more of tertiary students are enrolled in private institutions, although 71% of tertiary students are enrolled in public institutions on average across the OECD. However, the nature of private institutions varies widely across countries and the share of students enrolled in private institutions needs to be interpreted in the context of a country's organisation and regulation of the private tertiary education system.

Context

Pathways through education can be diverse, both across countries and within the same country. Students' experiences in primary and secondary education are probably the most similar across countries. Compulsory education is usually relatively homogeneous as students progress through primary and lower secondary education. However, recognising that people have different abilities, needs and preferences, most education systems try to offer different types of programmes and modes of participation, especially at the more advanced levels of education, including upper secondary and tertiary education.

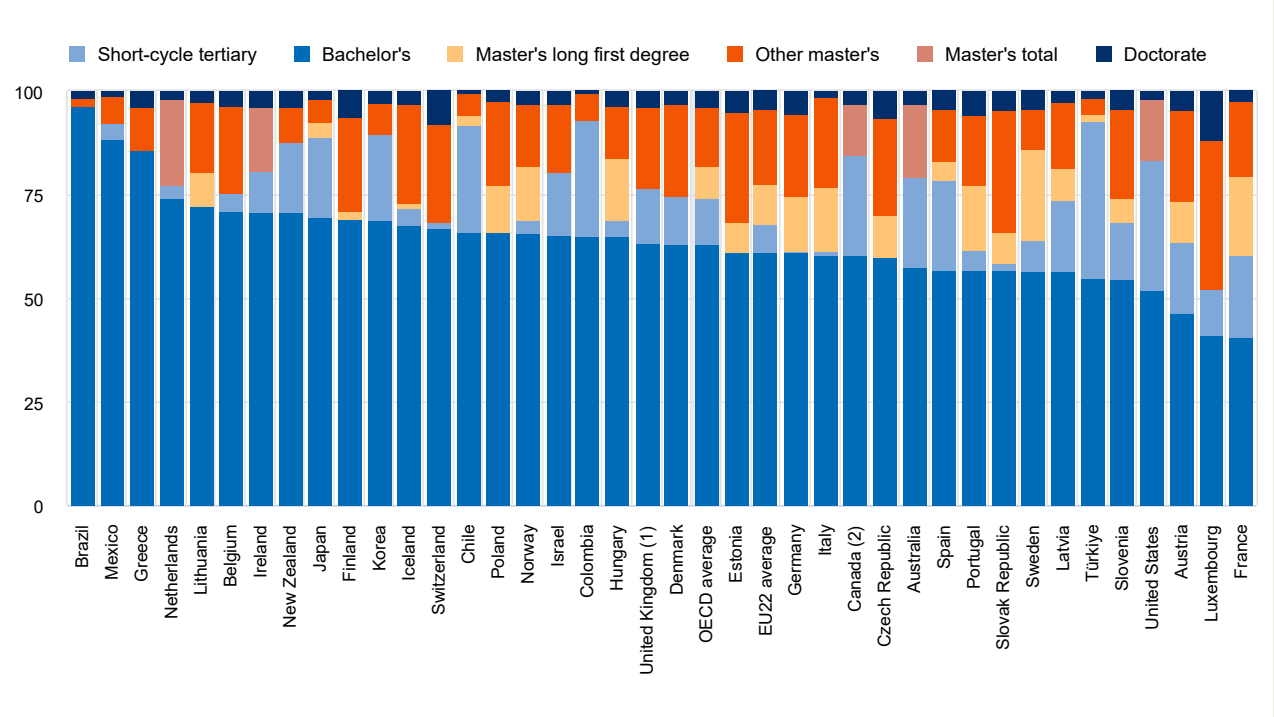
Ensuring that people have suitable opportunities to obtain the skills for successful labour-market participation is a critical challenge. As tertiary attainment rates increase, the profile of tertiary students becomes more diverse and tertiary education has to prepare students for a greater variety of career trajectories. Tertiary education systems have responded to this challenge by offering new programmes (see also Indicator B4), which has led to significant differences across countries. Programme structures and durations differ, as do the shares of young adults enrolled in them. Similarly, the organisation of the tertiary education sector and the role of the state within it varies from country to country.

Despite increasing tertiary attainment, it is important to provide alternative pathways to successful labour-market participation. At upper secondary level, vocational education and training (VET) programmes can be a particularly attractive option for youth who are more interested in practical forms of learning and for those who want to enter the labour market earlier (OECD, 2019[1]). In many education systems, VET may also serve as a route into higher level studies and also enables some adults to reintegrate into a learning environment and develop skills that will increase their employability.

To some extent, the type of upper secondary programme students attend will influence their educational trajectories. Successful completion of upper secondary programmes gives students access to post-secondary non-tertiary education programmes, where available, or to tertiary education. Upper secondary vocational education and post-secondary non-tertiary programmes, which are mostly vocational in nature, can allow students to enter the labour market earlier. At the same time, higher levels of education often lead to higher earnings and better employment opportunities (see Indicators A3 and A4), so it is important to build strong pathways from vocational programmes to higher levels of education

Figure B1.1. Distribution of tertiary students enrolled by education level (2020)

In per cent



1. Short-cycle tertiary level includes a small number of students enrolled in vocational programmes at Bachelor's and Master's level.
2. Excludes private institutions at short-cycle tertiary level.
Countries are ranked in descending order of the share of tertiary students enrolled in bachelor's or equivalent programmes.
Source: OECD/UIS/Eurostat (2022), Table B1.2. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

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Other findings

- The gross enrolment ratio (GER) at tertiary education ranges from 20% in Luxembourg to over 100% in Australia, Greece and Türkiye. In almost all countries with available data, the GER is higher for women than men, except in Japan, Korea and Türkiye (Box B1.1).
- Students in most countries experienced significant disruptions to learning due to the COVID-19 pandemic. In half of the countries with available data for the 2019/20 academic year, schools were fully closed for at least 45 days at the primary and lower secondary levels, and 50 days at the upper secondary level (see chapter on COVID-19).

Analysis

Compulsory education

Periods of compulsory education vary widely across OECD countries. In some countries, early childhood education and care (ECEC) is compulsory, as early as the age of three. In other countries, education becomes compulsory only from primary education onwards, sometimes as late as at the age of seven. Likewise, compulsory education ends as early as age 14 in some OECD countries, while it lasts until 18 in many others (Table X1.5). The age at which compulsory education ends may depend on obtaining a particular qualification. For example, in the Netherlands students can leave education from the age of 16 if they obtain a basic qualification, but otherwise have to continue until they are 18. In countries with dual systems, such as Germany, the final years of compulsory education may be partly spent in workplace-based training (European Commission, 2021[2]).

When compulsory education was first introduced during the late 18th, 19th and 20th centuries, it was often limited to comparatively short periods of primary education (Lee and Lee, 2016[3]). Since then, the duration of compulsory education has increased gradually, a trend that has continued up to today. Austria made pre-primary education mandatory for 5-year-olds in 2010 and France introduced compulsory pre-primary education starting at 3 years old in September 2019. The upper age limit of compulsory education is also increasing. In 2015, the United Kingdom raised its school leaving age to 18, while in 2017 Austria made formal or non-formal education compulsory until the age of 18 unless students obtain an upper secondary qualification earlier.

However, compulsory education ages are at best only a rough indicator of typical enrolment patterns. In many OECD countries, enrolment rates are already high before the start of compulsory education and, in most countries, a large majority of students continue to study after the end of mandatory education (see Indicator B2). As a consequence, in more than half of OECD countries, the age period for which at least 90% of children and young people are enrolled exceeds the duration of compulsory education. For example, Korea and Slovenia have the shortest compulsory schooling period among OECD countries, from 6 to 14 years old (Table X1.5). However, for both these countries, at least 90% of the population are enrolled for an age range spanning 15 years (i.e. from 2 to 16 years old in Korea and from 4 to 18 years old in Slovenia), towards the top end of the range for OECD countries (Table B1.1).

Although most children and adolescents are enrolled beyond the period of compulsory education, there remain some who are not enrolled even when they are of compulsory education age. In more than two-thirds of OECD and partner countries, the enrolment rates of 6-14 year-olds are below 100%. In most cases, the share of children and adolescents who are not enrolled is in the low single digits, but a few countries have larger gaps (Table B1.1). For example, less than 90% of students aged 14 or older are enrolled in Mexico, even though compulsory education lasts until age 17 (see *Education at a Glance Database* and Table X1.5). Similarly, education is compulsory until the age of 17 in Türkiye, but enrolment rates among 16 and 17 year-olds are below 90%.

In some countries, grade repetition can have a significant effect on enrolment duration in primary and secondary programmes. The number of students who have to repeat a grade and therefore spend a year longer in a programme than usual varies widely across countries. While grade repetition is not universally used across the OECD, it is common in some countries, such as Belgium where 15% of upper secondary students are repeating a grade (OECD, 2022[4]). Despite its popularity in some countries, the evidence suggests that the effectiveness of this tool is low (Goos, Pipa and Peixoto, 2021[5]).

From compulsory education to tertiary education

In recent years, countries have adapted their upper secondary offer in response to growing demand for upper secondary education, student aspirations and labour-market needs. Vocational programmes increasingly need to include a strong general component, to equip young people with the skills required to learn and adapt to changing skills needs throughout their careers. Many countries have built flexible pathways from upper secondary programmes, including vocational ones, into higher levels of education and the labour market, as well as options for moving between vocational and general programmes. This growing complexity affects the educational trajectories of adolescents and young adults most strongly between the ages of 17 and 20 and is reflected in diverse enrolment patterns across countries.

Enrolment rates among 17-20 year-olds

On average, more than half of all 17-year-olds in OECD countries are enrolled in general upper secondary programmes, while 31% are enrolled in vocational upper secondary programmes. In a few countries, some students will enrol in tertiary education at that age, but the share is still very low except in Austria and Colombia, where 13% of 17-year-olds are enrolled in tertiary programmes. The age of 18 is when the greatest differences in participation are seen across countries. More than half of all 18-year-olds are enrolled in tertiary education in France, Greece and Korea, while in many other OECD countries tertiary enrolment is still close to zero. This is either due to a longer duration of primary and secondary programmes or a later starting age of primary education. For example, in Switzerland, children start primary education at 7 years old and end upper secondary education at 19. By age 19, tertiary enrolment rates are already peaking in some countries, but are still very low in others; in Denmark, only 6% of 19-year-olds are enrolled in tertiary education. By 20, the transfer out of upper secondary education is nearly complete in most OECD countries and enrolment rates for general upper secondary education and vocational upper secondary education are below 10% (Table B1.3).

As the age of students increases, the share of students enrolled in general upper secondary programmes decreases faster than the share enrolled in vocational programmes. On average, 55% of 17-year-olds are enrolled in general upper secondary education, compared to 8% of 19-year-olds. In contrast, 30% of 17-year-olds are enrolled in vocational programmes, compared with 15% of 19-year-olds. However, the variation across countries is large. In some countries, such as Korea, enrolment in vocational upper secondary education beyond the age of 18 is virtually non-existent even though it is not uncommon at earlier ages. In contrast, enrolment rates in vocational upper secondary education peak at the age of 19 in Australia (Table B1.3).

Different programme structures and possibilities of transferring between programmes explain the differences in enrolment patterns across general and vocational upper secondary education. In Germany, for example, a significant share of young adults with a general upper secondary qualification subsequently pursue a vocational upper secondary programme (Dohmen, 2022[6]). These students tend to enrol at an older age than their peers who began a vocational upper secondary education immediately after completing a lower secondary programme. Thus, enrolment rates at this level remain high among older students, with 18% of 20-year-olds in Germany enrolled in vocational upper secondary education (Table B1.3).

In Norway, access to tertiary education usually depends on a general upper secondary qualification, but there are a variety of alternative routes to accessing tertiary education. For example, students in vocational programmes have the option to switch to a 1-year general programme after the second year, so that they graduate from a general upper secondary programme even though they started a vocational upper secondary one. Such specific programme structures and chances to transfer between programmes are common in many countries, leading to the diversity in enrolment rates. A noticeable outlier is Israel, where enrolment rates across all programmes are very low between the ages of 18 and 20, as most young adults are doing military service during this time.

Tertiary education

Typical enrolment ages

The diversity of programmes offered at tertiary level is even greater than in upper secondary education. This is particularly the case for short-cycle tertiary programmes. Such programmes are common in some countries, but very rare in others (Figure B1.1). Even within the same country, short-cycle tertiary programmes often include a wide range of different professionally oriented programmes that might be provided at different types of institutions, such as universities, community or vocational colleges and vocational schools. These programmes may provide initial preparation for an occupation but potentially also serve as a bridge into a bachelor's programme (e.g. associate degrees in the United States), or offer upskilling opportunities to adults with work experience. Short-cycle tertiary programmes frequently include elements of work-based learning (OECD, 2022[7]). Their diverse nature is reflected in their wide range of typical enrolment ages. Enrolment usually starts in the early twenties, but typical enrolment ages can cover the thirties and even the forties in some countries (Table B1.2).

Bachelor's programmes are longer and are usually more theoretical in nature than short-cycle tertiary programmes. They last three to four years and are usually offered by universities. As they are often the first tertiary programme students enter after completing upper secondary education, the typical enrolment age is in the late teens and early twenties in most countries. However, in some countries, such as the Nordic countries, the typical enrolment age of bachelor's students stretches into the mid-thirties. In these countries, students are more likely to enter tertiary education for the first time after working for several

years (Table B1.2). In addition, some countries have developed bachelor's level programmes with an applied, practical focus. Examples include professional bachelor's programmes in Denmark, France and the Netherlands (OECD, 2022[7]). Depending on whether students enrol in these programmes immediately after graduating from upper secondary education or after gaining work experience, the typical enrolment ages can vary.

Master's programmes tend to be second degrees that follow the completion of a bachelor's programme. Their content tends to be more specialised and academic in nature than the content of bachelor's programmes. Some countries have also developed master's programmes with a professional orientation, such as master professional qualifications in Germany, professional master's degrees in the Netherlands and federal examinations in Switzerland (OECD, 2022[7]). Typical enrolment ages for master's programmes start in the early to mid-twenties. In countries, where students tend to enrol in master's programmes shortly after gaining their bachelor's degree, the typical enrolment age ends in the late twenties (e.g. in many central European countries). In contrast, in countries where master's students return to education after working for some time after earning their first tertiary degree, the typical enrolment age lasts into the thirties and forties (Table B1.2).

Long first degree programmes are often classified as master's programmes, although some lead to qualifications at bachelor's level. As the name suggests, these programmes are designed as a first tertiary programme following the completion of upper secondary education, but with a length of more than four years, comparable to a combined bachelor's and master's programme. Moreover, their content tends to be more complex and specialised than bachelor's programmes, thus justifying their frequent classification as a master's programme (OECD, European Union, UNESCO-UIS, 2015[8]).

Doctoral programmes are the highest level of tertiary study. They require students to contribute original research and are usually only offered by research-oriented universities and other institutions. Usually, a master's degree is required to enter a doctoral programme (OECD, European Union, UNESCO-UIS, 2015[8]). While the theoretical duration of doctoral programmes is usually from three to five years, many students need longer to complete their studies at doctoral level. This results in typical enrolment ages that last from the mid- to late twenties, into the late thirties and late forties (Table B1.2).

Box B1.1. Tertiary education's contribution to meeting the Sustainable Development Goals (SDGs)

Higher education is a core enabler of the progress towards the Sustainable Development Goals (SDGs). By having a significant impact on students' awareness and contribution to a prosperous society, tertiary education is viewed as a change agent and catalyst in the development of sustainability-related issues (Žalėnienė and Pereira, 2021[9]). Having a tertiary education may also have a significant impact on future generations' mindset on environmental and social issues (see Figure A6.6 in Indicator A6).

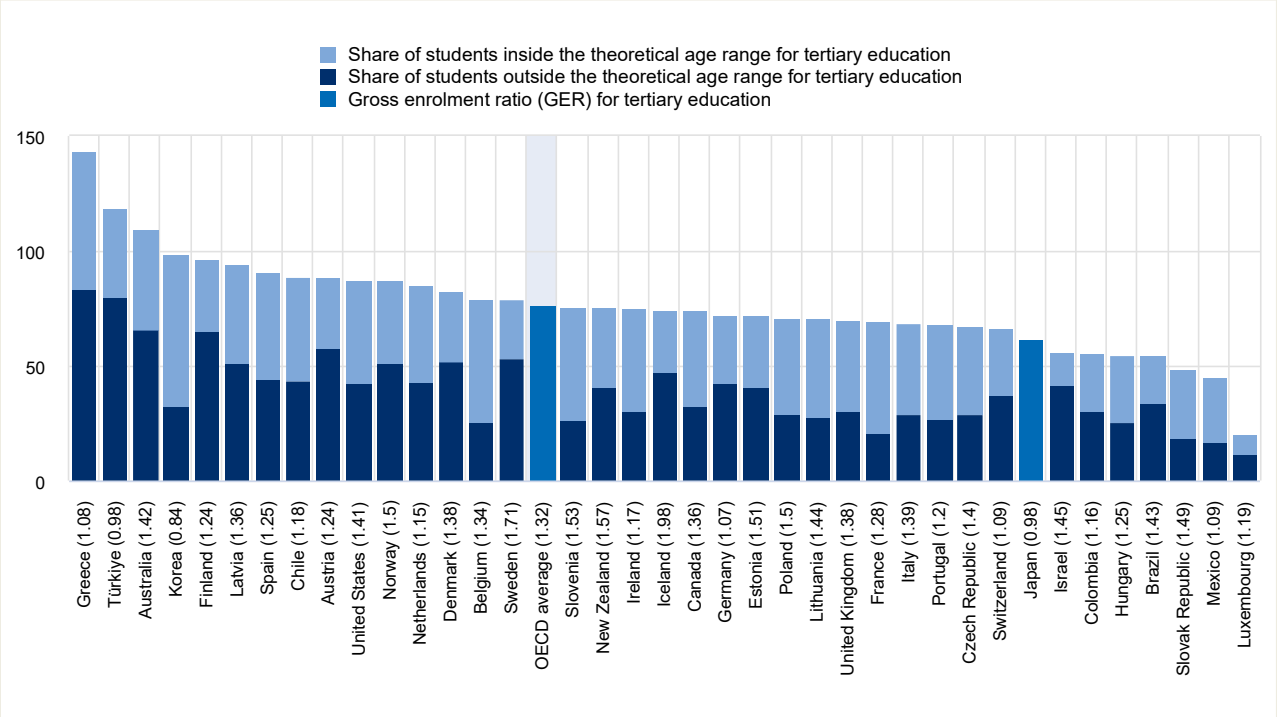
The SDG4 agenda recognises the central role of higher education through Indicator 4.3.2 on participation in tertiary education. This indicator measures the gross enrolment ratio (GER) in tertiary education as the total number of students enrolled in tertiary education – regardless of age – as a percentage of the population in the five-year age range immediately following upper secondary education (typically 18-22 year-olds, but this may differ from country to country). As a broad measure of tertiary participation, the GER may exceed 100% because it does not indicate whether students belong to the theoretical age group for tertiary education or not, but reflects the inclusion of over-aged and under-aged students due to early or late entrance and grade repetition. However, this indicator gives an indication of countries' capacity to accommodate all the students at a particular level of education.

On average across OECD countries, the total number of students enrolled is equivalent to 76% of the relevant population based on the theoretical age for tertiary education, although there are significant disparities between countries. The GER ranges from 20% in Luxembourg to over 100% in Australia, Greece and Türkiye (Figure B1.2). These results should be interpreted with caution, however, as gross enrolment ratios are a broad measure of participation in tertiary education that do not take into account the duration of studies, the existence of gap years, or the pathways through different types of tertiary programmes.

In some cases, the GER is particularly elevated due to the share of students outside the theoretical age group for tertiary education. In about one-quarter of countries with available data, the share of tertiary students who are over-age exceeds 60%. The smallest share of students outside the theoretical age group for tertiary education is found in France (30%), and the largest in Israel (74%) (Figure B1.2).

Figure B1.2. SDG Indicator 4.3.2: Gross enrolment ratio for tertiary education (2020)

In per cent



How to read the chart: in Greece, the gross enrolment ratio, i.e. the total number of tertiary students is 144% of the total population aged 18-22 (the theoretical age range for Greece). The number is greater than 100% because many tertiary students are either younger than 18 or older than 22. The light blue section of the bar indicates the share of the population aged 18-22 enrolled in tertiary education (e.g. 60% in the case of Greece), while the dark blue section shows the number of students outside the theoretical age as percentage of the total population within the theoretical age (e.g. 83% in Greece). Where the share of students inside/outside the theoretical age group for tertiary education is not available, the overall gross enrolment ratio is shown.
Note: The theoretical age range represents the 5-year age group immediately following upper secondary education. If the official entrance age to upper secondary is 15 years and the duration is 3 years, then the age range for tertiary education is 18-22 years. However, this age group does not always capture the reality of the students' age range enrolled in tertiary education (theoretical age for tertiary education). In fact, master's and doctoral students are usually older than the theoretical age group. Furthermore, there are several reasons for a delayed entry to tertiary education (see Box B4.1 in Indicator B4).
The number in parentheses corresponds to the gender parity index, discussed below, where the numerator is the gross enrolment ratio for women and the denominator the ratio for men.
Countries are ranked in descending order of gross enrolment ratio (GER) for tertiary education in 2020.
Source: OECD/UIS/Eurostat (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

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In other instances, the GER is high even with a relatively small share of students outside the theoretical age group, which may be explained by other structural reasons. This is the case of Korea, for instance, which has a relatively small share of students outside the theoretical age group (33%) but a GER of almost 100%. In this case it is because a large majority of people within the theoretical age for tertiary education are enrolled in tertiary programmes. Another explanation for relatively high enrolment rates at tertiary level would be high incidence of international students. In Australia, for example, international students make up 26% of students enrolled at tertiary level (see *Education at a Glance Database*), which may in turn increase the GER.

The gender parity index is defined as the ratio of the female to male values of a given indicator. A ratio of between 0.97 and 1.03 indicates parity between males and females. A value of less than 0.97 indicates a disparity in favour of men, and a value greater than 1.03 indicates a disparity in favour of women (UNESCO-UIS, 2018[10]). Across the OECD, the average gender parity index is 1.3, meaning that there are 1.3 enrolled women for every enrolled man.

In almost all countries with available data, the gross enrolment ratio at tertiary education is higher for women than men. The exceptions are Japan, Korea and Türkiye, where men outnumber women in enrolment at tertiary level. In Korea the

gender parity index is 0.84, meaning gender parity has not yet been achieved, whereas in Japan and Türkiye, the gender parity index of 0.98 indicates parity. Some background information may help contextualise these results. For example, in Korea, mandatory military service for men during college may explain longer enrolment at tertiary level. In contrast, gender disparity in favour of women is particularly significant in Estonia, Iceland, New Zealand, Norway, Poland, Slovenia and Sweden, where women are at least 50% more likely to be enrolled in tertiary education than men (Figure B1.2).

Distribution of tertiary students by education level

More than half of all tertiary students are enrolled at bachelor's level in all OECD and partner countries except for Austria, France and Luxemburg. Master's students are the second largest group of tertiary students, but their share varies considerably across OECD countries. The most noticeable differences across countries concern the share of students in short-cycle tertiary programmes, however. Although more than 30% of all tertiary students are enrolled in such programmes in Türkiye and the United States, the share is in the low single digits in many other OECD and partner countries. In some countries where enrolment in short-cycle tertiary programmes is common, such as Canada or the United States, it can play a similar role to vocational upper secondary education in other countries, by offering initial occupational preparation. In other countries, such as Austria, short-cycle tertiary programmes are part of "higher VET" and are commonly pursued after upper secondary vocational programmes. Overall, countries where enrolment in vocational upper secondary education is common among 18-year-olds also have on average a slightly higher share of tertiary students enrolled in short-cycle tertiary programmes (Figure B1.1).

Enrolment rates are an important metric for describing the student population but it is important to bear in mind that enrolment rates in longer programmes tend to be higher than enrolment rates in shorter ones because students are enrolled for a longer period of time. In the countries with the highest share of tertiary students in bachelor's programmes (Brazil and Mexico), bachelor's programmes last four years, whereas in the countries with the lowest share of bachelor's students (France and Luxemburg), they last only three years. Moreover, enrolment rates in Figure B1.1 are expressed as a percentage of all tertiary students. They do not take into account the substantial differences across countries in the share of young adults enrolling in tertiary education overall. For example, bachelor's students make up a smaller share of tertiary students in Australia than the OECD average, but a significantly larger share of young adults in Australia are enrolled in tertiary education than in most other OECD countries (Table B1.3).

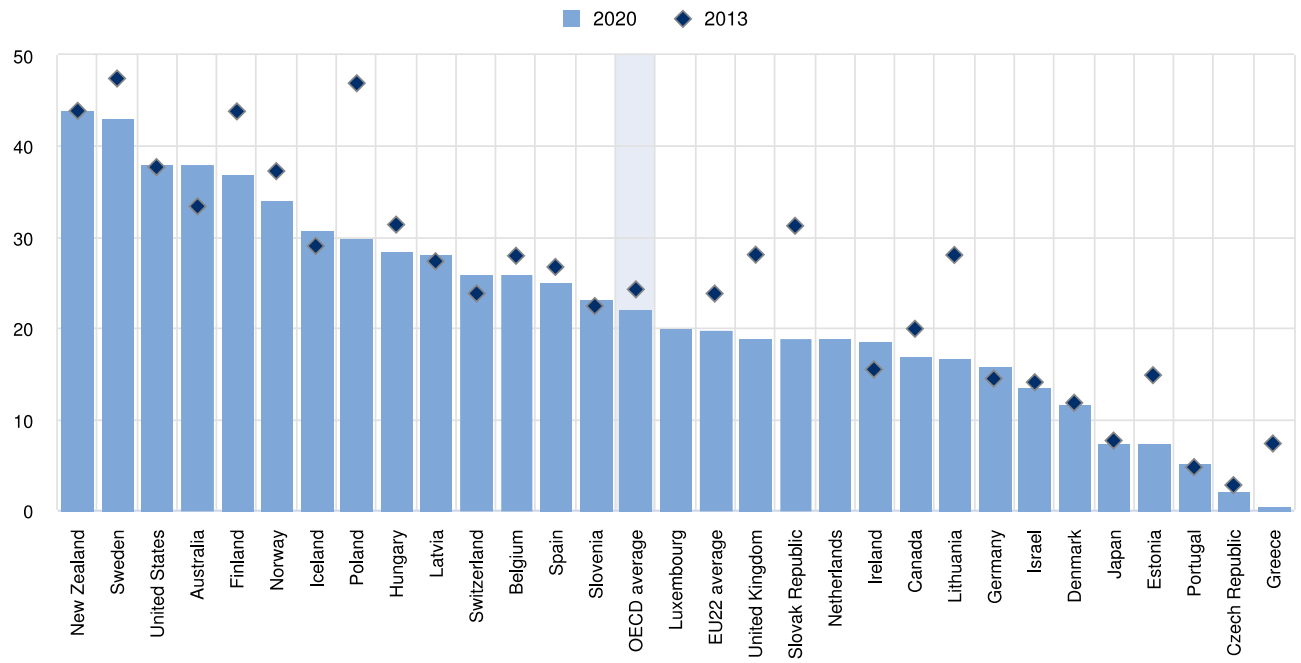
Share of part-time students

Studying part-time is common in tertiary education in most OECD countries: on average, 22% of tertiary students are enrolled on a part-time basis. It is especially widespread in the Nordic countries (except Denmark) and in Australia, New Zealand and the United States, where more than 30% of students study part-time. On average, also the share of part-time students has changed little between 2013 and 2020. However, several countries, such as Estonia, Lithuania, the Slovak Republic, Poland and the United Kingdom, have experienced declines in the share of part-time students of between 7 and 17 percentage points (Figure B1.3). The reasons for these declines are likely to be country specific and may include policy reforms to reduce support for part-time students or for on-the-job training programmes offered by employers. In the United Kingdom, decreases in the number of part-time students have been partially attributed to rising fees for part-time study and the removal of institutional funding for students pursuing second undergraduate qualifications, as well as the decline in employer support for part-time study (Bolton and Hubble, 2022[11]; Tazzyman et al., 2019[12]).

Students may choose to enrol part-time in order to combine their learning with work. Often, these students are from families with lower socio-economic backgrounds (Hayden and Long, 2006[13]). In the United States, for example, 45% of students who were financially dependent on low-income parents were enrolled full time for a full academic year, compared to 57% of students who were dependent on parents whose incomes were above the federal poverty level in the academic year 2015/16 (Chen and Nunnery, 2019[14]). Part-time students may also be older adults who are relying on their own earnings to fund their education (Heagney and Benson, 2017[15]). They may also be parents with dependent children, who then have to manage – often costly – child-care obligations (Noll, Reichlin and Gault, 2017[16]). For these students, it can be a financial impossibility to study full time. Part-time study therefore facilitates access to tertiary education for a broad range of students who may otherwise find it difficult to pursue further studies. Countries that experience large drops in part-time students or have persistently low rates of part-time students may be at risk of disproportionately excluding particular groups from tertiary education.

Figure B1.3. Share of tertiary students studying part-time (2013, 2020)

In per cent



Countries are ranked in descending order of the share of tertiary students studying part-time in 2020.
Source: OECD/UIS/Eurostat (2022), *Education at a Glance Database*. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

StatLink https://stat.link/s5fwrk

Distribution of tertiary students by type of institution

The share of tertiary students enrolled in private institutions varies dramatically across countries. It is 100% in the United Kingdom, but virtually 0% in Canada, Denmark, Greece and Luxembourg. While a few countries have large majorities of tertiary students in private institutions, the share is between 10% and 30% in most OECD and partner countries. Across the OECD, 29% of tertiary students are enrolled in private institutions on average, which is stable compared to 2013 (Figure B1.4).

There are important differences between private tertiary institutions. In some countries with high shares of students in private institutions, most of private institutions are government dependent. Even though they are organised as private entities, they obtain large shares of their funding through regular government contributions and governments retain a considerable influence over them. This is especially the case in Belgium, Finland, Israel, Latvia and the United Kingdom. In other countries, private institutions are financially less dependent on the government (see Indicator C3). They rely on various sources of private funding, such as tuition fees and donations. Many of these private institutions operate on a not-for-profit basis. However, some countries like the United States also have tertiary students enrolled in for-profit institutions (NCES, 2022[17]). Due to this significant variety in the nature of private tertiary institutions across countries, Figure B1.4 should always be interpreted in the context of the private tertiary education system of a country.

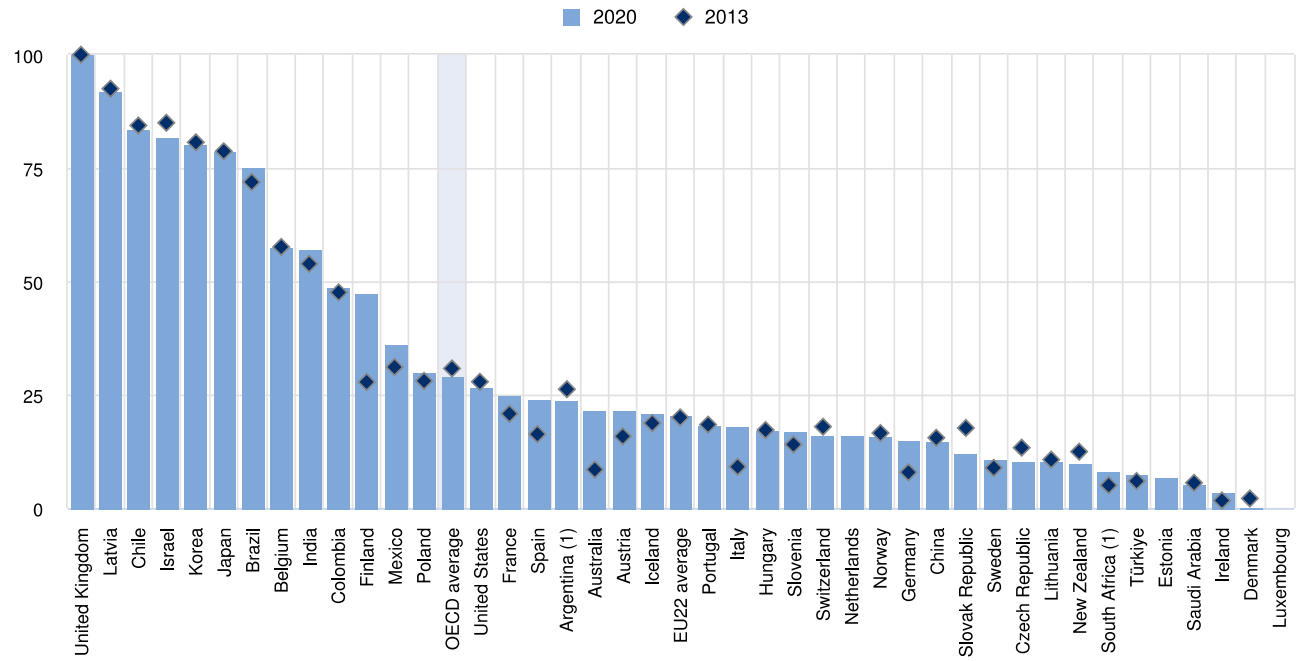
Giving tertiary institutions greater autonomy than they would have under direct government control is a major reason for having government-dependent private tertiary institutions. This was, for example, the motivation of a major reform in Finland in 2010 that transformed universities into independent legal entities (Aarrevaara, Dobson and Elander, 2009[18]). This change in legal status is one reason behind the strong increase of the share of students enrolled in private institutions in Finland.

However, the character of the universities that were affected by the reform remains drastically different from other private institutions, such as for-profit universities.

A high prevalence of private tertiary institutions can have negative consequences for equity. In all countries with available data, typical tuition fees are higher for students in private tertiary institutions than in public tertiary institutions (OECD, 2021[19]). The difference in tuition fees is especially important because public support, such as public grants and tuition fee waivers, might not always be available for students in private institutions. Moreover, public and private institutions may use different admission criteria, which can make it harder for marginalised students to access the private institutions even if they can afford it (Hossler et al., 2019[20]).

Figure B1.4. Share of tertiary students in private institutions (2013, 2020)

In per cent



1. Year of reference 2019.
Countries are ranked in descending order of the share of tertiary students enrolled in private institutions in 2020.
Source: OECD/UIS/Eurostat (2022), Table B1.2. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

StatLink https://stat.link/d4bxi1

Subnational variations in enrolment

Subnational variation in enrolment patterns are an important indicator of the equity of participation in education and can reflect equality of access to education and labour-market opportunities across a country. In most countries, subnational differences in enrolment are low among 6-14 year-olds (the age range which covers almost all compulsory education in most countries) and among 15-19 year-olds (when students start transition to the labour market or to tertiary education). Subnational differences increase among older age groups, however. Regional differences in 20-29 year-olds are relatively low in some countries like Denmark and the United Kingdom, where the difference between the highest and lowest enrolment rates across subnational regions are less than 10 percentage points. However, this difference in regional enrolment rates of 20-29 year-olds is over 60 percentage points in the Czech Republic, Poland, and Spain, while it is 94 percentage points in Türkiye. The highest enrolment rates for 20-29 year-olds are found in capital cities and regions in over 40% of the countries with data

available. This may be due to the fact that capital cities and regions are the largest urban area in their home country and thus attract a greater share of people pursuing tertiary education. Urban areas tend to offer better salaries and employment opportunities once students graduate, and to have more tertiary education institutions than more rural regions (see Indicator A1). There are also subnational disparities in enrolment among 30-39 year-olds. The variation is especially high in Türkiye, where the difference between the regions with the highest and lowest enrolment rates is 99 percentage points (OECD, 2022[21]).

Definitions

The data in this indicator cover formal education programmes that represent at least the equivalent of one semester (or half of a school/academic year) of full-time study and take place entirely in educational institutions or are delivered as combined school- and work-based programmes.

Full enrolment, for the purposes of this indicator, is defined as enrolment rates exceeding 90%.

General education programmes are designed to develop learners' general knowledge, skills and competencies, often to prepare them for other general or vocational education programmes at the same or a higher education level. General education does not prepare people for employment in a particular occupation, trade, or class of occupations or trades.

Vocational education and training (VET) programmes prepare participants for direct entry into specific occupations without further training. Successful completion of such programmes leads to a vocational or technical qualification that is relevant to the labour market.

A **full-time student** is someone who is enrolled in an education programme whose intended study load amounts to at least 75% of the normal full-time annual study load. A **part-time student** is someone who is enrolled in an education programme whose intended study load is less than 75% of the normal full-time annual study load.

Methodology

Except where otherwise noted, figures are based on head counts, because it is difficult for some countries to quantify part-time study. Net enrolment rates are calculated by dividing the number of students of a particular age group enrolled in all levels of education by the size of the population of that age group. While enrolment and population figures refer to the same period in most cases, mismatches may occur due to data availability in some countries, resulting in enrolment rates exceeding 100%.

For more information, please see the OECD *Handbook for Internationally Comparative Education Statistics 2018* (OECD, 2018[22]) and Annex 3 for country-specific notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

Source

Data refer to the 2019/20 academic year and are based on the UNESCO-UIS/OECD/Eurostat data collection on education statistics administered by the OECD in 2021 (for details, see Annex 3 at https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

Data on subnational regions for selected indicators are available in the OECD *Regional Statistics (database)* (OECD, 2022[21]).

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Indicator B1 tables

Tables Indicator B1. Who participates in education?

Table B1.1	Enrolment rates by age group (2005, 2013 and 2020)
Table B1.2	Profile of students enrolled in tertiary education (2020)
Table B1.3	Enrolment rates from the ages of 17 to 20, by level of education (2020)

StatLink https://stat.link/0g3wcu

Cut-off date for the data: 17 June 2022. Any updates on data can be found on line at: http://dx.doi.org/10.1787/eag-data-en. More breakdowns can also be found at http://stats.oecd.org, *Education at a Glance Database*.

Table B1.1. Enrolment rates by age group (2005, 2013 and 2020)

Students in full-time and part-time programmes in both public and private institutions

		2020										2013			2005		
		Number of years for which at least 90% of the population of school age are enrolled	Age range at which at least 90% of the population of school age are enrolled	Students as a percentage of the population of a specific age group													
				6 to 14	15 to 19	20 to 24	25 to 29	30 to 39	40 to 64	15 to 19	20 to 24	25 to 29	15 to 19	20 to 24	25 to 29
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
OECD	Countries														
	Australia	13	5-17	100	86	53	26	15	6	86	48	21	82	44	21
	Austria	13	4-16	99	80	36	18	6	1	79	35	18	m	m	m
	Belgium	15	3-17	99	93	48	13	6	3	92	51	18	94	42	15
	Canada [1]	12	5-16	100	73	36	11	5	1	73	33	11	m	m	m
	Chile	13	5-17	98	82	42	13	6	1	78	41	16	m	m	m
	Colombia	10	5-14	95	61	24	11	5	1	m	m	m	m	m	m
	Costa Rica	10	4-13	95	63	24	9	2	0	m	m	m	m	m	m
	Czech Republic	13	5-17	98	90	43	10	3	1	90	43	11	91	34	10
	Denmark	15	3-17	100	87	53	28	9	2	88	57	32	84	48	27
	Estonia	14	4-17	97	87	38	14	7	2	89	44	17	91	40	12
	Finland	14	5-18	98	87	48	29	16	6	86	51	31	87	55	30
	France	15	3-17	100	88	38	8	2	0	85	35	7	84	32	7
	Germany	15	3-17	99	87	51	21	5	1	90	48	21	88	41	18
	Greece	13	5-17	96	83	55	26	11	3	86	41	34	m	m	m
	Hungary	13	4-16	95	83	35	10	4	1	87	42	12	87	38	13
	Iceland	16	2-17	99	85	42	21	10	4	88	52	28	85	49	25
	Ireland	15	3-17	100	90	43	12	6	3	94	37	9	89	32	10
	Israel	15	3-17	96	67	21	19	6	2	65	22	22	m	m	m
	Italy	15	3-17	99	86	37	13	4	1	78	37	14	82	33	10
	Japan [2]	14	4-17	100	m	m	m	m	m	m	m	m	m	m	m
	Korea	15	2-16	99	86	50	8	2	1	87	53	10	87	46	9
	Latvia	15	4-18	99	92	47	15	6	1	94	46	12	m	m	m
	Lithuania	15	4-18	100	94	43	10	4	1	94	52	15	98	49	15
	Luxembourg	13	4-16	99	78	20	6	2	0	78	20	6	m	m	m
	Mexico	9	5-13	99	61	26	9	4	2	54	21	6	48	17	5
	Netherlands	14	4-17	100	92	54	18	6	2	91	49	13	m	m	m
	New Zealand	12	5-16	99	81	41	18	12	5	82	40	18	74	41	21
	Norway	17	2-18	99	88	48	20	8	3	87	43	18	89	46	20
	Poland	15	4-18	97	92	47	11	3	1	90	56	13	92	50	10
	Portugal	14	4-17	100	90	38	10	4	1	88	37	10	74	35	12
	Slovak Republic	11	6-16	95	84	32	6	2	1	85	35	8	m	m	m
	Slovenia	15	4-18	99	94	55	12	2	1	93	57	15	93	50	17
	Spain	15	3-17	98	87	46	16	6	2	87	46	15	78	34	11
	Sweden	17	2-18	99	87	45	26	16	5	86	42	28	m	m	m
	Switzerland	13	5-17	100	85	42	18	5	1	86	38	16	83	31	13
	Türkiye [3]	10	6-15	100	69	50	32	17	4	69	42	20	m	m	m
	United Kingdom	15	3-17	97	83	33	10	6	2	81	31	11	m	m	m
	United States	13	5-17	100	84	38	13	6	2	81	36	16	77	32	13
	OECD average	14	4-17	98	83	41	15	6	2	84	42	16	84	40	15
	Average for countries with available data for all reference years				87	44	15			86	45	16	84	40	15
	EU22 average	13	4-16	98	88	43	15	6	2	88	44	16	88	41	15
Partners	Argentina [4]	13	4-16	100	76	42	22	m	m	72	37	20	65	30	16
	Brazil	11	5-15	96	70	26	13	8	3	69	24	12	m	m	m
	China	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	m	90	m	m	m	m	m	m	m	m	m	m	m
	Indonesia [4]	m	m	m	m	m	a	m	m	70	24	2	m	m	m
	Saudi Arabia	11	7-17	96	91	40	8	2	1	93	37	8	m	m	m
	South Africa [4]	4	11-14	87	77	30	7	2	2	m	m	4	m	m	m
	G20 average	m	m	98	m	m	m	m	m	m	m	m	m	m	m

Note: See *Definitions* and *Methodology* sections for more information.
1. Excludes post-secondary non-tertiary education.
2. Breakdown by age not available after 15 years old.
3. The 6 to 14 age group includes a number of students aged over 14 who are enrolled in primary education.
4. Year of reference 2019.

Source: OECD/Eurostat/UIS (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

StatLink https://stat.link/hj8x2n

Table B1.2. Profile of students enrolled in tertiary education (2020)

		Typical enrolment ages[1]				Distribution of tertiary students by education level					Share of students enrolled by type of institution			Share of part-time students		
								Master's				Private				
		Short-cycle tertiary	Bachelor's	Master's	Doctorate	Short-cycle tertiary	Bachelor's	Total	Of which long first degree	Doctorate	Public	Government-dependent private	Independent private	Men	Women	Total
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
OECD	Countries															
	Australia	21 - 39	19 - 29	23 - 35	27 - 43	21	58	18	a	3	78	m	m	36	39	38
	Austria	18 - 26	20 - 28	24 - 34	28 - 39	17	47	32	10	5	78	m	m	a	a	a
	Belgium	20 - 32	19 - 22	22 - 27	26 - 35	4	71	21	a	3	42	57	0	28	25	26
	Canada[2]	19 - 27	19 - 24	23 - 35	27 - 38	24	60	12	m	3	100	a	a	16	18	17
	Chile	20 - 31	20 - 26	23 - 37	28 - 38	26	66	8	3	0	16	14	70	a	a	a
	Colombia	19 - 30	19 - 27	27 - 40	31 - 46	28	65	7	a	0	51	a	49	a	a	a
	Costa Rica	m	m	m	m	m	m	m	m	m	m	a	m	m	m	m
	Czech Republic	20 - 25	20 - 25	22 - 28	27 - 36	0	60	33	10	7	89	2	9	1	3	2
	Denmark	22 - 36	22 - 30	24 - 30	27 - 36	11	63	22	a	3	100	0	0	11	13	12
	Estonia	a	20 - 31	23 - 36	28 - 38	a	61	34	7	5	93	0	7	8	7	7
	Finland	a	21 - 32	25 - 39	30 - 48	a	69	25	2	6	53	47	a	41	33	37
	France	18 - 21	18 - 22	20 - 26	25 - 34	20	41	37	19	2	75	3	22	a	a	a
	Germany	22 - 34	20 - 28	22 - 29	27 - 36	0	61	33	13	6	85	m	m	17	15	16
	Greece	a	20 - 34	26 - 42	29 - 45	a	86	10	a	4	100	a	a	1	1	1
	Hungary	20 - 25	20 - 29	21 - 29	26 - 37	4	65	28	15	3	82	8	9	25	32	29
	Iceland	24 - 43	21 - 32	26 - 43	29 - 48	4	68	25	1	3	79	21	0	28	33	31
	Ireland	22 - 44	19 - 23	23 - 41	26 - 41	10	71	16	m	4	96	0	4	18	19	19
	Israel	19 - 28	22 - 29	27 - 41	29 - 43	15	66	16	a	3	18	70	12	14	13	13
	Italy	20 - 25	20 - 27	22 - 29	26 - 32	1	60	37	15	2	82	0	18	a	a	a
	Japan	m	m	m	m	19	70	9	4	2	21	a	79	6	8	7
	Korea	19 - 22	19 - 23	25 - 42	27 - 45	21	69	8	a	3	20	a	80	m	m	m
	Latvia	21 - 37	20 - 29	23 - 33	28 - 43	17	56	23	8	3	8	69	23	25	30	28
	Lithuania	a	20 - 25	22 - 30	27 - 37	a	72	25	8	3	89	a	11	17	16	17
	Luxembourg	20 - 23	20 - 24	24 - 35	26 - 33	11	41	36	a	12	100	a	0	20	20	20
	Mexico	18 - 21	19 - 24	25 - 38	29 - 44	4	89	7	a	1	64	a	36	a	a	a
	Netherlands	20 - 29	19 - 25	23 - 34	26 - 32	3	74	21	m	2	84	a	16	17	20	19
	New Zealand	20 - 42	19 - 30	24 - 41	27 - 43	17	71	9	a	4	90	10	0	43	45	44
	Norway	22 - 34	21 - 35	22 - 33	29 - 42	3	66	28	13	3	84	6	10	31	36	34
	Poland	25 - 47	20 - 27	22 - 27	26 - 34	0	66	32	11	2	70	a	30	31	29	30
	Portugal	19 - 23	19 - 24	20 - 29	28 - 45	5	57	33	16	6	81	0	19	6	4	5
	Slovak Republic	20 - 29	20 - 24	22 - 27	26 - 39	2	57	37	8	5	88	1	12	17	20	19
	Slovenia	20 - 29	19 - 23	23 - 26	27 - 40	14	55	27	6	4	83	6	11	24	23	23
	Spain	19 - 31	19 - 27	22 - 32	27 - 44	22	57	17	5	4	76	2	22	25	25	25
	Sweden	23 - 36	22 - 36	22 - 33	28 - 41	8	57	32	22	4	89	10	0	40	46	43
	Switzerland	24 - 44	21 - 28	24 - 32	27 - 35	1	67	24	0	8	84	8	8	31	21	26
	Türkiye	21 - 34	21 - 33	22 - 30	28 - 38	38	55	6	2	2	92	a	8	a	a	a
	United Kingdom[3]	21 - 41	19 - 23	22 - 37	24 - 38	13	63	19	a	4	a	100	a	18	20	19
	United States	19 - 31	19 - 26	24 - 39	26 - 42	32	52	15	a	2	73	a	27	36	40	38
	OECD average					11	63	22	8	4	71	12	17	22	22	22
	EU22 average					7	61	28	10	4	79	10	11	20	20	20
Partners	Argentina[4]	m	m	m	m	m	m	m	m	m	76	m	m	m	m	m
	Brazil	18 - 31	20 - 35	25 - 39	28 - 41	0	97	2	a	1	25	a	75	a	a	a
	China	m	m	m	m	m	m	m	m	m	85	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	43	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	95	m	m	m	m	m
	South Africa[4]	m	m	m	m	m	m	m	m	m	92	m	m	m	m	m
	G20 average					m	m	m	m	m	67	6	21	m	m	m

Note: See *Definitions* and *Methodology* sections for more information.
1. Typical enrolment ages correspond to the age interval which covers at least 60% of students at that level, from the 20th to the 80th percentile of the enrolled population whose age is known.
2. Excludes private institutions at short-cycle tertiary level.
3. Short-cycle tertiary level includes a small number of students enrolled in vocational programmes at bachelor's and master's level.
4. Year of reference 2019.
Source: OECD/Eurostat/UIS (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/duyoeq

Table B1.3. Enrolment rates from the ages of 17 to 20, by level of education (2020)

Students enrolled in full-time and part-time programmes in both public and private institutions

		Age 17				Age 18				Age 19				Age 20			
		Upper secondary		Post-secondary non-tertiary	Tertiary	Upper secondary		Post-secondary non-tertiary	Tertiary	Upper secondary		Post-secondary non-tertiary	Tertiary	Upper secondary		Post-secondary non-tertiary	Tertiary
		General	Vocational			General	Vocational			General	Vocational			General	Vocational		
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
OECD	Countries																
	Australia	82	6	1	2	21	11	2	34	3	13	3	48	2	12	3	50
	Austria	24	50	0	13	12	33	1	29	3	19	1	32	1	10	1	32
	Belgium	42	m	0	1	11	m	2	40	3	m	3	53	2	m	4	56
	Canada	72	m	m	3	18	m	m	38	6	m	m	45	3	m	m	46
	Chile	64	28	a	0	21	12	a	31	6	4	a	51	3	1	a	52
	Colombia	22	8	0	13	12	3	0	23	6	1	0	27	3	0	0	28
	Costa Rica	m	m	a	1	m	m	a	9	m	m	a	13	m	m	a	14
	Czech Republic	m	66	m	0	m	59	m	1	m	33	m	26	m	11	m	44
	Denmark	67	14	a	0	72	15	a	1	40	14	a	6	12	13	a	17
	Estonia	65	24	0	0	63	22	0	1	17	13	1	25	3	8	2	35
	Finland	53	43	0	0	52	43	0	1	9	20	0	14	3	14	0	25
	France	59	32	0	6	11	18	0	51	2	8	0	57	0	5	0	52
	Germany	51	19	4	1	33	24	8	9	12	23	11	22	3	18	13	30
	Greece	69	m	0	2	3	m	1	52	1	m	12	54	0	m	14	52
	Hungary	42	44	0	0	37	28	5	6	13	8	15	25	4	3	10	34
	Iceland	78	13	0	0	71	11	0	1	34	10	0	14	15	8	1	24
	Ireland	86	4	0	3	44	10	2	25	2	9	4	53	0	4	5	55
	Israel	54	37	0	1	10	7	1	9	1	0	1	14	1	0	1	16
	Italy	45	47	0	0	38	41	0	5	5	14	0	37	1	5	0	41
	Japan	76	21	0	0	2	0	1	m	1	0	0	m	m	m	m	m
	Korea	65	14	a	1	11	2	a	64	0	0	a	78	0	0	a	70
	Latvia	58	33	0	1	56	29	0	5	10	25	2	39	4	6	3	48
	Lithuania	78	15	0	1	72	16	1	6	4	14	7	46	2	3	6	50
	Luxembourg	34	43	0	0	24	45	0	2	6	33	0	6	2	20	0	9
	Mexico	35	21	a	5	10	7	a	25	3	2	a	32	1	1	a	32
	Netherlands	33	43	a	8	13	44	a	27	3	34	a	40	1	23	a	46
	New Zealand	74	8	4	2	18	8	10	29	3	6	11	39	1	4	11	41
	Norway	54	41	0	0	62	29	0	0	7	32	0	18	5	16	0	34
	Poland	43	50	0	1	44	46	0	3	8	35	2	34	6	3	5	47
	Portugal	57	35	0	0	20	27	0	34	7	14	0	44	3	7	0	47
	Slovak Republic	27	55	0	1	26	51	2	2	11	23	4	21	1	5	3	34
	Slovenia	33	63	a	0	32	59	a	1	4	26	a	56	1	13	a	58
	Spain	65	22	0	0	15	19	0	41	6	13	0	51	3	8	0	51
	Sweden	65	32	0	0	62	32	0	1	16	12	1	15	12	8	1	22
	Switzerland	35	54	0	0	26	51	1	5	14	33	1	13	7	17	1	23
	Türkiye	46	36	a	0	13	12	a	13	6	4	a	34	4	2	a	48
	United Kingdom	40	39	a	3	4	21	a	38	0	13	a	48	0	8	a	49
	United States	89	a	0	2	29	a	2	40	5	a	3	53	0	a	3	50
	OECD average	55	31	0	2	30	25	1	19	8	15	2	35	3	8	2	39
	EU22 average	52	37	0	2	35	33	1	16	9	20	3	34	3	9	3	40
Partners	Argentina[1]	72	a	a	1	29	a	a	19	11	a	a	36	3	a	a	39
	Brazil	57	6	1	0	26	3	2	14	13	1	2	20	7	1	2	21
	China	m	m	m	5	m	m	m	30	m	m	m	45	m	m	m	41
	India	36	0	0	m	15	1	1	m	5	1	1	m	2	2	2	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	99	1	m	2	26	0	m	40	9	0	m	52	4	0	m	47
	South Africa[1]	58	0	0	2	57	1	1	8	38	4	3	12	24	5	5	12
	G20 average	60	16	0	4	20	10	1	32	7	6	2	43	3	4	2	43

Note: See *Definitions* and *Methodology* sections for more information.
1. Year of reference 2019.
Source: OECD/Eurostat/UIS (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

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Indicator B2. How do early childhood education systems differ around the world?

Highlights

- On average, the vast majority (83%) of children between the age of 3 and 5 are enrolled in early childhood education (ECE) across the OECD. In a few countries, it is also common for younger children between the age of 0 and 2 to participate in ECE and over 50% of children in this age group are enrolled. However, only 27% of under-threes are enrolled in ECE on average across the OECD.
- In 14 out of 32 countries with available data, the share of older teachers (50 years and over) is more than double that of the share of the youngest teachers (below the age of 30). In 5 countries, older teachers outnumber younger teachers by more than 4 to 1, which may have significant implications for their capacity to replace retiring teachers in the near future.
- Compared to other levels of education, public funding for ECE is more reliant on regional and local sources than central government, although there are great differences between countries. In 2019, central government sources accounted for 48% of initial public funds for pre-primary expenditure on average across OECD countries.

Context

Policy makers are increasingly aware of the key role that early childhood education and care (ECEC) plays in children's cognitive and emotional development, learning and well-being. Children who participate in high-quality organised learning at an early age are more likely to have better education outcomes when they grow older. This is particularly true for children from disadvantaged socio-economic backgrounds, because they often have fewer opportunities to develop these abilities in their home learning environments (OECD, 2017[1]).

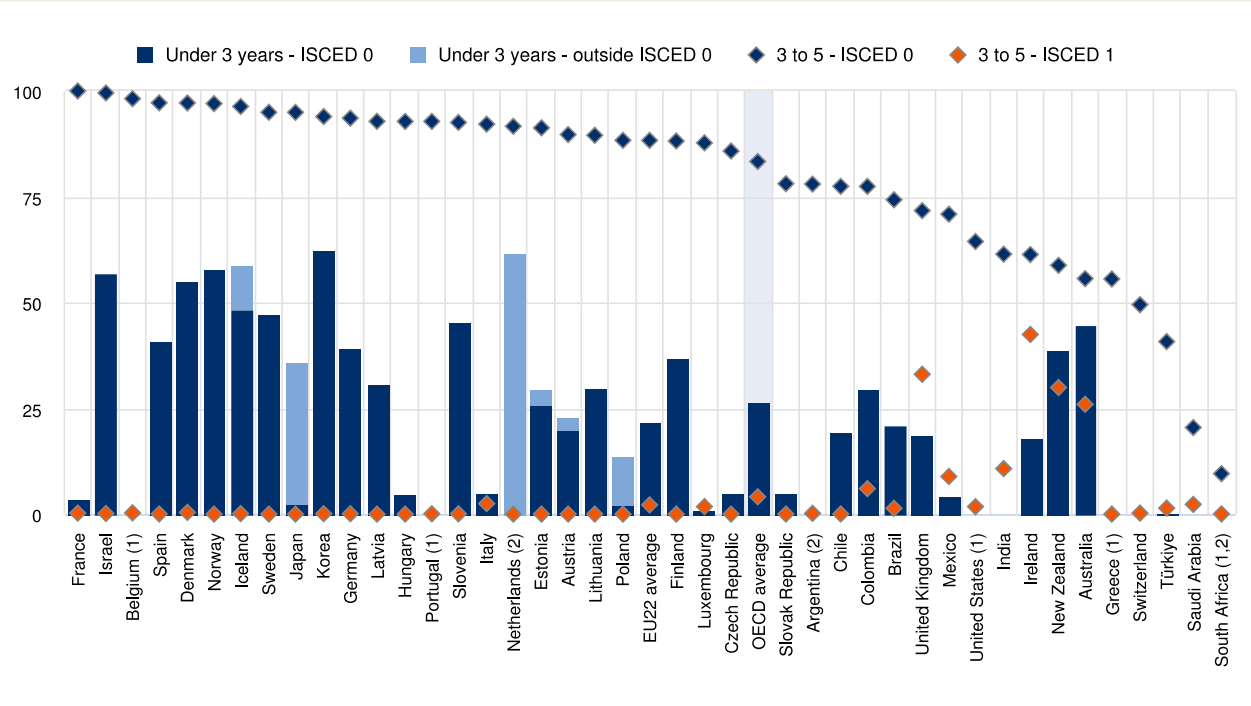
Affordable and accessible ECEC makes it easier for parents to take on employment and contribute to economic prosperity and growth. The increasing number of women entering the labour market has heightened governments' interest in expanding ECEC services. High-quality ECEC services and other provisions to improve parents' work-life balance provide greater opportunities to enter employment and combine work and family responsibilities (OECD, 2018[2]; 2011[3]; 2016[4]).

Such evidence has prompted policy makers to design early interventions, to take initiatives that aim to enhance the quality of ECEC services and improve the equity of access to ECEC settings, lower the starting age of compulsory education, and rethink education spending patterns to gain "value for money" (Duncan and Magnuson, 2013[5]). Despite these general trends, there are substantial differences across OECD countries in the quality of ECEC services provided to young children, the types of ECEC services available and the number of hours per week children usually attend.

The global COVID-19 pandemic has severely affected the delivery of ECEC services as settings around the world closed down to contain the spread of the virus. However, full school closures due to COVID-19 were often shorter at pre-primary than at other levels of education (see chapter on COVID-19). Because ECEC settings in some countries rely heavily on private funding, enrolment disruptions due to health and safety concerns and declining household budgets following job losses and insecurity, have jeopardised the future of a number of them, and hence the participation rates of young children (OECD, 2021[6]).

Figure B2.1. Enrolment rates of young children by type of programme and by age group (2020)

Education programmes meeting ISCED criteria and other registered ECEC services outside the scope of ISCED, in per cent



Note: Countries may have ECEC programmes on which enrolment statistics are not collected. For more information on which ECEC programmes are available in countries, see Annex 3 and the *Education GPS* (OECD, 2022[7]).
1. Excludes ISCED 01 programmes.
2. Year of reference 2019; for the Netherlands, 2019 is the reference year for other registered ECEC services only.
Countries are ranked in descending order of the enrolment rates in ISCED 0 of children of 3 to 5 years in 2020.
Source: OECD/UIS/Eurostat (2022), Table B2.1. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

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Other findings

- The SDG 4 agenda reaffirms the importance of children's participation in ECEC, aiming to "ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education" (SDG 4.2). In 33 out of 38 OECD countries, there is full enrolment (over 90%) of children in organised learning in the year before primary education starts (Box B2.1).
- Higher levels of participation in ECE among 3-5 year-olds at the national level tend to be associated with smaller disparities among regions. There were low levels of regional variation in enrolment rates in almost two thirds of countries where the national enrolment rate of 3-5 year-olds in ECEC was 90% or above, with a standard deviation less than 7% (OECD, 2022[8]).

Note

This indicator only covers formal education and care. Informal care services (generally unregulated care arranged by the child's parents either in the child's home or elsewhere, provided by relatives, friends, neighbours, babysitters or nannies) are not covered (see the *Definitions* section for more details). In addition, this indicator focuses mostly on teachers, as they are the staff members with the most responsibility for the learning of children on a day-to-day basis. The analysis also concentrates on the pre-primary level where data are more available and comparable.

Analysis

There is a growing consensus among OECD countries of the importance of high-quality early childhood education and care (ECEC). Research from a variety of contexts suggests that participation in high-quality ECEC is associated with positive outcomes in both the short and long term (OECD, 2021[9]). Certain ECEC programmes have been shown to help children develop their cognitive, social, and emotional skills. The progress that children make at a young age can have a lasting impact on their academic performance, well-being, and earnings in later life (García et al., 2020[10]; Heckman and Karapakula, 2021[11]). Identifying which aspects of ECEC services constitute high-quality provision is therefore of great policy interest. The quality of ECEC provision has often been considered in terms of the structure of services and of the processes at work within settings (Slot, 2018[12]). Structural characteristics cover the infrastructure and organisation of ECEC services, such as group sizes, funding arrangements, types of staff and workforce training. Meanwhile, process quality concerns the daily interactions that occur between children and their environment as part of their ECEC programme, including their relationships with their peers, staff, families, communities, and physical surroundings (Cadima et al., 2020[13]).

Multiple studies have stressed the importance of process quality in driving children's development in ECEC in particular (OECD, 2018[14]; Melhuish et al., 2015[15]). Process quality is influenced by a multitude of factors such as the characteristics of the children enrolled or the organisation and the competencies of staff, which indicates the need for comprehensive strategies to improve the quality of ECEC (OECD, 2021[9]). There is also evidence to suggest that process quality can be affected by the structural conditions of ECEC provision, which can be more easily regulated (OECD, 2018[14]). At the same time, policies governing ECEC programmes also have to take into account other priorities, such as access, demand and funding.

The types of ECEC services available to children and parents in OECD countries differ greatly. There are variations in the targeted age groups, the governance of centres, the funding of services, the type of delivery (full-day versus part-day attendance) and the location of provision, whether in centres or schools, or in homes (OECD, 2017[1]). The programmes offered by ECEC services can also vary significantly in terms of their content. In order to distinguish between ECEC services that are primarily focused on early childhood education and those that aim to offer childcare, ECEC provision can be classified into two main categories:

Early childhood education (ECE) services that comply with the ISCED 2011 classification, which must: 1) have adequate intentional educational properties; 2) be institutionalised; 3) have an intensity of at least 2 hours per day of educational activities and a duration of at least 100 days per year; 4) have a regulatory framework recognised by the relevant national authorities; and 5) have trained and accredited staff (OECD/Eurostat/UNESCO Institute for Statistics, 2015[16]).

Other registered ECEC services that are an integral part of countries' ECEC provision but that do not comply with one or more of the criteria to be considered an educational programme under the ISCED 2011 classification, e.g. *crèches* in France (OECD/Eurostat/UNESCO Institute for Statistics, 2015[16]; OECD, 2006[17]). While such programmes exist in many countries, particularly for children under 3, not all countries are able to report the number of children enrolled in them (Table B2.1). For this reason, the focus of this indicator is mainly on ECE programmes. It should be further noted that some services may not currently be recognised as meeting ISCED criteria but do meet the requirements for classification as an educational programme in practice. Thus, the educational status of programmes may be under review, as is the case with *amas* in Portugal.

Countries organise their national ECEC systems in a variety of ways, primarily regarding the highest administrative authorities in charge and whether the system is split or integrated at the national level. About half of the OECD countries with available data have integrated ECEC services, where one authority is responsible for administering the whole ECEC system and setting adequate intentional education for children from the ages of 0 or 1 until they start primary education (see Box B2.1 in *Education at a Glance 2019* (OECD, 2019[18])). In such cases, it is usually the education ministry that is in charge of regulating ECEC programmes. In half of the remaining countries with available data, different authorities are responsible for ECEC provision for different age groups. In these countries, older children (generally 3-5 year-olds) are offered services that are regulated by the education ministry, while services for younger children (generally aged 0 to 2) are governed by another authority.

Enrolment in early childhood education and care

Enrolment of children under the age of 3

Despite the benefits of high-quality ECEC in the first years of life, participation in early childhood education is not compulsory in any OECD country for children under the age of 3 (OECD, 2018[14]; 2018[2]). In 2020, more than one in four children under 3 were enrolled in formal ECE settings on average across OECD countries, ranging from 2% or less in Luxembourg, Poland and Türkiye to more than 50% in Denmark, Israel, Korea and Norway (Figure B2.1). The availability and length of parental leave and the starting age for ECE programmes influence whether children are enrolled in such services and the age at which they begin to attend. In most countries with early childhood educational development services (ISCED 01), children can be enrolled in relevant programmes within their first year after birth (Table X1.5). However, in Sweden, children can only be enrolled after their first birthday.

Entitlement to ECE is also a significant factor affecting enrolment rates. In Denmark and Korea, for example, children have universal entitlement to early childhood educational development programmes within their first year, while children in Norway have the right to attend ECE after their first birthday (Table X1.5). Significantly, children are also entitled to some free ECE from birth in Korea, the country with the highest enrolment rates in ECE for under-threes. The OECD countries with relatively few under-threes enrolled in ECE (i.e. below the OECD average) have neither universal entitlement nor free provision of such programmes for this age group (Figure B2.1).

Other factors such as maternal employment rates and cultural perspectives on the role of women either in the workplace or as primary caregivers are also likely to be important. Israel has one of the highest enrolment rates of children under 3 in ECE in the OECD, even though free provision and universal entitlement do not begin until children are 3 years old (Table X1.5). However, a 76% of mothers with children under 3 are employed in Israel, higher than the OECD average of 59% (OECD, 2020[19]). In contrast, relatively few young children are enrolled in ECE in countries where maternal employment rates are low. For example, enrolment rates of under-threes are around 5% in Hungary and the Slovak Republic (Figure B2.1), where the employment rates of mothers whose youngest child is under 3 are below 20%.

In some countries, considerable shares of children under 3 are enrolled in other registered ECEC services targeted at this age group that do not meet ISCED criteria for ECE. For example, over 60% of children under 3 in the Netherlands are enrolled in such services, the highest reported share among OECD countries (Figure B2.1). This reflects the childcare needs of working parents, as over three-quarters of mothers with a child under 3 are employed in the Netherlands but there are no formal ECE programmes meeting ISCED criteria for children of this age (OECD, 2020[19]). Smaller proportions of mothers with young children are employed in Japan (55%) and Poland (58%), where average enrolment rates in such ECEC programmes are lower, but still significant. In Japan, 33% of under-threes are enrolled in other registered ECEC services, and 11% in Poland. Small shares (less than 3%) of under-threes are also enrolled in ECE programmes in Japan and Poland, although these are targeted primarily at children aged at least 3 (Figure B2.1).

In many European countries, the expansion of ECEC has been a result of further stimulus from the objectives set by the European Union (EU) at its Barcelona 2002 meeting to supply subsidised full-day places for one-third of children under 3 by 2010 (OECD, 2017[1]). On average, the enrolment rates of young children have risen steadily in most OECD countries since 2005. In Germany, Norway, Slovenia and Spain, the share of children under the age of 3 enrolled in ECE increased by over 20 percentage points between 2005 and 2020. Some countries have particularly accelerated the expansion of ECE for children under 3 in recent years. For example, 37% of children under 3 were enrolled in ECE (ISCED 0) in Finland in 2020 compared to 28% in 2015 and 25% in 2005. Korea witnessed the largest expansion between 2015 and 2020, with the enrolment of under-threes increasing by 10 percentage points. In some countries, however, the enrolment of young children declined between 2015 and 2020. This is the case in Colombia, Denmark and New Zealand (Table B2.1).

In some countries, the increase in enrolment rates has been encouraged by changes to legal entitlements. In Norway, universal entitlement to ECE for 1-year-olds was implemented in 2009 (OECD, 2017[1]). In Germany, the legal right to a place in ECE for children over the age of 1 came into force in 2013. However, changes to funding policies have also had a considerable impact. In Spain, for example, the *Educa3* programme was given an initial budget of EUR 100 million for the period 2008-12 to increase the number of places in ECEC services for children from birth to 3 years (Arango and Pastrana, 2011[20]; Ibáñez and León, 2016[21]). Meanwhile, in Korea, free child care for 0-2 year-olds was introduced from March 2012.

Despite efforts to increase the affordability and access to ECEC for very young children, the likelihood of participation is still very contingent on family background and income, particularly in early childhood educational development services that rely strongly on private sources of funding. Data from the European Union Statistics on Income and Living Conditions (EU-SILC)

Survey reveal that there are statistically significant differences in participation in ECEC in half of all EU countries for children experiencing socio-economic disadvantage in terms of household income, maternal education, risk of poverty or social exclusion (Flisi and Blasko, 2019[22]). On average across European OECD countries, 0-2 year-olds in low-income households were one-third less likely to participate in ECEC (centre-based, home-based and organised family child care) than those in high-income households in 2017. In some countries, such as France and Ireland, the difference in participation rates between children from high- and low-income families exceeds 40 percentage points. This is highly concerning since inequitable access to ECE may then mean that development gaps between children from disadvantaged backgrounds and others are widened even before the start of primary school, as these can persist and even worsen as children advance through school (OECD, 2017[23]), In contrast, in Denmark, there is a high participation rate of young children in ECEC regardless of parents' income level (OECD, 2020[24]).

Enrolment of children aged 3 and over

Bringing forward the starting age of compulsory schooling has been the focus of policy reform in recent years as research suggests that an early start to a quality education can be beneficial for children's development and can help prepare them for school. A decade ago, most OECD countries saw the start of compulsory education coincide with the start of primary school (at 6 years old in most countries). But today, ECE has become a mandatory level of education in 14 OECD countries, as the starting age of compulsory education has been lowered. In six countries, compulsory education starts one year before entry into primary school but in several cases participation in ECE is mandatory for longer. For example, children are legally required to attend ECE for three years in France, Israel, and Mexico, and for four years in Hungary.

In about one-third of countries, children are not obliged to attend early childhood education for any period but there is universal provision of such services. In several others, universal entitlement to ECE starts from an even earlier age than compulsory attendance. In Sweden, for example, only one year of pre-primary (ISCED 02) education is mandatory but all children have the right to a place in ECE for six years.

Although participation is not compulsory in all countries, enrolment of 3-5 year-olds is still very common across the OECD, with 87% enrolled in ECE and primary education on average. In more than half of the OECD countries with available data, the enrolment of children between the ages of 3 and 5 is nearly universal, i.e. at least 90%. The highest enrolment rates of 3-5 year-olds in ECE and primary education are found in Belgium, Denmark, France, Ireland, Israel, Norway, Spain and the United Kingdom, where they equal or exceed 97%. In contrast, 50% or less are enrolled in education in Saudi Arabia, Switzerland and Türkiye (Table B2.1). Lower enrolment rates may be due to insufficient places available, lack of awareness by parents of the importance of ECEC, limited public coverage and high cost of early learning settings, or low employment rates for mothers with young children (OECD, 2017[25]).

In the past few decades, enrolment of 3-5 year-olds in education has been expanding as a result of the extension of compulsory education to younger children, the increased provision of free ECE for some ages and targeted population groups, and universal provision for older children. In Japan, for example, the right to free ECEC was introduced for 3-5 year-olds in 2019. Between 2015 and 2020, the average enrolment of 3-5 year-olds in ECE and primary education in OECD countries rose by 1 percentage point. A few countries have seen spectacular increases, of more than 5 percentage points, in the enrolment of 3-5 year-olds over this period, including Finland, Greece, Lithuania, Poland and the Slovak Republic. In contrast, other countries have not shown much change, mostly as enrolment levels were already high in 2015. In France, for example, the starting age of compulsory education was lowered from 6 years to 3 in September 2019 but this did not lead to an increase in the enrolment rate of 3-5 year-olds as it was already 100%. Switzerland is the only country where enrolment was low in 2015 (less half of 3-5 year-olds were enrolled in education) and there has not been any significant progress since. This is due to the lack of public provision and the high financial cost of ECE for parents (OECD, 2020[24]), despite the fact that pre-primary education is compulsory for children aged 4 and over (Table B2.1).

The vast majority of 3-5 year-olds enrolled in education attend pre-primary programmes across most OECD countries. However, in countries such as Australia, Ireland, New Zealand and the United Kingdom, primary education begins at age 5 (Annex 1). Meanwhile, children do not start primary education until the age of 7 in Estonia, Finland, Latvia, Lithuania, Poland, Sweden and Switzerland. The age at which children transition to primary education has long been debated across OECD countries. ECEC programmes aim to develop the cognitive, physical and socio-emotional skills needed to participate in school and society, primary education is designed to give pupils a sound basic education in reading, writing and mathematics, along with a preliminary understanding of other subjects (OECD/Eurostat/UNESCO Institute for Statistics, 2015[16]). While good quality ECEC can have a beneficial impact on young children, a large body of evidence indicates the crucial importance to

young children's development of free play and child-initiated exploration, before they engage in more academically oriented programmes (OECD, 2017[25]).

Some learning areas are commonly included in the curriculum frameworks designed to guide the development of children participating in ECEC. A study of 56 curriculum frameworks from 26 OECD countries found that respect for others was specified as a learning area in every curriculum, and most also included literacy/oral language, co-operation, respect for diversity, play, artistic expression and appreciation, and physical well-being (OECD, 2021[9]). However, the organisation and structure of programmes at pre-primary level can differ considerably both within and between countries. For example, in most countries, subject-based learning in disciplines like mathematics, sciences or arts is a mandatory component of pre-primary programmes (see Annex 3, https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf). In Hungary, such activities are recommended but not obligatory for children attending *Óvoda*. In contrast, the regulatory framework for *Segundo ciclo de educación infantil* programmes for 3-5 year-olds in Spain does not include provisions for subject-based learning. Similarly, *Kindergarten* programmes for 3-5 year-olds in Austria do not have such regulations although *Vorschulstufe* programmes for 6-year-olds do.

Countries may also vary in their view of the importance of care components, even between programmes classified as early childhood education (as opposed to other registered services that are not classed as educational). In Finland and Norway, for example, care is an integral part of the national curriculum, alongside sections specifically related to education (Norwegian Directorate for Education and Training, 2017[26]; Opetushallitus, 2016[27]).

Box B2.1. Preparing children for primary school through pre-primary education

The SDG 4 agenda reaffirms the importance of children's participation in ECEC, by dedicating an entire target (4.2) to "ensuring that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education". Indicator 4.2.2, in particular, measures participation in organised learning – the share of children who are enrolled in ECE or primary education – one year before the official starting age of primary school. On average across OECD countries, about 98% of children are enrolled in ECE one year before the official primary school entry age. There is, however, substantial cross-country variation, with values ranging from around 80% in Australia and Türkiye to 100% in Colombia, France, Ireland, Mexico, Portugal, Switzerland and the United Kingdom ().

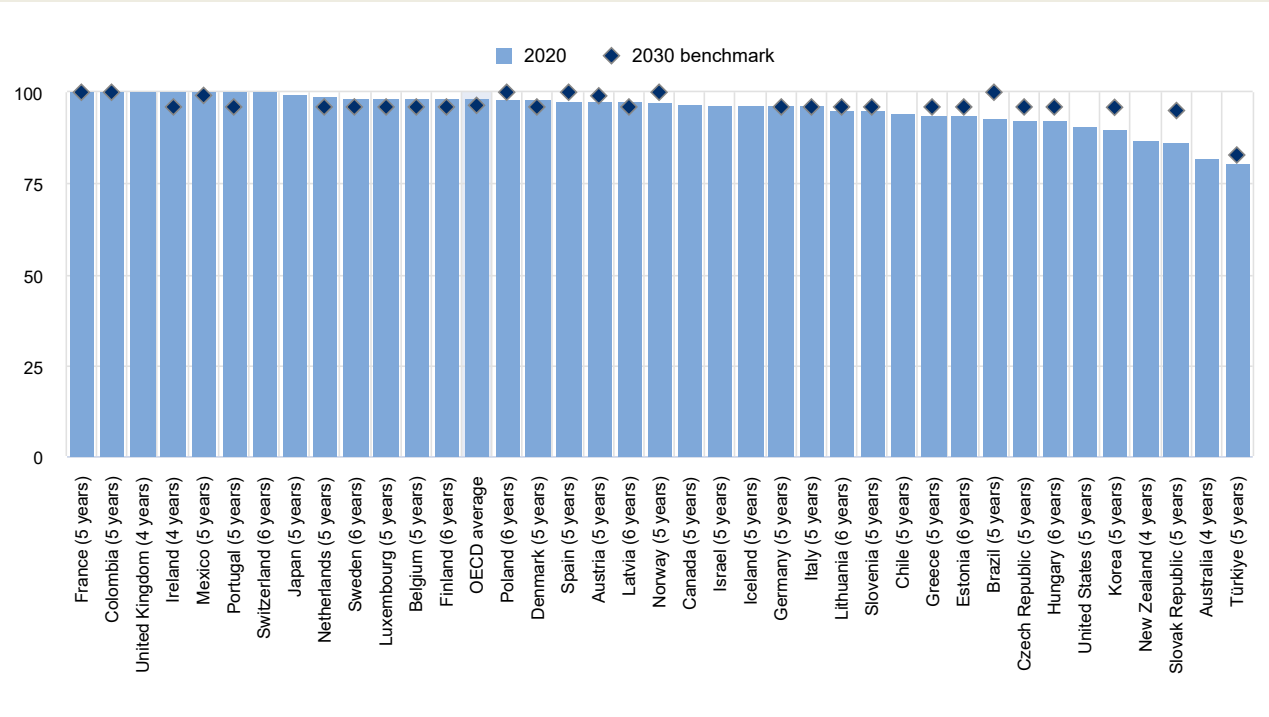
Most OECD countries have full enrolment (over 90%) of children in organised learning in the year before primary (33 out of 38). In 12 of 29 countries which have set relevant benchmarks, participation rates in organised learning in the year before primary entry are already above the stated goal for 2030. Only three countries, Brazil, Korea and the Slovak Republic, have not yet reached full enrolment for children in the year before primary school and are still over 5 percentage points below their benchmark goals for 2030. In Türkiye, although participation in organised learning is still relatively low it has greatly increased in recent years, with the share of children aged 3-5 enrolled in ECE or primary education rising by 29 percentage points between 2005 and 2020 (Table B2.1). It is now only 2 percentage points below its 2030 goal ().

In most countries, the participation rate in organised learning one year before the official primary entry age is higher than the enrolment rate of 3-5 year-olds (Table B2.1). The difference is over 10 percentage points in nine countries, reaching 50 percentage points in Switzerland. In some, these differences are due to the fact that regulations surrounding ECE and entitlements to such services differ for children in their final year before entering primary school. For example, in Finland, children are only entitled to universal free access to pre-primary education for a year before the start of primary school (Table X1.5). Pre-primary education during this year has been mandatory since the Basic Education Act was revised in 2015, although pre-primary education is still not part of compulsory education as stipulated in the Compulsory Education Act. Meanwhile in Austria, Colombia, Greece, the Netherlands, Poland and Sweden the last year of pre-primary is compulsory.

Some countries offer distinct one-year programmes specifically for children in the year before starting primary school. This is the case, for example, in Australia, Austria, Canada, Costa Rica, Finland, Germany, Greece, Iceland, the Slovak Republic, Sweden and the United States. These are often designed to help children with the transition from ECE to primary education. For example, in Finland, the *Esiopetus* programme for 6-year-olds is the only type of ECE that can be offered in school-based settings. It follows a different curriculum framework, which is explicitly aligned with the one for primary education (OECD, 2017[25]). It is also the only ECE service in Finland that has minimum required levels of attendance, at an average of 4 hours per day, 700 hours per school year.

Figure B2.2. Participation rate in organised learning one year before the official primary entry age against benchmark values (2020)

SDG Indicator 4.2.2, in per cent



Note: The year before official primary entry age is indicated in parentheses after country names. 2030 benchmark values refer to national targets submitted by countries during a benchmark-setting exercise in August 2021. Mostly, these are based on rates of progress using historical and current data, focusing on the period from 2000 to 2018. A minority of countries did not submit benchmark values but had relevant targets in their national plans, and some did not have data available. Benchmarks for some EU member states do not represent national benchmarks but those agreed through regional processes. For these countries, the 2030 benchmark refers to the European Education Area target for participation in ECE, which is based on a larger age group of children aged 3 to primary starting age. For more information, see *National SDG 4 benchmarks: fulfilling our neglected commitment* (UNESCO, 2021[28]).

Countries are ranked in descending order of the participation rate in organised learning one year before the official primary entry age in 2020

Source: UNESCO Institute for Statistics, 2020. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

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In other countries, the organisation of ECE programmes for children is similar for all years of pre-primary education. In France and Italy, for example, there is a single curriculum framework for all children enrolled in pre-primary, and children start attending programmes in school-based settings from the age of 3. Meanwhile, in Estonia, there is only one ECE programme offered for children from birth to the age of 6, which is offered in centre-based settings, and is regulated by a single curriculum framework (see Annex 3, https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

Regional variation in the enrolment of 3-5 year-olds

Equitable access to quality ECE can strengthen the foundations of lifelong learning for all children and support the families' wider educational and social needs. Among the various equity dimensions, geographical location may hinder access to a quality education. For example, it may be more challenging to recruit qualified staff in some rural regions and families may have to travel long distances to access the nearest setting (Oberhuemer and Schreyer, 2018[29]; Raban and Kilderry, 2017[30]).

Higher levels of participation in ECE among 3-5 year-olds at the national level tend to be associated with smaller disparities among regions. There were low levels of regional variation in enrolment rates in almost two thirds of countries where the national enrolment rate of 3-5 year-olds in ECEC was 90% or above, with a standard deviation less than 7% (OECD, 2022[8]). At the other end of the spectrum, the countries with the lowest levels of participation in ECE also had the highest regional disparities. More than 40 percentage points separate the regions with the highest (86%) and lowest (38%) enrolment rates of 3-5 year-olds in Switzerland, a country with a highly federal system and a great degree of autonomy in the organisation of

ECE. Low levels of enrolment may be due to more limited provision of ECE and the inability of some families to travel to the nearest ECE setting in certain regions, particularly the more rural ones.

Children in capital cities are less likely to participate in ECE in a number of countries. For example, in Chile, the Santiago metropolitan region has one of the lowest enrolment rates in the country, at 71% of 3-5 year-olds. Only Antofagasta has a lower enrolment rate (66%). There are also relatively low participation rates in the capital cities of the Czech Republic, Greece, Italy, Norway, Portugal or Sweden In some cases, these differences in participation rates among 3-5 year-olds may be partly explained by demand outstripping the provision of ECE (Bucaite-Vilke, 2021[31]; Ünver, Bircan and Nicaise, 2018[32]). In addition, publicly managed centres are significantly more likely to be located in more rural areas, underlining the role of the public sector in ensuring equal access to ECEC settings across the national territory (OECD, 2019[33]).

Staffing of early childhood education and care

Teachers play a central role during children's early years, helping them develop in many aspects of their lives: cognitively, socially and emotionally. In ECE, teachers are the individuals with the most responsibility for a group of children at the class or playroom level and may be referred to as pedagogues, educators or childcare practitioners. They have varying levels of qualification across countries, but are generally expected to hold qualifications commensurate with the professional nature of their work, often a tertiary degree (OECD, 2020[34]).

In some countries, teachers constitute the vast majority of staff working with children in ECEC. In Japan, centre leaders reported that more than 70% of pre-primary staff working in ECEC centres are teachers (OECD, 2022[35]). However, in other countries, the workforce is more diverse and there are fewer teachers. ECEC centre leaders in Chile reported that teachers make up only around 20% of all pre-primary staff.

There is a large degree of variation among OECD countries regarding the share of contact staff who are teachers as opposed to teachers' aides. Teachers' aides support teachers and have lower levels of responsibility and autonomy but perform educational functions on a regular basis. In most countries, they have a lower qualification level than teachers, often an upper secondary vocational qualification. In some countries, additional selection is required to qualify as a pre-primary school assistant. For example, in Slovenia, it is required to pass a state professional examination in education to qualify as an assistant at pre-primary level. On average in countries with available data, there are larger shares of teachers' aides among contact staff in early childhood educational development services (49%) than in pre-primary education (35%) but there are great differences between countries at both levels of ECE (Table B2.2). At pre-primary level, teachers' aides do not exist as a separate category of staff in nearly one-quarter of OECD countries. Where they do exist, they comprise 10% of contact staff or less in Germany, Japan and the Slovak Republic but 60% or more in Chile, Norway and the United Kingdom.

Positive relationships with teachers are an important element of process quality, associated with both improved literacy and numeracy skills, and with better behavioural and social skills (OECD, 2018[14]). The quality of teachers' interactions with children is influenced by a range of factors, notably the preparation and support that they receive to enter the profession and in their continuing professional development (OECD, 2021[9]). However, teachers' capacity to foster positive relationships with young children are also influenced by their working conditions, which can affect their well-being and motivation to stay in the profession (OECD, 2020[36]).

Age profile of early childhood education teachers

The age distribution of ECE staff varies considerably across countries, and can be affected by a variety of factors, such as the size and age distribution of the population, as well as the attractiveness of the ECE profession in terms of staff salaries and working conditions. On average across OECD countries, the youngest teachers (below the age of 30) make up 18% of teachers at the pre-primary level. However, this share varies considerably across countries, ranging from 3% in Portugal to 49% in Japan. Meanwhile, older staff (50 years and over) make up 29% of all teachers at pre-primary level on average across OECD countries. In 15 out of 33 countries with available data, the share of teachers aged 50 and over is at least double that of the share of those under 30, which may have some significant implications for their capacity to replace retiring teachers in the near future (Figure B2.3).

Competitive salaries, good working conditions and career development opportunities are some of the factors that may attract young people to teaching in ECE, and remaining in the profession. In most OECD countries with available data, however, the average salaries of pre-primary teachers are substantially lower than those of full-time, full-year workers with tertiary education. In Hungary, the Slovak Republic and the United States, pre-primary teachers' salaries are less than 60% of those

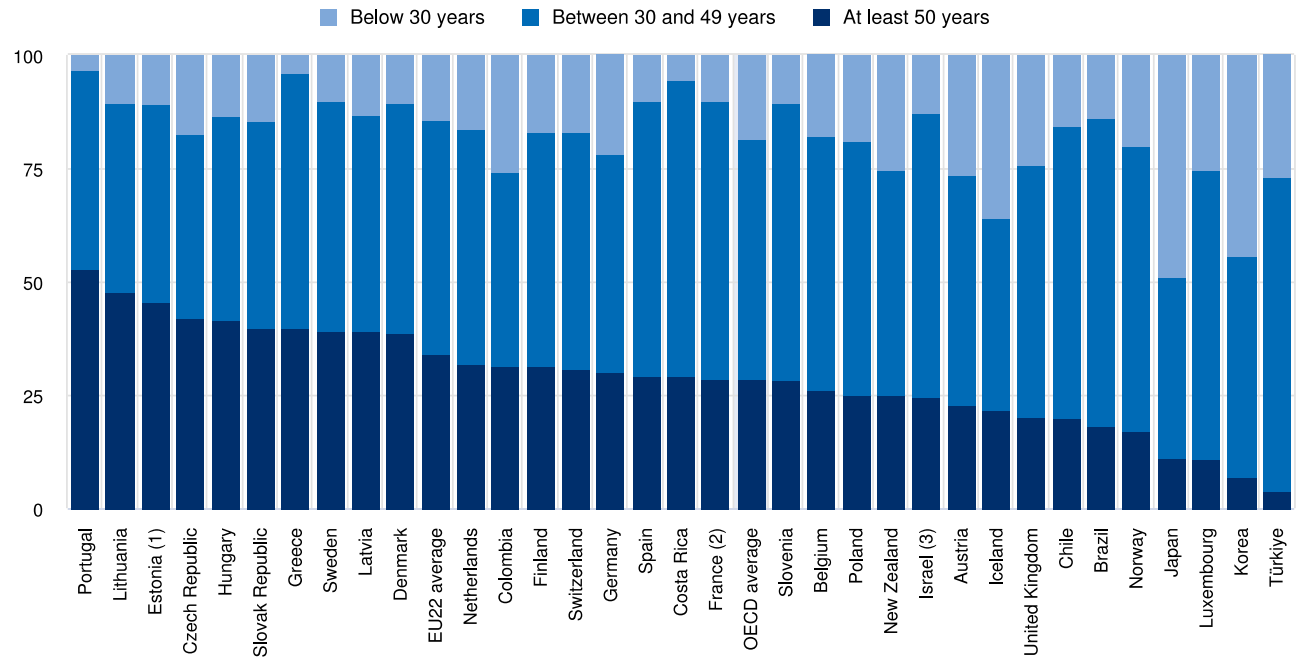
of tertiary-educated workers on average (see Indicator D3). In many countries, teachers' average salaries tend to increase with the level of education, meaning that salaries for teachers in ECE are particularly uncompetitive. In a few countries, however, the salaries of pre-primary teachers are equal to or significantly higher than those of teachers at higher levels of education and well above the wages of tertiary-educated workers. Pre-primary teachers in Australia earn 5% more than tertiary-educated workers on average, rising to 30% more in Lithuania and 50% more in Portugal (Table D3.2).

Given the wage gaps in most other countries, however, it is not surprising that fewer than two in five ECEC staff members report being satisfied with their salary in OECD countries with available data (OECD, 2019[33]). This is a concern as there is some evidence to suggest that higher wages for ECEC staff are associated with higher-quality interactions with children (OECD, 2018[14]). Teachers' views of their value in society are also likely to be affected by their comparative earnings and these factors could discourage them from staying in the profession. Research suggests that lower salaries are often linked to higher levels of staff turnover, which is troubling given that positive child outcomes are consistently related to stability (Hunstman, 2008[37]).

To some extent, the age distribution of teachers in ECE reflects the levels of experience in the workforce. In Korea, for example, two-thirds of pre-primary teachers reported having less than 10 years of experience in the Starting Strong Teaching and Learning International Survey (TALIS Starting Strong) in 2018, which aligns with the country's large share of teachers under 30 (OECD, 2019[33]). However, not all countries with higher proportions of young teachers have lower proportions of experienced staff. For example, the share of pre-primary teachers under 30 is more than three times higher in Japan than in Israel, but the share of pre-primary teachers with at least 10 years of experience is actually 3 percentage points higher in Japan (OECD, 2019[33]). Studies on the importance of teachers' experience for children's outcomes have produced mixed findings, but research on other levels of education tends to suggest that more professional experience is associated with greater teacher quality (Hanushek and Rivkin, 2006[38]; McMullen et al., 2020[39]).

Figure B2.3. Age profile of teachers at pre-primary level (2020)

In per cent



1. Includes data from early childhood education and care (ISCED 01).
2. Excludes data from independent private institutions (and government-dependent institutions for teachers' aides).
3. Includes some non-teaching staff (managers).

Countries are ranked in descending order of the share of teachers at pre-primary level above 50 years (2020).

Source: OECD/UIS/Eurostat (2022), Table B2.2. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

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Ensuring that young teachers working in ECEC are offered career development opportunities is central to avoiding teacher attrition. Survey data reveal that pre-primary staff under the age of 30 are most likely to want to leave the profession to take up further studies in an education programme, reflecting that young staff are seeking further qualifications for career progression, either within the ECEC sector or elsewhere (OECD, 2020[36]).

Gender profile of early childhood education and care staff

Women tend to dominate the teaching profession in most levels of education, and the over-representation of women in the workforce is particularly marked in ECE. On average across the OECD, the greatest concentration of female teachers occurs in the earlier years of schooling, with women making up 96% of teaching staff at pre-primary level. The share of women shrinks with each successive level of education, to 83% at primary level, 63% at secondary level and only 44% at tertiary level (OECD, 2020[40]). Meanwhile, in Korea and Lithuania, almost all ECE teachers were women (Table B2.2).

The gender imbalance of teaching staff in ECE raises questions as to why women are much more likely to enter the profession and what the implications are for the understanding of gender for children, staff and society. Gender stereotypes of women as carers contribute to the perception of teaching at pre-primary level as a female profession (Peeters, Rohrmann and Emilsen, 2015[41]). It is not necessarily the case that female teachers reinforce gender stereotypes in their interactions with children nor that the mere presence of more male teachers would tackle gender essentialism. However, scholars have argued that children's understanding of gender is broadened when they are able to observe a variety of gender expressions both within and between genders (Warin, 2019[42]; McGrath et al., 2020[43]). On a staff and societal level, the inclusion of more men in the ECEC workforce could help to challenge dominant discourses about masculinity regarding the participation of men in young children's lives.

In this regard, governments in several OECD countries have made efforts to attract more men to the ECE workforce in recent years. In Norway, for example where men make up less than 10% of pre-primary teachers, one measure undertaken has been the "Play Resources" project. As part of the initiative, boys are encouraged to experience work in ECEC settings, and consider working with young children as a professional career. For example, the county of Oppland financed a project where boys in secondary school (13-16 years old) were invited to work in ECEC settings for 1-2 weeks during their holidays, or 1 day a week after school, for a set period of time (OECD, 2020[36]).

Child-staff ratios and staff qualifications

Child-staff ratios and group sizes are important indicators of the resources devoted to education. Research into the impact of lower child-staff ratios have found that they can be supportive of child-staff relationships across different types of ECEC settings. Smaller ratios are often seen as beneficial, because they allow staff to focus more on the needs of individual children and reduce the amount of time spent addressing disruptions (OECD, 2020[40]). Thus, the regulation of these measures can be used to improve the quality of ECE. On average across OECD countries, there are 15 children for every teacher working in pre-primary education, but wide variations exist across countries. The ratio of children to teaching staff, excluding teachers' aides, ranges from fewer than 10 children per teacher in Finland, Germany, Iceland and New Zealand to more than 20 in Chile, Colombia, France and the United Kingdom (Table B2.2).

Lower child-staff ratios are particularly important for high-quality interactions with children under 3 (OECD, 2018[14]). With the exception of Hungary and Mexico, the child-to-teacher ratio in early childhood development services (ISCED 01) is consistently lower than for pre-primary education (ISCED 02) across all OECD member and partner countries. On average across OECD countries, there are 10 children for every teacher working in early childhood educational development services, ranging from 31 in the United Kingdom to 3 in Iceland and New Zealand (Table B2.2).

It should be noted, however, that teaching staff may have experienced rather different pathways as part of their preparation to become a teacher in different countries (see Indicator D6). Initial staff qualifications are a strong predictor of high process quality, so these need to be considered alongside child-staff ratios in assessing the quality of ECE provision (Manning et al., 2019[44]). Even within the same country, regulations on the minimum level of qualification required can differ between early childhood development services and pre-primary education. For example, teachers working with younger children (usually under 3 years) in the Flemish Community of Belgium, the Netherlands, and Türkiye are required to have an upper secondary qualification. Meanwhile, teachers working with children from the age of 3 (or 4 in the Netherlands) are required to have a tertiary degree (see Annex 3, https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

Some countries – Austria, Chile, France, Lithuania, Norway, Slovenia, Sweden and the United Kingdom – also make extensive use of teachers' aides, as can be seen from the smaller ratios of children to contact staff compared to children to teaching staff. In most cases, the share of teachers' aides among contact staff is similar between early childhood development services and pre-primary education, with differences of less than 5 percentage points. In Chile, however, the share of teachers' aides in pre-primary is nearly 1.5 times that in early childhood development services. Thus, while the ratio of children to contact staff in Chile is below average at pre-primary, the ratio of children to teaching staff (23:1) is far above the OECD average of 15:1. Meanwhile in Mexico, three-quarters of contact staff in early childhood development services are teachers' aides but this staff category does not exist at the pre-primary level (Table B2.2).

Financing early childhood education and care

Sustained public financial support is critical for the growth and quality of ECEC programmes. Appropriate funding helps to recruit trained staff who are qualified to support children's cognitive, social and emotional development, as well as ensure their ongoing professional development. Investment in early childhood facilities and materials also helps support the development of child-centred environments for well-being and learning. Moreover, if the cost of ECEC is not sufficiently subsidised, the ability of parents to pay will greatly influence participation in ECEC among children from disadvantaged socio-economic backgrounds (OECD, 2017[1]). In countries that do not channel sufficient public funding towards achieving both broad access and high-quality programmes, some parents may be more inclined to send their children to private ECEC services.

Expenditure per child

In pre-primary education, annual expenditure for both public and private settings averaged about USD 9 600 per child in OECD countries in 2019, ranging from less than USD 5 000 in Colombia and Ireland to more than USD 16 000 in Iceland, Luxembourg, and Norway (Table B2.3). Child-to-staff ratios and teacher compensation are the main drivers of spending at pre-primary level, as countries with lower child-to-staff ratios tend to spend more per child. Other factors, such as the number of hours per year an ECEC setting is required to be open also influence expenditure levels. For example, pre-primary settings in Norway are open 48 weeks a year on average, compared to about 35 weeks in Belgium, Greece, Israel and Spain (see Box B2.2 in *Education at a Glance 2018* (OECD, 2018[45])).

Annual expenditure per child enrolled in early childhood educational development services is substantially higher than for pre-primary education, averaging about USD 15 500 across OECD countries with available data. However, this masks wide variation in spending between these levels of education across countries: in Chile and Lithuania, spending in early childhood educational development services is at most USD 1 000 more per child than at pre-primary level, compared to a difference of at least USD 11 000 more in Denmark, Finland and Norway. Australia, Hungary and Israel are the only OECD countries with data where spending per child in early childhood development services is lower than at pre-primary level (Table B2.3).

Smaller child-to-staff ratios in early childhood development services are one of the main drivers of this difference (Table B2.2). However, they do not account for all of it. For example in Chile, although the child-to-teacher ratio in early childhood development services is more than half its value in pre-primary education, spending increases by less than USD 1 000 per child (Table B2.3). This may be partly due the lower qualifications required of teaching staff at this level, resulting in a lower salary costs in some countries.

Expenditure as a percentage of gross domestic product

Spending on ECE can also be analysed relative to a country's output. Expenditure on all ECE settings in 2019 accounted for an average of 0.9% of gross domestic product (GDP) across OECD countries, of which two-thirds was allocated to pre-primary education (ISCED 02). While 0.3% or less of GDP was spent on pre-primary education in Colombia, Greece, Japan and the United Kingdom, countries such as Iceland, Norway and Sweden spent at least 1% of GDP at this level (Table C2.1). Besides, spending on other registered ECEC services might vary across countries; in Japan, for example, the right to free ECEC was introduced for 3-5 year-olds and economically disadvantaged 0-2 year-olds in 2019.

The differences in expenditure are largely explained by enrolment rates, legal entitlements and the intensity of participation, as well as the different ages at which children start primary education. The shorter duration of pre-primary education, as a result of children's earlier transition from pre-primary to primary education in Australia, Ireland and the United Kingdom, partly explains why expenditure on ECEC as a percentage of GDP is below the OECD average in these three countries. Similarly,

late entry into primary education, as in Estonia, Finland, Latvia, Lithuania and Sweden, means a longer duration of ECEC than in other countries and may explain why those countries spend more as a percentage of GDP than the OECD average (see the information on starting ages for primary education in Table B2.1).

To avoid this distortion, an estimation of spending by age group has been included in the ECE spending indicators since the 2019 edition of Education at a Glance. This methodology avoids the distortion by comparing expenditure on children of the same age, giving a more accurate picture of countries' investment in their young children. As this indicator presents an estimation of the actual cost, the data should be interpreted with caution. Across OECD countries, the share of national resources devoted to 3-5 year-olds enrolled in ECE and primary education is 0.6% of GDP. It ranges from 0.3% of GDP in Greece and Ireland to 1.0% in Chile, Iceland and Norway (Table B2.3).

Public and private provision and funding of early childhood education and care

Parents' needs and expectations regarding accessibility, cost, programme, staff quality and accountability are all important in assessing the expansion of ECEC programmes and the type of providers. When parents' needs for quality, availability, accessibility or affordability are not met by public institutions, some parents may be more inclined not to enrol children in ECEC, or to send their children to private institutions (Shin, Jung and Park, 2009[46]).

Private institutions can be classified into two categories: independent and government-dependent. Independent private institutions are controlled by a non-governmental organisation or by a governing board not selected by a government agency and receive less than 50% of their core funding from government agencies. Government-dependent private institutions have similar governance structures, but rely on government agencies for more than 50% of their core funding (OECD, 2018[47]). In most countries, the share of children enrolled in private institutions is considerably higher in early childhood education than at primary and secondary levels. On average across OECD countries, about half of the children in early childhood educational development services and one-third of those in pre-primary education are enrolled in private institutions. This average, however, hides huge discrepancies across countries. In the Czech Republic, Lithuania, Slovenia and Switzerland, 5% or less of the children in pre-primary education attend private institutions. In other countries, pre-primary remains mostly private: in Australia, Ireland, Japan, Korea and New Zealand, 75% or more of children attending pre-primary programmes are enrolled in private institutions (Table B2.3).

Generally, there has been a substantial and increasing degree of public investment in ECE, although there are differences between pre-primary (ISCED 02) and early childhood educational development (ISCED 01). On average across OECD countries, private funding represented 29% of total expenditure on early childhood educational development and 17% on pre-primary education in 2019 (Table B2.3). While the share of private funding varies greatly across countries, the source of funding does not necessarily reflect the entity providing the service. In all OECD member and partner countries, the public sector provides for at least 50% of the total cost of pre-primary education, even in countries where almost all pre-primary children attend private institutions. In Korea, for example, although 75% of pre-primary children attend private institutions, private sources account for less than 20% of total costs, a lower share than in countries with significantly higher public provision of pre-primary education, such as Denmark or Slovenia (Table B2.3). Different private entities may contribute to the funding of pre-primary education. In the United Kingdom, most of the private funding comes from households. In Japan, private costs are shared between households, foundations and the business sector, although private ECE centres are publicly subsidised and household contributions to ECE are capped.

Early childhood education and care remains expensive for many parents, particularly for children under 3, where households' financial contributions tend to be higher than at the pre-primary level. Calculations using comparable data on childcare prices charged to parents, and accounting for all relevant support provisions, show that the net costs average 17% of women's median full-time earnings for a middle-income two-earner couple. This varies from over half of female median earnings in Japan and the United Kingdom to almost zero in Chile, the Czech Republic, Germany and Italy, where families with children in public childcare centres can benefit from heavily subsidised childcare fees or may be exempt from paying fees altogether (OECD, 2020[24]).

Distribution of funds for education at pre-primary by level of government

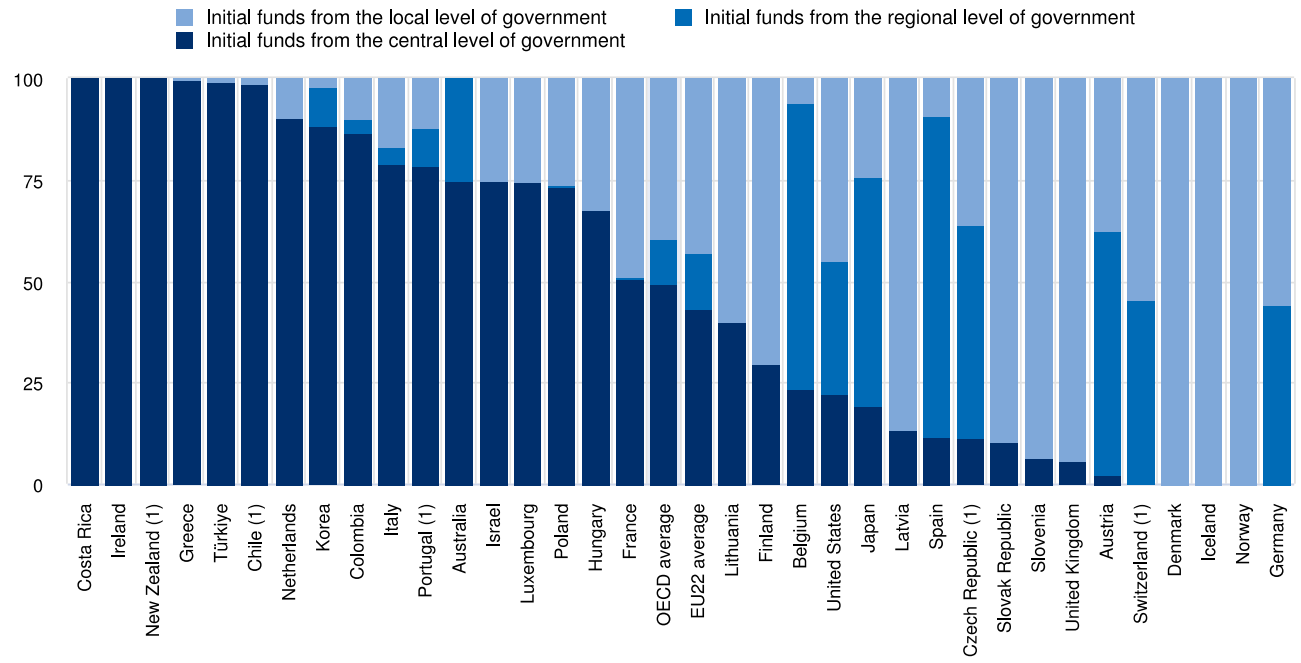
Compared to other levels of education, public funding for ECE is more reliant on regional and local sources than central sources of government. In 2019, spending from central government sources represented 49% of initial public funds for pre-primary expenditure on average across OECD countries. However, this masks wide differences across countries. The central government is the source of over 85% of funds in Chile, Colombia, Costa Rica, Greece, Ireland, Korea, , the Netherlands,

New Zealand and Türkiye, while local and regional sources account for over 90% of funds in Austria, Denmark, Germany, Iceland, Norway, Slovenia Switzerland and the United Kingdom (Figure B2.4).

These variations reflect different governance models for ECE systems as well as the distribution of regulatory and funding responsibilities between levels of government. For example, in Denmark, where 100% of initial public funds for pre-primary education are from the local level, municipalities are responsible for all expenditure on compulsory education and decide how funds are allocated to individual schools (Figure B2.4). However, municipalities administer a range of key local services and some may choose to prioritise spending on education more than others when fixing their budget (Nusche et al., 2016[48]). Furthermore, municipalities use a range of different models to allocate funds, and factors like socio-economic background and school size do not have the same weight or measure across the various funding formulae in use. Similarly, in Germany, each state (Land) determines its own legislation and administration, and assists households with the costs of childcare. In contrast, 99% of initial public funds for pre-primary education are from central government in Chile (Figure B2.4). Here, most public funds are allocated through school grants directly from the state to school providers. For example, schools receive a basic grant (*Subvención de Escolaridad*), which is calculated from monthly average student attendance and adjustment factors by level and type of education (Santiago et al., 2017[49]).

Figure B2.4. Distribution of initial sources of public funds for pre-primary education, by level of government (2019)

In per cent



1. Year of reference differs from 2019. Refer to the source table for more details.
Countries are ranked in descending order of the share of initial funds from the central level of government.
Source: OECD/UIS/Eurostat (2022), Table B2.3. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

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Definitions

ECE: ECEC services in adherence with the criteria defined in the ISCED 2011 classification (see ISCED 01 and 02 definitions) are considered early childhood education programmes and are therefore referred to as ECE in this indicator. Others are considered an integral part of countries' ECEC provision, but are not in adherence with all the ISCED criteria. Annex 3, available on line, makes the distinction between these two categories explicit.

- **ECEC services:** The types of ECEC services available to children and parents differ greatly. Despite those differences, most ECEC settings typically fall into one of the following categories (OECD, 2017[1]) (see Annex 3, https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf):

1. **Regular centre-based ECEC:** More formalised ECEC centres typically belong to one of these three subcategories:
    a. *Centre-based ECEC for children under age 3*: Often called "crèches", these settings may have an educational function, but they are typically attached to the social or welfare sector and associated with an emphasis on care. Many of them are part time and provided in schools, but they can also be provided in designated ECEC centres.
    b. *Centre-based ECEC for children from the age of 3*: Often called kindergarten or pre-school, these settings tend to be more formalised and are often linked to the education system.
    c. Age-integrated centre-based ECEC for children from birth or age 1 up to the beginning of primary school: These settings offer a holistic pedagogical provision of education and care (often full-day).
2. **Family childcare ECEC:** Licensed home-based ECEC, which is most prevalent for children under age 3. These settings may or may not have an educational function and be part of the regular ECEC system.
3. **Licensed or formalised drop-in ECEC centres:** Often receiving children across the entire ECEC age bracket and even beyond, these drop-in centres allow parents to complement home-based care by family members or family childcare with more institutionalised services on an ad hoc basis (without having to apply for a place).

Full enrolment: As in Indicator B1, full enrolment is defined as enrolment rates exceeding 90%.

Informal care services: Generally unregulated care arranged by the child's parent either in the child's home or elsewhere, provided by relatives, friends, neighbours, babysitters or nannies; these services are not covered in this indicator.

ISCED 01 refers to **early childhood educational development services**, typically aimed at children under age 3. The learning environment is visually stimulating, and the language is rich and fosters self-expression, with an emphasis on language acquisition and the use of language for meaningful communication. There are opportunities for active play so that children can exercise their co-ordination and motor skills under supervision and in interaction with staff.

ISCED 02 refers to **pre-primary education**, aimed at children in the years immediately prior to starting compulsory schooling, typically aged 3-5. Through interaction with peers and educators, children improve their use of language and their social skills, start to develop logical and reasoning skills, and talk through their thought processes. They are also introduced to alphabetical and mathematical concepts, understanding and use of language, and are encouraged to explore their surrounding world and environment. Supervised gross motor activities (i.e. physical exercise through games and other activities) and play-based activities can be used as learning opportunities to promote social interactions with peers and to develop skills, autonomy and school readiness.

Teachers and comparable practitioners: Teachers have the most responsibility for a group of children at the class or playroom level. They may also be called pedagogue, educator, childcare practitioner or pedagogical staff in education, while the term teacher is almost universally used at the primary level.

Teachers' aides: Aides support the teacher in a group of children or class. They usually have lower qualification requirements than teachers, which may range from no formal requirements to, for instance, vocational education and training. This category is only included in the *Education at a Glance* indicator on the child-to-staff ratio.

Please see Indicators C1 and C2 for definitions of expenditure per student on educational institutions and expenditure on educational institutions relative to GDP.

Methodology

Enrolment rates

Net enrolment rates are calculated by dividing the number of children of a particular age group enrolled in ECEC by the size of the population of that age group. While enrolment and population figures refer to the same period in most cases, mismatches may occur due to data availability and different sources used in some countries resulting in enrolment rates exceeding 100%.

Full-time and part-time children

The concepts used to define full-time and part-time participation at other ISCED levels, such as study load, child participation, and the academic value or progress that the study represents, are not easily applicable to ISCED level 0. In addition, the number of daily or weekly hours that represent typical full-time enrolment in an education programme at ISCED level 0 varies widely between countries. Because of this, full-time equivalents cannot be calculated for ISCED level 0 programmes in the same way as for other ISCED levels. For data-reporting purposes, countries separate ISCED level 0 data into ISCED 01 and ISCED 02 by age only, as follows: data from age-integrated programmes designed to include children younger and older than 3 are allocated to levels 01 and 02 according to the age of the children. This may involve the estimation of expenditure and personnel at levels 01 and 02. For more information, see the *OECD Handbook for Internationally Comparative Education Statistics* (OECD, 2018[47]) and Annex 3 for country-specific notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

Estimated expenditure for all children aged 3-5 enrolled in ECE and primary education as a percentage of GDP

The calculation of this new measure is based on the distribution of children aged 3-5 enrolled in ISCED 01, ISCED 02 and primary education (ISCED 1). For each country, the calculation was based on what proportion of all children enrolled at each of these three ISCED levels were aged 3-5. For instance, in Australia, children aged 3-5 accounted for 5% of all children enrolled in ISCED 01, 99% of all children enrolled in ISCED 02 and 11% of all children enrolled in ISCED 1. These percentages were used to estimate total expenditure for all children aged 3-5 enrolled in ECEC and primary education. Total expenditure for all children aged 3-5 is calculated by: 5% of all expenditure in ISCED 01 and 99% of all expenditure in ISCED 02 and 12% of all expenditure in ISCED 1. A similar calculation was made for all countries.

Source

- Data refer to the reference year 2020 (school year 2019/20) and financial year 2019.
- Data from Argentina, the People's Republic of China, India, Indonesia, Saudi Arabia and South Africa are from the UNESCO Institute of Statistics (UIS).
- Data are based on the UNESCO-UIS/OECD/Eurostat data collection on education statistics administered by the OECD in 2021 (for details, see Annex 3 at (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).
- Data on subnational regions for selected indicators are available in the *OECD Regional Statistics* (database) (OECD, 2022[8]).

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Indicator B2 tables

Tables Indicator B2. How do early childhood education systems differ around the world?

Table B2.1	Trends in enrolment rates in early childhood education and care (ECEC) and primary education, by age group (2005, 2015 and 2020)
Table B2.2	Age and gender profiles of teachers and ratio of children to staff in early childhood education (ECE), by level (2020)
Table B2.3	Financing of early childhood education (ECE) in public and private institutions (2019)

StatLink https://stat.link/nxr4t1

Cut-off date for the data: 17 June 2022. Any updates on data can be found on line at: https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf. More breakdowns can also be found at http://stats.oecd.org, *Education at a Glance Database*.

Table B2.1. Trends in enrolment rates in early childhood education and care (ECEC) and primary education, by age group (2005, 2015 and 2020)

Public and private institutions

		Age when early childhood education (ECE) services (ISCED 0) start offering intentional education objectives	Typical starting age of primary education	Starting age of compulsory education	Under age 3						Age 3 to 5					
					ECE (ISCED 0)	Other registered ECEC services	ECE (ISCED 0)	Other registered ECEC services	ECE (ISCED 0)	Other registered ECEC services	ECE (ISCED 0)	Primary education	ECE (ISCED 0)	Primary education	ECE (ISCED 0)	Primary education
			2020		2005		2015		2020		2005		2015		2020	
			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
OECD	Countries															
	Australia	0 years	5	6	m	m	39	1	45	m	m	25	58	28	56	26
	Austria	0 years	6	6	6	m	17	2	20	3	76	0	88	0	90	0
	Belgium [1]	Fl.: 3-6 months; Fr.: 2 years	6	6	m	m	m	m	m	m	m	0	98	0	98	0
	Canada	3-5 years	6	6	m	m	m	m	m	m	m	m	m	0	m	0
	Chile	3 months	6	6	m	m	19	0	20	m	m	6	78	0	77	0
	Colombia	0 years	6	5	m	m	32	m	30	m	m	m	72	7	77	6
	Costa Rica	0 years	6	4	m	m	m	m	m	m	m	m	m	m	m	m
	Czech Republic	2-3 years	6	6	m	m	4	m	5	m	85	0	85	0	86	0
	Denmark	26 weeks	6	6	m	m	58	m	55	m	m	m	97	1	97	0
	Estonia	0 years	7	7	m	m	24	3	26	4	84	0	90	0	91	0
	Finland	9 months	7	7	25	m	28	m	37	m	68	0	74	0	88	0
	France	2-3 years	6	3	9	m	4	m	4	m	100	0	100	0	100	0
	Germany	0 years	6	6	17	a	37	a	39	a	87	0	96	0	94	0
	Greece [1]	2 months	6	5	m	m	5	m	m	m	m	0	63	0	56	0
	Hungary	20 weeks	7	3	m	7	5	11	5	m	m	0	91	0	93	0
	Iceland	0 years	6	6	39	13	47	13	49	10	95	0	97	0	96	0
	Ireland	3 years	5	6	m	m	m	m	18	m	m	47	m	45	61	42
	Israel	0 years	6	3	m	a	28 [b]	a	57	a	m	0	99	0	100	0
	Italy	3 years	6	6	4	m	5	m	5	m	98	2	92	3	92	2
	Japan	3 years	6	6	m	16	m	22	3	33	88	0	91	0	95	0
	Korea	0 years	6	6	m	a	52	a	63	a	m	0	92	0	94	0
	Latvia	1.5 years	7	5	17	a	26	a	31	a	77	0	92	0	93	0
	Lithuania	0 years	7	7	13	a	22	a	30	a	59	0	84	0	90	0
	Luxembourg	0 years	6	4	m	m	1	m	1	m	83	1	85	2	88	2
	Mexico	1.5 months	6	3	2	a	2	a	5	a	60	3	73	9	71	9
	Netherlands [2]	3 years	6	5	a	m	a	56	a	62	m	0	93	0	92	0
	New Zealand	0 years	5	5	34	m	42	6	39	m	62	33	62	32	59	30
	Norway	0 years	6	6	33	m	55	m	58	m	88	0	97	0	97	0
	Poland	3 years	7	6	1	2	3	5	2	11	38	0	80	0	88	0
	Portugal [1]	0 years	6	6	19	m	m	1	m	m	77	1	89	0	93	0
	Slovak Republic	3 years	6	6	7	m	5	m	5	m	73	0	72	0	78	0
	Slovenia	11 months	6	6	25	m	38	m	46	m	75	0	88	0	93	0
	Spain	0 years	6	6	15	m	34	m	41	m	98	0	97	0	97	0
	Sweden	1 year	7	6	m	m	45	1	48	m	m	0	93	0	95	0
	Switzerland	4 years	6	4-5	2	m	a	m	a	m	47	0	49	0	49	0
	Türkiye	0 years	6	5-6	m	a	0	a	0	a	10	3	31	7	41	1
	United Kingdom	0 years	5	4-5	m	m	m	m	19	m	m	46	68	33	72	33
	United States [1]	m	6	4-6	m	m	m	m	m	m	64	2	65	2	64	2
	OECD average				m	m	24	m	27	m	74	5	82	4	83	4
	EU22 average				m	m	22	m	22	m	78	3	87	2	88	2
Partners	Argentina [2]	m	m	m	2	m	5	m	m	m	63	0	75	0	78	0
	Brazil	0 years	6	4	m	a	18	a	21	a	m	m	69	2	74	1
	China	m	6	m	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	6	m	m	m	m	m	m	m	m	m	m	m	61	11
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	18	0	20	2
	South Africa [1, 2]	m	m	m	m	m	m	m	m	m	m	m	9	7	10	0
	G20 average	m	m	m	m	m	m	m	m	m	m	m	m	m	75	4

Note: Early childhood education (ECE) = ISCED 0, other registered ECEC services = ECEC services outside the scope of ISCED 0, because they are not in adherence with all ISCED criteria. To be classified in ISCED 0, ECEC services should: 1) have adequate intentional educational properties; 2) be institutionalised (usually school-based or otherwise institutionalised for a group of children); 3) have an intensity of at least 2 hours per day of educational activities and a duration of at least 100 days a year; 4) have a regulatory framework recognised by the relevant national authorities (e.g. curriculum); and 5) have trained or accredited staff (e.g. requirement of pedagogical qualifications for educators). See *Definitions* and *Methodology* sections for more information.

1. Excludes ISCED 01 programmes. For Belgium, excludes ISCED 01 programmes for the French Community of Belgium.
2. Year of reference 2019; for the Netherlands, 2019 is the reference year for other registered ECEC services only.

Source: OECD/UIS/Eurostat (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/z5os1d

Table B2.2. Age and gender profiles of teachers and ratio of children to staff in early childhood education (ECE), by level (2020)

		Share of teachers by age group					Share of female teachers				Ratio of children to staff in full-time equivalents, by type of ECE service (public and private institutions)								
		Early childhood educational development (ISCED 01)	Pre-primary (ISCED 02)			All ECE (ISCED 0)	Early childhood educational development (ISCED 01)	Pre-primary (ISCED 02)		All ECE (ISCED 0)	Early childhood educational development (ISCED 01)			Pre-primary (ISCED 02)			All ECE (ISCED 0)		
		< 30 years	< 30 years	30-49 years	>= 50 years	< 30 years	Early childhood educational development (ISCED 01)	Total	< 30 years	All ECE (ISCED 0)	Share of teachers' aides among contact staff	Children to contact staff (teachers and teachers' aides)	Children to teaching staff	Share of teachers' aides among contact staff	Children to contact staff (teachers and teachers' aides)	Children to teaching staff	Share of teachers' aides among contact staff	Children to contact staff (teachers and teachers' aides)	Children to teaching staff
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
OECD	Countries																		
	Australia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Austria	m	26	51	23	28	98	98	98	98	36	6	9	35	8	13	35	8	12
	Belgium	m	18	56	26	m	m	97	94	m	m	m	m	a	14	14	m	m	m
	Canada	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Chile	21	15	65	20	16	99	99	98	99	36	5	8	60	9	23	59	9	23
	Colombia	m	26	43	32	m	m	97	97	m	m	m	m	m	m	41	m	m	m
	Costa Rica	6	5	65	29	5	80	93	87	91	a	5	5	a	11	11	a	10	10
	Czech Republic	a	17	41	42	17	a	99	99	99	a	a	a	11	11	12	11	11	12
	Denmark	11	10	51	39	10	93	93	89	93	36	3	5	36	7	10	36	5	8
	Estonia	x(5)	x(5)	x(5)	x(5)	11	x(9)	x(9)	m	99	m	m	x(18)	m	m	x(18)	m	m	8
	Finland	m	17	51	32	m	m	97	97	m	m	m	m	m	m	9	m	m	m
	France [1]	a	10	61	29	10	a	91	91	91	a	a	a	38	14	23	38	14	23
	Germany	22	22	48	30	22	95	95	92	95	9	4	5	10	8	9	9	7	7
	Greece	m	4	56	40	m	m	99	99	m	m	m	m	a	10	10	m	m	m
	Hungary	16	13	45	42	14	99	100	99	100	a	14	14	a	13	13	a	13	13
	Iceland	36	36	43	22	36	93	93	87	93	a	3	3	a	5	5	a	4	4
	Ireland	m	m	m	m	m	m	m	m	m	x(16)	x(17)	x(18)	x(16)	x(17)	x(18)	18	3	4
	Israel [2]	m	13	63	25	m	m	99	100	m	m	m	m	m	m	m	m	m	m
	Italy	a	m	m	m	m	a	99	98	99	a	a	a	a	12	12	a	12	12
	Japan	a	49	40	11	49	a	97	98	97	a	a	a	9	12	13	9	12	13
	Korea	19	44	49	7	30	100	99	99	99	a	5	5	a	12	12	a	8	8
	Latvia	13	13	48	39	13	99	99	98	99	m	m	5	m	m	11	m	m	9
	Lithuania	11	10	42	48	10	100	99	97	99	36	6	9	35	6	10	35	6	10
	Luxembourg	a	25	64	11	25	a	93	86	93	a	a	a	a	12	12	a	12	12
	Mexico	m	m	m	m	m	97	96	m	96	75	6	23	a	20	20	10	18	20
	Netherlands	a	16	52	32	16	a	88	87	88	a	a	a	17	13	16	17	13	16
	New Zealand	25	25	50	25	25	97	97	97	97	m	m	3	m	m	6	m	m	5
	Norway	20	20	63	17	20	91	91	87	91	60	3	7	60	5	12	60	4	9
	Poland	a	19	56	25	19	a	98	99	98	a	a	a	m	m	13	m	m	13
	Portugal	m	3	44	53	m	m	99	99	m	m	m	m	m	m	16	m	m	m
	Slovak Republic	a	14	46	40	14	a	100	100	100	a	a	a	2	11	11	2	11	11
	Slovenia	11	11	61	28	11	98	98	98	98	51	5	11	51	9	20	51	8	16
	Spain	10	10	60	29	10	98	93	94	95	m	m	9	m	m	14	m	m	12
	Sweden	11	10	51	39	10	97	96	94	96	60	5	13	56	6	14	57	6	14
	Switzerland	a	17	52	31	17	a	97	97	97	a	a	a	m	m	18	m	m	18
	Türkiye	m	27	69	4	m	m	94	91	m	m	m	m	m	m	16	m	m	m
	United Kingdom	28	24	56	20	25	94	92	92	93	91	3	31	88	4	37	89	4	35
	United States	m	m	m	m	m	m	93	m	m	m	m	m	17	10	12	m	m	m
	OECD average	17	18	53	29	19	96	96	95	96	49	5	10	35	10	15	34	9	13
	EU22 average	13	14	52	34	15	97	97	95	97	38	6	9	29	10	13	28	9	12
Partners	Argentina	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Brazil	16	14	68	18	15	97	94	92	96	38	8	14	13	18	20	28	12	17
	China	a	m	m	m	m	a	97	m	97	a	a	a	m	m	16	m	m	16
	India	a	m	m	m	m	a	m	m	m	a	a	a	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	0	100	m	100	m	m	m	m	m	13	m	m	13
	South Africa	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	G20 average	m	m	m	m	m	m	72	m	71	m	m	m	m	m	13	m	m	12

Note: Early childhood educational development programmes = ISCED 01, pre-primary education = ISCED 02. See *Definitions* and *Methodology* sections for more information.
1. Excludes data from independent private institutions (and government-dependent private institutions for teachers' aides).
2. Includes some non-teaching staff (managers).
3. The ratio of children to teaching staff refers only to public institutions.
Source: OECD/UIS/Eurostat (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

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Table B2.3. Financing of early childhood education (ECE) in public and private institutions (2019)

Expenditure per child, distribution of sources of public funds and relative share of private expenditure

		Percentage of children enrolled in private institutions (government-dependent and independent private institutions)			Expenditure on all children aged 3 to 5 enrolled in ECE and primary education (based on head counts)		Annual expenditure per child in USD, converted using PPPs (based on head counts)			Distribution of initial funds (before transfers) between levels of government			Relative proportions of private expenditure on early childhood education (after public to private transfers)		
										Pre-primary (ISCED 02)					
		Early childhood educational development (ISCED 01)	Pre-primary (ISCED 02)	All ECE (ISCED 0)	As a % of GDP	Per child (in USD PPP)	Early childhood educational development (ISCED 01)	Pre-primary (ISCED 02)	All ECE (ISCED 0)	Central	Regional	Local	Early childhood educational development (ISCED 01)	Pre-primary (ISCED 02)	All ECE (ISCED 0)
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
OECD	**Countries**														
	Australia	m	86	m	0.6	10 131	8 757	9 599	9 243	75	25	0	40	33	35
	Austria	63	29	36	0.5	11 350	15 014	11 143	11 877	3	60	38	27	13	17
	Belgium [1]	m	53	m	0.6	9 734	m	9 728	m	23	71	6	m	2	m
	Canada	m	7	m	m	m	m	m	m	m	m	m	m	m	m
	Chile [2]	11	63	52	1.0	7 846	8 782	7 812	8 026	99	a	1	17	27	24
	Colombia	m	20	m	0.4	1 623	m	1 450	m	86	3	10	85	25	42
	Costa Rica	74	11	15	m	m	m	m	m	100	a	a	m	m	m
	Czech Republic [2]	a	4	4	0.4	6 818	a	6 818	6 818	11	53	36	a	10	10
	Denmark	15	22	20	0.6	m	22 508	11 431	15 569	0	0	100	24	24	24
	Estonia	x(3)	x(3)	4	0.8	9 889	x(8)	x(8)	9 889	m	a	m	x(14)	x(14)	13
	Finland	24	14	16	0.6	12 718	25 119	12 718	15 022	29	a	71	6	8	8
	France	a	14	14	0.7	9 554	a	9 555	9 555	51	0	49	a	7	7
	Germany	73	65	67	0.6	11 998	19 207	12 000	13 975	0	44	56	13	13	13
	Greece [1]	m	11	m	0.3	6 250	m	6 250	m	100	a	0	m	13	m
	Hungary	18	11	12	0.6	m	7 775	7 818	7 816	68	a	32	x(14)	x(14)	12
	Iceland	21	15	17	1.0	17 146	25 575	17 150	19 899	a	a	100	9	13	11
	Ireland	100	99	99	0.3	m	x(8)	x(8)	4 964	100	a	a	x(14)	x(14)	13
	Israel	100	35	59	0.9	6 088	3 710	6 083	5 224	75	a	25	71	9	25
	Italy	a	28	28	0.6	10 455	a	10 458	10 458	79	4	17	a	15	15
	Japan [3]	a	77	77	m	m	a	8 118	8 118	19	56	24	a	34	34
	Korea [1]	87	75	79	0.5	8 606	m	8 601	m	88	10	2	m	16	m
	Latvia [1]	19	8	10	0.7	6 637	m	6 637	m	13	a	87	m	8	m
	Lithuania	11	5	6	0.6	8 339	8 743	8 339	8 418	40	a	60	18	14	15
	Luxembourg	a	11	11	0.5	21 944	a	21 938	21 938	75	a	25	a	2	2
	Mexico	70	16	18	0.6	2 870	m	m	2 856	m	m	m	x(14)	x(14)	17
	Netherlands	a	28	28	0.4	7 985	a	7 985	7 985	90	0	10	a	15	15
	New Zealand [4]	99	99	99	0.2	m	m	m	m	100	0	0	m	m	m
	Norway	52	49	50	1.0	16 777	30 199	16 777	21 599	0	a	100	13	13	13
	Poland	a	26	26	0.6	8 003	a	8 003	8 003	73	0	26	a	15	15
	Portugal [1]	96	47	62	0.5	8 113	m	8 147	m	79	9	12	m	35	m
	Slovak Republic	a	7	7	0.5	6 623	a	6 623	6 623	11	a	89	a	15	15
	Slovenia	7	5	6	0.6	9 250	12 067	9 249	10 116	7	a	93	23	23	23
	Spain	49	33	37	0.5	7 828	9 596	7 827	8 303	12	79	9	33	16	21
	Sweden	20	18	18	0.9	14 150	20 386	14 150	15 794	m	a	m	6	6	6
	Switzerland [2]	a	5	5	m	m	a	m	m	0	45	55	a	m	m
	Türkiye [1]	100	17	17	0.4	5 017	m	5 075	m	99	a	1	m	19	m
	United Kingdom	m	55	m	m	m	m	m	m	6	a	94	54	38	40
	United States [1]	m	40	m	0.4	10 545	m	10 456	m	22	33	45	m	24	m
	OECD average	53	33	32	0.6	9 458	15 531	9 598	10 724	49	11	40	29	17	18
	EU22 average	41	26	25	0.6	9 876	15 602	9 841	10 729	43	14	43	19	13	13
Partners	**Argentina**	54	30	31	m	m	a	a	a	m	m	m	a	a	a
	Brazil	35	23	28	m	m	m	m	m	m	m	m	m	m	m
	China	a	57	57	m	m	m	m	m	m	m	m	m	m	m
	India	a	22	22	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	47	47	m	m	m	m	m	m	m	m	m	m	m
	South Africa	m	6	m	m	m	m	m	m	m	m	m	m	m	m
	G20 average	62	32	32	m	m	m	m	m	m	m	m	m	m	m

Note: The percentage of children enrolled in private institutions for 2020 is available on OECD.stat. See *Definitions* and *Methodology* sections for more information.
1. Expenditure on all children aged 3 to 5 excludes expenditure and enrolment in ISCED 01 programmes.
2. Year of reference 2018.
3. Data do not cover day care centres and integrated centres for early childhood education and care.
4. Year of reference 2020.

Source: OECD/UIS/Eurostat (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

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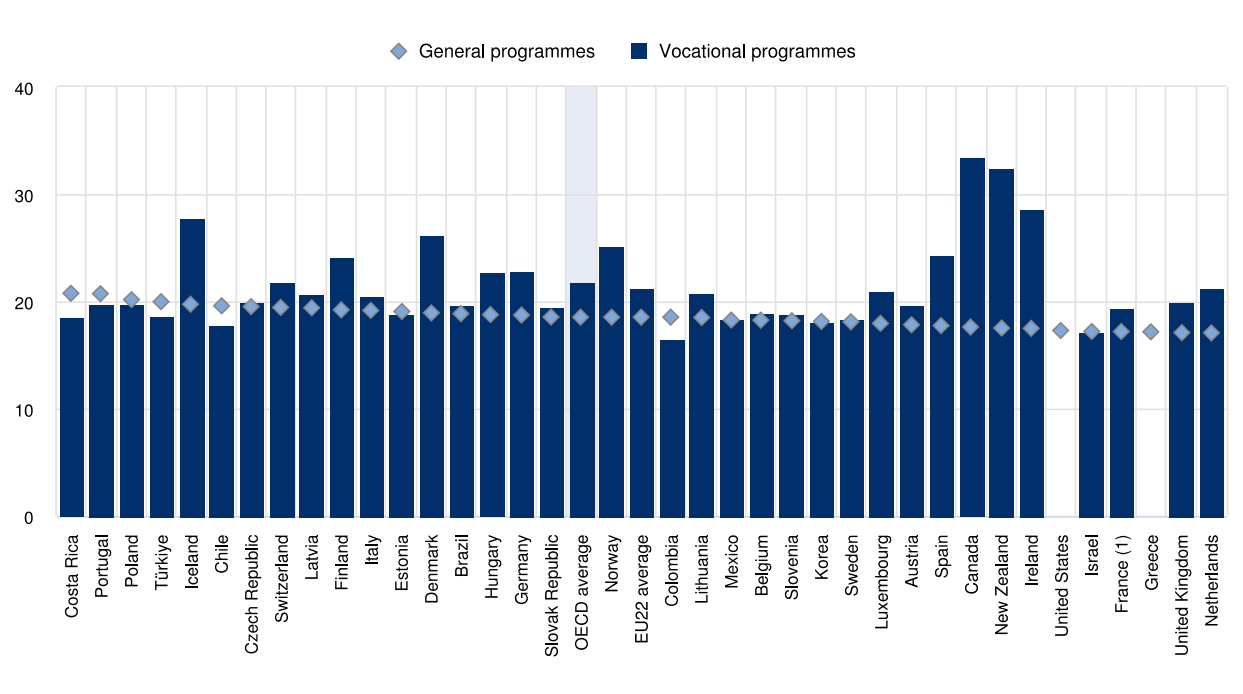
Indicator B3. Who is expected to graduate from upper secondary education?

Highlights

- In almost all countries with available data, the majority of upper secondary graduates from general programmes are women. Men dominate graduation from vocational programmes in almost three-quarters of the countries.
- While the average age of first-time graduates from general upper secondary education does not differ much across countries, the difference widens in vocational education, ranging from 16 to 34 years.
- 76% of upper secondary vocational graduates across OECD countries completed a programme that allows direct access to tertiary education.

Figure B3.1. Average age of first-time upper secondary graduates, by programme orientation (2020)

In years



1. Average age is based on all graduates instead of first-time graduates.

Countries are ranked in descending order of the average age of first-time upper secondary graduates in general programmes.

Source: OECD//Eurostat/UIS (2022), Tables B3.1 and B3.2. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

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Context

Upper secondary education, which in many countries includes separate general and vocational pathways, aims to prepare students to enter further levels of education or the labour market. In many countries, this level of education is not compulsory and programmes typically take two to five years to complete.

Post-secondary non-tertiary education can prepare students for entry into the labour market or, less commonly, for tertiary education. The knowledge, skills and competencies offered tend to be less complex than is characteristic of tertiary education, and not significantly more complex than upper secondary programmes. These programmes have a full-time equivalent duration of between six months and two years.

In most OECD countries, almost all lower secondary students go on to enrol in upper secondary education. In general, demand for upper secondary education is increasing worldwide, with the development of a variety of educational pathways. In fact, 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 increasingly required to adapt to the uncertainties of a rapidly changing global economy.

COVID-19 led to critical disruptions to education across OECD and partner countries. In particular, education systems have had to significantly redesign graduation criteria and examinations to adjust to the unprecedented situation. At the upper secondary level, where examinations are the most common means for certifying that students have met the requirements for completing the level, some flexibility in assessments has been necessary. Some countries have used only school marks as the graduation criteria, some have postponed or rescheduled examinations, and others have awarded students automatic validation of their studies for the academic year (OECD, 2021[1]).

Other findings

- On average across the OECD, one-third of upper secondary vocational students graduated from engineering, manufacturing and construction programmes in 2020.
- Post-secondary non-tertiary programmes are less prominent in the educational landscape than other levels of education. On average across OECD countries, almost one-quarter of graduates in vocational programmes at this level specialised in health and welfare in 2020.
- On average, students who started with a general upper secondary qualification have a higher completion rate at bachelor's level than those who started with a vocational upper secondary qualification.

Analysis

Profile of upper secondary graduates

An upper secondary qualification (ISCED level 3) is often considered to be the minimum credential for successful entry into the labour market and necessary for continuing to higher levels of education. Young people who leave school before completing upper secondary education tend to have worse employment prospects (see Indicators A3 and A4). For many young people, the transition from lower to upper secondary education involves deciding whether to enrol in general education or pursue vocational education and training (VET). The selection process and the factors influencing which programme orientation students enter (e.g. test results, records of academic performance or teacher advice) also vary between countries (OECD, 2016[2]). How much choice young people have in practice therefore differs across countries. An important challenge is to ensure that the decision to pursue a general or a vocational programme is driven by students' interests and abilities, not their personal circumstances, which they cannot influence.

Upper secondary systems in OECD countries take a variety of approaches to occupational preparation. Many countries in Europe, Latin America and South-East Asia have a distinct vocational track or even a multi-track system. The latter often distinguishes between vocational programmes oriented towards traditional occupations (e.g. plumber, hairdresser) and those focused on technical and technological areas (e.g. IT technician, media designer), often designed to prepare for tertiary studies in that area. For example, in addition to general education, Belgium and Slovenia have a vocational and a technical track, while France offers a technological *baccalauréat*. In other countries, occupational preparation at upper secondary level does not take place in a separate vocational track at all. In Canada, upper secondary education remains predominantly general, but students may choose modules offering technical and occupational training. In the United States, students can undertake vocational coursework, but this does not result in a specialised diploma. In other countries where initial upper secondary education includes no or limited vocational content, those who graduate with an upper secondary vocational qualification tend to be adults (OECD, 2022[3]).

In 2020, on average across OECD countries, 37% of those graduating from upper secondary education for the first-time obtained a vocational qualification, ranging from 5% in Canada to 74% in Austria, rising to 44% on average among European countries. Seven other OECD and partner countries besides Canada have 20% or less of their upper secondary graduates obtaining a vocational qualification: Brazil (8%), Costa Rica (20%), Hungary (19%), Iceland (19%), Korea (17%), Lithuania (15%) and New Zealand (14%) (Table B3.2). It is not always the case that vocational tracks are viewed as less attractive options in countries with lower levels of participation (CEDEFOP, 2014[4]). However, in Hungary and Lithuania, evidence suggests that vocational programmes are viewed less positively within society, and are less likely to be considered as providing high-quality learning, than in other European countries (OECD, 2017[5]).

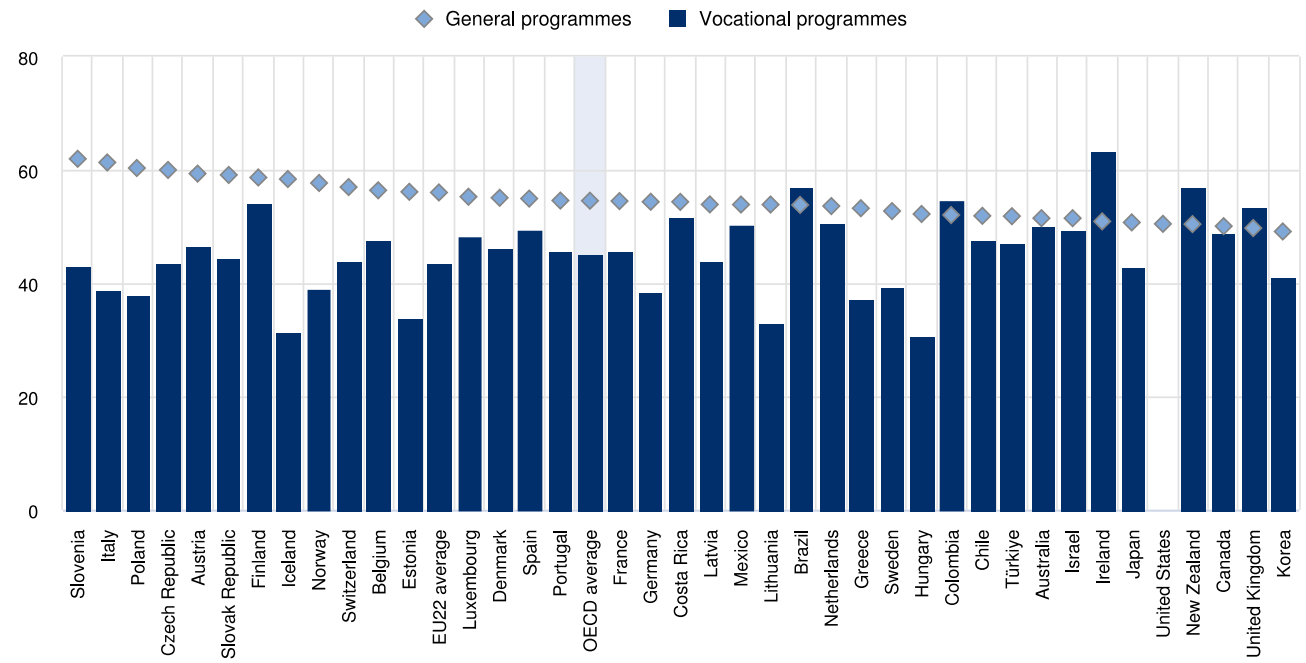
By gender

Effective upper secondary education systems need to offer high-quality learning options to both men and women. Gender imbalances in general or vocational programmes, or in particular fields of study, can raise equity issues. For example, if vocational programmes serve mostly men, women who are less attracted to academic forms of learning might struggle to find a suitable option. Alternatively, if VET offers limited pathways for progression, it may then be more difficult for men to pursue higher levels of education. Indicators in this area are best interpreted together with information on labour-market outcomes from vocational programmes, the progression pathways into higher levels of education, and data on the take up of those pathways.

The gender balance in general and vocational programmes also varies considerably across countries. On average across OECD countries, women made up 55% of upper secondary graduates in general programmes in 2020, compared to 45% in vocational programmes (Figure B3.2). In almost all countries with available data, women make up at least half of upper secondary graduates from general programmes, ranging from 49% in Korea to more than 60% in Italy and Slovenia (Table B3.1). Men dominate graduation from vocational programmes in almost three-quarters of the countries. There is, however, much cross-country variation: the share of women graduating from vocational programmes ranged from 34% or less in Estonia, Hungary, Iceland and Lithuania to more than 60% in Ireland in 2020 (Table B3.2). Ireland was one of just five OECD and partner countries where women made up a larger share of graduates in vocational programmes than in general programmes (13 percentage points). In the other four countries – Brazil, Colombia, New Zealand and the United Kingdom – the difference between the share of women in vocational and general programmes was less than 7 percentage points. In many cases, gender enrolment patterns in vocational programmes are related to the fields of study typically targeted by these programmes.

Figure B3.2. Share of women among upper secondary graduates, by programme orientation (2020)

In per cent



Countries are ranked in descending order of the share of women among upper secondary graduates in general programmes.
Source: OECD//Eurostat/UIS (2022), Tables B3.1 and B3.2. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

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By age

While the average ages of first-time graduates from upper secondary general education do not differ much across countries, the difference widens in vocational education. This reflects the fact that a general upper secondary qualification is typically the final stage of initial schooling. In contrast, a vocational upper secondary qualification may also provide a second-chance opportunity to those who left school without an upper secondary qualification, allowing them to obtain a qualification to improve their employment prospects.

Among OECD countries with available data, the average age for graduation from upper secondary general education is 19 years old, and ranges from 17 to 21 years. Apart from Costa Rica and Portugal, all OECD countries have an average upper secondary graduation age of 20 or younger (Table B3.1). For vocational upper secondary programmes, the average age of first-time graduates varies more widely, ranging from 16 (Colombia) to 34 years (Canada). In countries, where there is little to no vocational education and training in the initial upper secondary education system, upper secondary VET programmes are mostly directed at adults. Canada has the highest average age of first-time vocational upper secondary graduates, as its upper secondary vocational programmes serve adults. Similarly in New Zealand, where the average upper secondary graduation age is 32, programmes at this level include post-schooling study for adults and includes bridging type programmes, “second-chance” or life/employment skills, or basic pre-employment programmes (Table B3.2) (OECD/INES, 2022[6]).

By fields of study

Since vocational programmes are designed to help learners acquire the knowledge and skills needed for particular occupations and trades, the choice of field of study is crucial. Specialising in a particular field in vocational education shapes further learning opportunities and subsequent labour-market outcomes. On average across the OECD, the largest share (33%) of students in upper secondary vocational education graduated from programmes in engineering, manufacturing and construction in 2020. This was followed by business, administration and law (17%), services (17%) and health and welfare (12%). However, this pattern does not hold for every country. In Brazil, Costa Rica, Luxembourg and Switzerland, the most popular upper secondary vocational qualification, among these four fields, was in business, administration and law. In Ireland, the Netherlands, Spain and the United Kingdom, the most popular field was health and welfare, and in Portugal, it was services (Table B3.2).

As with higher levels of education, there are marked gender patterns in choices of fields of study. Women are far more likely than men to study subjects relating to business, administration and law, as well as health and welfare. Men are more likely to choose engineering, manufacturing and construction or information and communication technologies (ICT), which are in great demand in labour markets in OECD countries (Table B3.2) (OECD, 2020[7]). These differences can be attributed to traditional perceptions of gender roles and identities as well as the cultural values sometimes associated with particular fields of education. Some studies have found that these gender differences in the choice of field of study are mirrored in the career expectations of 15-year-olds: on average across OECD countries, only 14% of the girls who were top performers in science or mathematics reported that they expect to work in science or engineering, compared with 26% of the top-performing boys (OECD, 2018[8]).

Few women in upper secondary vocational education pursue programmes in engineering, manufacturing and construction: on average across OECD countries, only 15% of graduates in this field were women in 2020. Colombia was the only country where women represented more than 40% of graduates for the field. In contrast, across OECD countries, female graduates were over-represented in health and welfare (83%); business, administration and law (62%); and services (58%). In health and welfare, women represented 90% or more of graduates in France, Hungary, Latvia and Lithuania (Table B3.2).

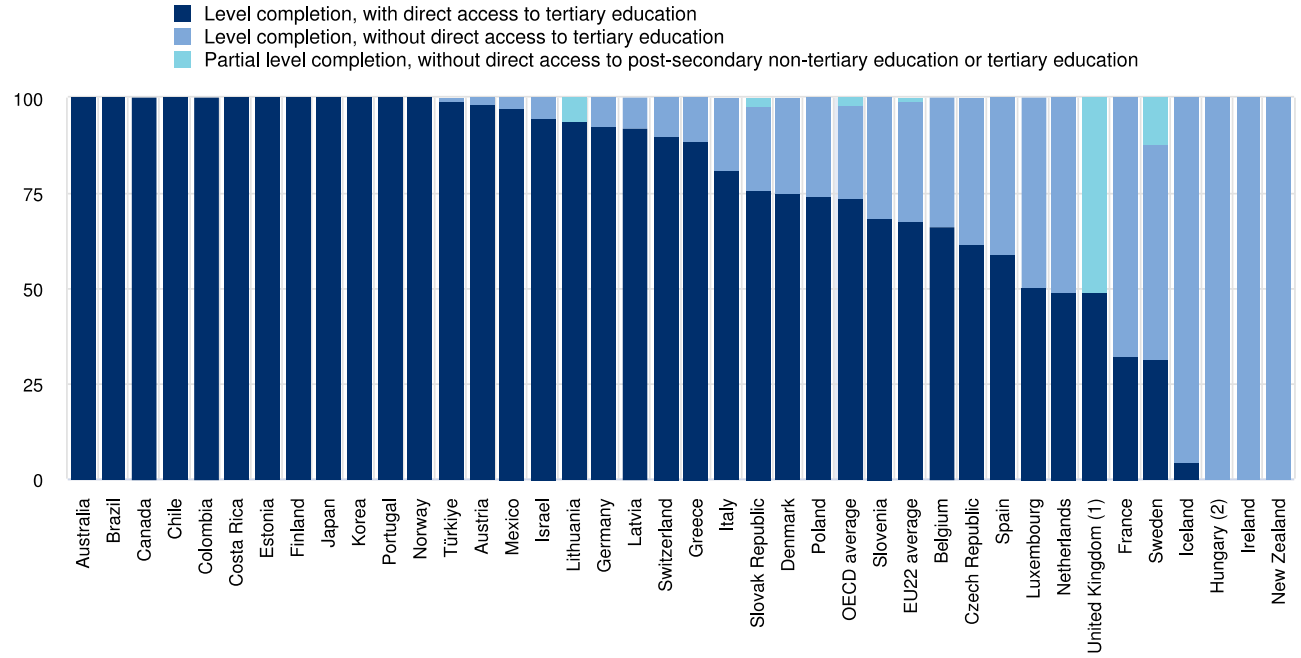
By level of completion

Upper secondary vocational programmes can be classified into three different groups according to the level of completion possible: partial completion without direct access to tertiary education; level completion without direct access to tertiary education; and level completion with direct access to tertiary education. The first category, partial completion, includes programmes that are part of a sequence of programmes at ISCED level 3 but are not the final programmes at this level, and do not provide direct access to higher ISCED levels. Such programmes are uncommon in OECD countries, with graduates reported only in Lithuania, the Slovak Republic, Sweden and the United Kingdom (Figure B3.3). Examples include intermediate upper secondary programmes in the United Kingdom, where most graduates progress on to further programmes that do provide full completion of upper secondary education with direct access to tertiary education. Even students who do not progress to programmes offering full level completion can use their intermediate qualification as part of an application to higher education (UCAS, 2021[9]). Similarly, in Sweden this category includes introductory programmes in upper secondary schools, which serve as a bridge between lower secondary and upper secondary education.

Programmes in the second category, level completion without direct access to tertiary education, tend to have a strong focus on preparation for labour-market entry. This category includes programmes leading to a *certificate d'aptitude professionnelle* (CAP) or a *brevet professionnel* in France, Leaving Certificate Applied Programmes in Ireland or one-year National Certificate of Educational Achievement (NCEA 1) qualifications in New Zealand. The lack of direct access to tertiary education does not make these programmes a dead end. Programmes within this category may provide direct access to post-secondary non-tertiary education (ISCED level 4). In addition, graduates often have other access routes to tertiary education. For example, in Sweden, 69% of upper secondary vocational graduates completed a programme without direct access to tertiary education. However, students have the option to take additional general subjects while pursuing their vocational programme, in order to gain eligibility for tertiary education. In New Zealand those who complete NCEA 1 programmes commonly progress to NCEA 2 or 3 qualifications, which in turn provide access to tertiary education. More broadly, in several OECD countries there are bridging programmes (at ISCED level 3 or 4) that allow vocational graduates to obtain a qualification that provides direct access to tertiary education.

Figure B3.3. Distribution of vocational upper secondary graduates, by level of completion (2020)

In per cent



1. Most of the students who complete intermediate upper secondary programmes that do not give direct access to tertiary education will move to programmes that provide full completion of upper secondary with direct access to tertiary education.
2. Vocational programmes with direct access to tertiary education at upper secondary level are included with the same type of programmes at post-secondary tertiary level.
Countries are ranked in descending order of the share of graduates of programmes with direct access to tertiary education.
Source: OECD/Eurostat/UIS (2022), Table B3.2. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

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Across OECD countries, 76% of vocational graduates across OECD countries completed a programme that allows direct access to tertiary education. In 11 countries, all vocational graduates completed such programmes, and in almost all remaining OECD countries the majority of upper secondary vocational graduates have direct access to tertiary education (Figure B3.3). However, this does not necessarily mean that VET graduates have the same options available to them as general upper secondary graduates. While in many countries the qualification required for tertiary education yields access to all types of education, in some countries, there is a more nuanced set of arrangements. For example, in Germany, graduates from vocational ISCED level 3 programmes have direct access to professional tertiary programmes after relevant professional experience but in order to access academic tertiary programmes, they need either technically compatible professional practices and the completion of an aptitude test or obtain a professional tertiary qualification first. In Denmark, upper secondary vocational graduates have direct access to business academy programmes (ISCED level 5) and some professional bachelor's programmes. They do not have direct access to academic bachelor's programmes, but professional programmes may serve as a bridge to master programmes (OECD, 2022[10]).

Profile of post-secondary non-tertiary graduates

Post-secondary non-tertiary programmes (ISCED level 4) are relatively less prominent in the educational landscape than other levels of education. Eight OECD countries do not have these programmes at all (Chile, Costa Rica, Korea, Mexico, the Netherlands, Slovenia, the Republic of Türkiye and the United Kingdom) and three others (Colombia, Israel and Switzerland) do not offer vocational programmes at this level of education (Table B3.3). In the countries that do, various kinds

of post-secondary non-tertiary programmes are available. These programmes straddle upper secondary and post-secondary education and may be considered either as upper secondary or as post-secondary programmes, depending on the country. Although the content of these programmes may not be significantly more advanced than upper secondary programmes, they broaden the knowledge of individuals who have already attained an upper secondary qualification.

Post-secondary non-tertiary programmes may be designed to increase participants' labour-market options or to increase their eligibility for further studies at the tertiary level, or both. Examples of such programmes include technicians' diplomas, primary professional education or *préparation aux carrières administratives* (OECD/Eurostat/UNESCO, 2015[11]).

By programme orientation and level of completion

On average across OECD countries, 88% of post-secondary non-tertiary first-time graduates attended vocational programmes (Table B3.3). This level of education is particularly vocationally focused, as most post-secondary non-tertiary programmes are designed for direct entry into the labour market. There are some national initiatives to provide general programmes at post-secondary non-tertiary level aimed at students who have completed vocational upper secondary education and want to increase their chances of entering tertiary education. For instance, in Switzerland, a one-year general programme, the university aptitude test, prepares graduates from vocational upper secondary education (after successful completion of the federal vocational baccalaureate) to enter general programmes at the tertiary level (OECD/Eurostat/UNESCO, 2015[11]).

Although post-secondary non-tertiary vocational education is designed to prepare students for entry into the labour market, it should not lock participants out of further learning options. In half of the 25 OECD and partner countries with data on this level, all or most students graduated from post-secondary non-tertiary vocational programmes that yield direct access tertiary education (or they might already be eligible thanks to their upper secondary qualification). In eight other countries, a majority of students graduated from post-secondary non-tertiary programmes with a focus on occupational skills, which are designed for direct entry into the labour market. The remaining countries offer a more mixed profile of programmes, some of which are designed to lead to further study and some of which are not (Table B3.3).

By field of study

On average across OECD countries, 23% of post-secondary non-tertiary graduates in vocational programmes specialised in health and welfare; 21% in engineering, manufacturing and construction; 18% in business, administration and law; and 17% in services in 2020. However, there were considerable variations across countries. In Luxembourg, for instance, 67% of post-secondary non-tertiary graduates obtained a qualification in engineering, manufacturing and construction whereas in Austria, France and Poland this field accounted for 1% of graduates or less (Table B3.3).

On average across OECD countries, women made up 53% of post-secondary non-tertiary vocational graduates in 2020, but there were significant variations across countries, ranging from 24% in Luxembourg to 75% in Poland. This contrasts with the under-representation of women in upper secondary vocational education. There are two main reasons for the difference in gender balance. First, women in upper secondary vocational education have a higher completion rate than men and are therefore more likely to continue their studies in post-secondary non-tertiary education. Second, women are over-represented in certain broad fields of study, such as health and welfare, and business, administration and law, which are among the fields more commonly studied by post-secondary non-tertiary graduates (Table B3.3).

The share of female graduates from post-secondary non-tertiary vocational programmes is the largest in the field of health and welfare (80% in 2020); followed by business, administration and law (65%); services (55%); and engineering, manufacturing and construction (18%). In the field of health and welfare, women make up at least 70% of graduates in all countries with available data. In services, the share of female graduates varies more widely compared to other fields, ranging from 12% in Denmark to 74% in Latvia and Spain. Even so, women make up more than half of post-secondary non-tertiary vocational graduates in all but six countries in the field of services (Table B3.3).

By age

The average age of first-time graduates from post-secondary non-tertiary education is quite high compared to upper secondary graduates. On average, students graduated from post-secondary non-tertiary programmes at the age of 31 years across the OECD, with the average age ranging from 22 years in Belgium to 42 years in Finland. The average age of graduation was over 30 in all but eight countries (Table B3.3).

The comparatively high age of graduation may be due to the particular programmes offered at post-secondary non-tertiary level. They may tend to attract older individuals with some years of experience in the labour market already, either because work experience is typical for entry to the profession or because these programmes can facilitate a career change into a specific profession. For instance, in Finland, post-secondary non-tertiary programmes with direct access to tertiary education are taken usually after several years of work experience. In Norway, post-secondary non-tertiary education is provided through 6-18-month programmes designed to meet a number of specialised vocational needs and for direct entry into the labour market, and the average age of graduates was 34 years in 2020. In Portugal, special accommodation is made for older adults with related professional experience in the certification of post-secondary non-tertiary education. Adults over the age of 25 who have worked for at least five years in relevant fields can request the assessment of their professional skills by training institutions in order to obtain a technological specialisation diploma (Eurydice, 2021[12]), which can partly explain why the average age of first-time graduates is 30 years old (Table B3.3).

Box B3.1. Bachelor's completion rate by upper secondary programme orientation

Creating strong pathways from upper secondary into tertiary education requires building suitable access routes and ensuring that students are well prepared for further studies. While general upper secondary programmes, by definition, are designed to equip students with the skills needed for post-secondary and tertiary education, vocational programmes tend to vary in their emphasis on preparation for further studies. This means that some vocational graduates may be poorly prepared to complete their tertiary programme. On the other hand, VET graduates may have an advantage over their peers from general education: when pursuing studies within the same field as their vocational qualification and, in some cases, where they have relevant work experience, they might be particularly well prepared and motivated to succeed in their studies.

On average, 41% of bachelor's students who started with a general upper secondary qualification graduate within the theoretical duration of the programme. For those with a vocational upper secondary qualification the figure is 36%. This five percentage-point gap increases to 14 percentage points when comparing completion rates after three additional years following the end of the programme's theoretical duration (Figure B3.4).

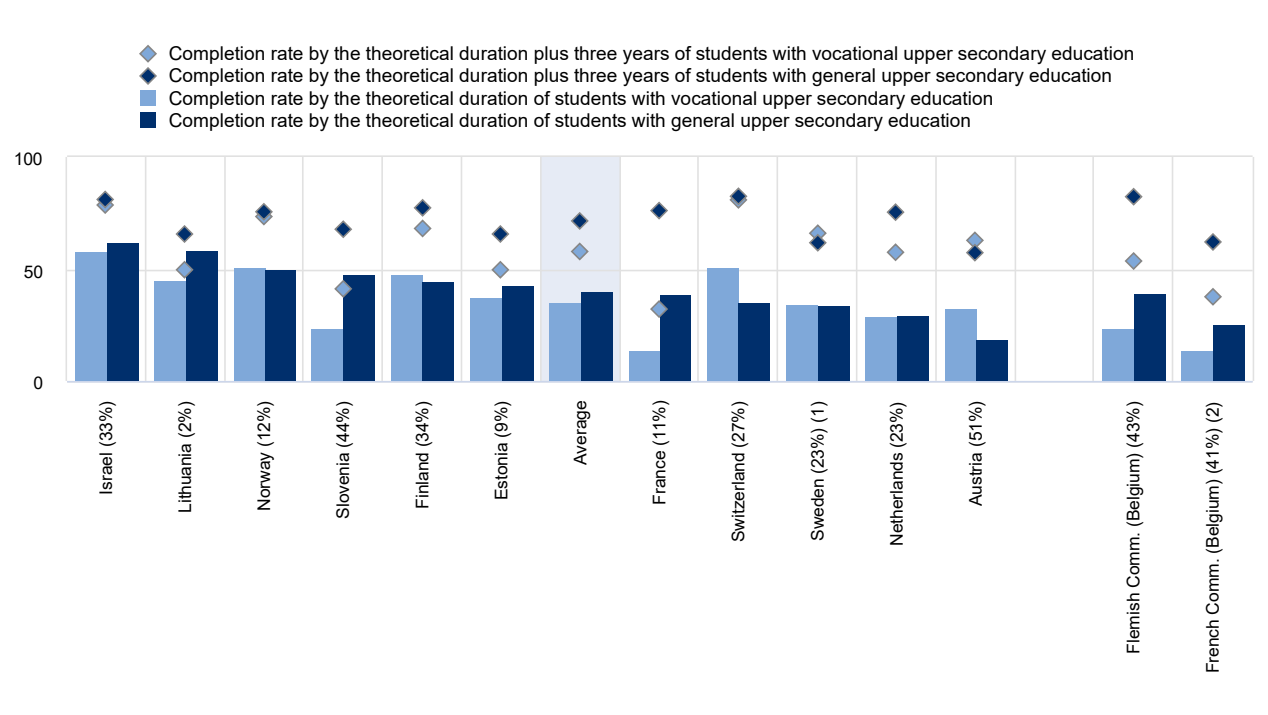
The pattern of completion rates within the theoretical duration varies widely across countries: students from general programmes have a higher completion rate than those with a vocational background in half of the countries with available data. However, the pattern becomes clearer when looking at completion rates after three additional years. Within this longer timeframe, completion rates of students with general upper secondary qualifications are either higher or very similar to those of students with vocational qualifications in nearly all countries. In fact, only in two countries – Austria and Sweden – are bachelor's students from vocational upper secondary programmes more likely to graduate than their peers who attended general programmes (Figure B3.4).

An important part of the context is the share of bachelor's students who have a vocational background. For example, in Lithuania, 45% of students from vocational upper secondary programmes graduate within the theoretical duration of the programme in which they entered. However, these students represent only around 2% of entrants into bachelor's programmes. A number of factors may explain the low share of VET graduates among bachelor's students. In some countries, such as Norway, only general upper secondary programmes grant direct access to ISCED level 6 or equivalent, with few exceptions. Similarly, in Estonia some upper secondary vocational programmes do not grant access to bachelor's programmes. The data also refer to full-time students, so do not fully capture participation patterns in countries where VET graduates commonly pursue ISCED 6 programmes part-time.

In Austria, in contrast, a large share of bachelor level students have a vocational background and their completion rates are higher than for those with general upper secondary education. This reflects Austria's large upper secondary VET system, in which there is a strong progression pathway from upper secondary education (year 1-3 of *Berufsbildende Höhere Schulen*, BHS) into short-cycle tertiary programmes (year 4-5 of BHS) and universities of applied sciences, as well as to universities though to a lesser extent.

Figure B3.4. Completion rates of full-time students who entered a bachelor's or equivalent level, by students' upper secondary programme orientation and timeframe (2020)

In per cent



Note: The share of students who graduated from vocational upper secondary programmes are shown in parentheses next to each country name. The year of reference for the data (2020) corresponds to the graduation year three years after the theoretical duration of the programme (2017). The reference year for students' entry may differ depending on the duration of programmes.
1. Data are provided for the theoretical duration of the programme plus one semester (not the theoretical duration) in Sweden.
2. Data refer only to the *hautes écoles* (HE) and the *écoles des arts* (ESA), representing about 60% of entrants to bachelor's or equivalent programmes.
Countries are ranked in descending order of the completion rate by the theoritical duration of students with general upper secondary education.
Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

StatLink https://stat.link/okqfi5

Definition

Typical age is the age at the beginning of the last school/academic year of the corresponding educational level and programme when the degree is obtained.

Methodology

The average age of students is calculated from 1 January for countries where the academic year starts in the second semester of the calendar year and 1 July for countries where the academic year starts in the first semester of the calendar year. As a consequence, the average age of new entrants may be overestimated by up to six months, while that of first-time graduates may be underestimated by the same.

For more information, please see the *OECD Handbook for Internationally Comparative Education Statistics* (OECD, 2018[13]).

Source

Data refer to the academic year 2019/20 and are based on the OECD/UIS/Eurostat data collection on education statistics administered by the OECD in 2021 (for details, see Annex 3 at https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

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Indicator B3 tables

Tables Indicator B3. Who is expected to graduate from upper secondary education?

Table B3.1	Profile of upper secondary graduates from general programmes (2020)
Table B3.2	Profile of upper secondary graduates from vocational programmes (2020)
Table B3.3	Profile of post-secondary non-tertiary graduates from vocational programmes (2020)

StatLink https://stat.link/2yn7ec

Cut-off date for the data: 17 June 2022. Any updates on data can be found on line at: http://dx.doi.org/10.1787/eag-data-en. More breakdowns can also be found at http://stats.oecd.org, *Education at a Glance Database*.

Table B3.1. Profile of upper secondary graduates from general programmes (2020)

		Percentage of first-time graduates who obtained a general qualification	Average age of first-time graduates	Share of female graduates	Distribution of graduates by level of completion		
					Partial level completion, without direct access to post-secondary non-tertiary education or tertiary education	Level completion, without direct access to tertiary education	Level completion, with direct access to tertiary education
		(1)	(2)	(3)	(4)	(5)	(6)
OECD	Countries						
	Australia	m	m	51	a	a	100
	Austria	26	18	59	a	3	97
	Belgium	48	18	56	a	a	100
	Canada	95	18	50	a	a	100
	Chile	71	20	52	a	a	100
	Colombia	76	19	52	a	a	100
	Costa Rica	80	21	54	a	a	100
	Czech Republic	31	20	60	a	a	100
	Denmark	77	19	55	a	a	100
	Estonia	79	19	56	a	a	100
	Finland	49	19	59	a	a	100
	France [1]	m	17	55	a	a	100
	Germany	53	19	54	a	a	100
	Greece	73	17	53	a	a	100
	Hungary	81	19	52	a	a	100
	Iceland	81	20	58	a	3	97
	Ireland	m	17	51	a	5	95
	Israel	59	17	51	0	8	91
	Italy	44	19	61	a	a	100
	Japan	78	m	51	a	a	100
	Korea	83	18	49	a	a	100
	Latvia	74	19	54	a	a	100
	Lithuania	85	19	54	a	a	100
	Luxembourg	40	18	55	a	a	100
	Mexico	66	18	54	a	a	100
	Netherlands	49	17	54	a	a	100
	New Zealand	86	18	50	a	a	100
	Norway	67	19	58	a	0	100
	Poland	53	20	60	a	a	100
	Portugal	66	21	55	a	a	100
	Slovak Republic	32	19	59	a	a	100
	Slovenia	33	18	62	a	a	100
	Spain	65	18	55	a	a	100
	Sweden	68	18	53	8	a	92
	Switzerland	33	19	57	a	a	100
	Türkiye	58	20	52	a	a	100
	United Kingdom [2]	35	17	50	73	a	27
	United States	100	17	50	a	a	100
	OECD average	63	19	55	2	1	97
	EU22 average	56	19	56	0	0	99
Partners	Argentina	m	m	m	m	m	m
	Brazil	92	19	54	a	a	100
	China	m	m	m	m	m	m
	India	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m
	G20 average	m	m	m	m	m	m

Note: See *Definitions* and *Methodology* sections for more information. Data and more breakdowns available at http://stats.oecd.org, *Education at a Glance Database*.
1. Average age is based on all graduates instead of first-time graduates.
2. Most of the students who complete intermediate upper secondary programmes that do not give direct access to tertiary education will move to programmes that provide full completion of upper secondary with direct access to tertiary education.
Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

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Table B3.2. Profile of upper secondary graduates from vocational programmes (2020)

		Percentage of first-time graduates who obtained a vocational qualification	Average age of first-time graduates	Share of female graduates	Distribution of graduates by level of completion			Distribution of graduates by field of study				Share of female graduates by field of study			
					Partial level completion, without direct access to post-secondary non-tertiary education or tertiary education	Level completion, without direct access to tertiary education	Level completion, with direct access to tertiary education	Business, administration and law	Engineering, manufacturing and construction	Health and welfare	Services	Business, administration and law	Engineering, manufacturing and construction	Health and welfare	Services
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
OECD	Countries														
	Australia	m	31	50	a	a	100	18	31	24	14	62	10	84	60
	Austria	74	20	47	a	2	98	28	34	5	18	64	14	79	73
	Belgium	52	19	48	a	33	67	m	m	m	m	51	25	89	55
	Canada	5	34	49	a	a	100	m	m	m	m	m	m	m	m
	Chile	29	18	48	a	a	100	29	46	6	4	61	28	81	61
	Colombia	24	16	55	a	a	100	m	m	m	m	61	44	a	a
	Costa Rica	20	19	52	a	a	100	45	22	0	11	67	39	a	55
	Czech Republic	69	20	44	a	38	62	16	40	7	18	63	12	89	63
	Denmark	23	26	46	a	25	75	22	36	21	13	66	12	89	46
	Estonia	21	19	34	a	a	100	1	51	0	26	96	20	a	66
	Finland	51	24	54	a	a	100	20	24	21	20	66	19	85	56
	France [1]	m	19	46	a	68	32	22	36	17	19	60	12	90	59
	Germany	47	23	38	a	7	93	32	36	11	13	54	11	83	42
	Greece	27	m	37	a	11	89	8	37	27	9	57	9	78	45
	Hungary [2]	19	23	31	a	100	x(5)	9	53	4	29	71	8	90	48
	Iceland	19	28	31	a	96	4	0	56	8	22	67	8	89	52
	Ireland [1]	m	29	64	a	100	a	16	2	37	10	65	13	84	55
	Israel	41	17	50	a	5	95	19	25	3	5	68	26	73	51
	Italy	56	21	39	a	19	81	21	33	5	27	47	23	74	51
	Japan	22	m	43	a	a	100	m	m	m	m	62	12	85	81
	Korea	17	18	41	a	a	100	27	44	3	6	74	12	78	72
	Latvia	26	21	44	a	8	92	13	35	0	25	72	11	92	70
	Lithuania	15	21	33	6	a	94	11	49	0	28	53	4	100	77
	Luxembourg	60	21	48	a	50	50	27	22	9	8	62	12	81	58
	Mexico	34	18	50	a	3	97	m	m	m	m	m	m	m	m
	Netherlands	51	21	51	a	51	49	17	18	25	23	51	9	88	48
	New Zealand	14	32	57	a	100	a	15	20	10	15	65	13	86	61
	Norway	33	25	39	a	0	100	7	41	27	17	70	8	81	38
	Poland	47	20	38	a	26	74	12	39	0	24	60	13	73	72
	Portugal	34	20	46	a	a	100	14	16	14	28	63	13	88	52
	Slovak Republic	68	20	45	2	22	76	14	40	9	22	70	11	83	64
	Slovenia	67	19	43	a	32	68	12	38	12	15	61	13	75	62
	Spain	35	24	50	a	41	59	12	15	18	14	58	9	80	40
	Sweden	32	18	40	12	57	31	9	44	19	18	56	8	71	62
	Switzerland	67	22	44	a	10	90	32	31	17	9	55	12	87	51
	Türkiye	42	19	47	a	1	99	11	23	21	7	48	10	77	56
	United Kingdom [3]	65	20	54	51	a	49	10	7	16	12	54	7	82	53
	United States	a	a	a	a	a	a	a	a	a	a	a	a	a	a
	OECD average	37	22	45	2	24	76	17	33	12	17	62	15	83	58
	EU22 average	44	21	44	1	31	71	16	33	12	19	62	13	84	57
Partners	Argentina	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Brazil	8	20	57	a	a	100	27	16	11	3	61	35	85	62
	China	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	G20 average	m	m	m	m	m	m	m	m	m	m	m	m	m	m

Note: See *Definitions* and *Methodology* sections for more information. Data and more breakdowns available at http://stats.oecd.org, *Education at a Glance Database*.
1. Average age is based on all graduates instead of first-time graduates.
2. Vocational programmes with direct access to tertiary education at upper secondary level are included with the same type of programmes at post-secondary tertiary level.
3. Most of the students who complete intermediate upper secondary programmes that do not give direct access to tertiary education will move to programmes that provide full completion of upper secondary with direct access to tertiary education.
Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

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Table B3.3. Profile of post-secondary non-tertiary graduates from vocational programmes (2020)

		Percentage of first-time graduates who obtained a vocational qualification	Average age of first-time graduates	Share of female graduates	Distribution of graduates by level of completion		Distribution of graduates by field of study				Share of female graduates by field of study			
					Level completion, without direct access to tertiary education	Level completion, with direct access to tertiary education	Business, administration and law	Engineering, manufacturing and construction	Health and welfare	Services	Business, administration and law	Engineering, manufacturing and construction	Health and welfare	Services
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
OECD	Countries													
	Australia	100	34	54	a	100	25	11	19	12	58	12	71	56
	Austria	100	33	74	35	65	8	0	63	1	57	0	77	64
	Belgium	100	22	52	2	98	m	m	m	m	63	0	85	36
	Canada	m	m	m	m	m	m	m	m	m	m	m	m	m
	Chile	a	a	a	a	a	a	a	a	a	a	a	a	a
	Colombia [1]	a	a	a	a	a	a	a	a	a	a	a	a	a
	Costa Rica	a	a	a	a	a	a	a	a	a	a	a	a	a
	Czech Republic	48	m	48	51	49	m	m	m	m	m	m	m	m
	Denmark	100	38	31	a	100	m	m	m	m	37	0	40	12
	Estonia	100	32	70	a	100	46	12	1	27	89	33	64	64
	Finland	100	42	59	a	100	47	29	10	9	53	61	84	58
	France	m	m	m	m	m	10	1	13	3	62	55	75	24
	Germany	94	24	60	42	58	20	19	48	7	64	16	79	60
	Greece	100	30	55	100	a	7	14	30	36	69	8	77	57
	Hungary [2]	100	24	53	a	100[d]	16	22	21	18	80	9	82	62
	Iceland	77	34	30	92	8	9	55	0	15	59	6	a	60
	Ireland [3]	m	29	42	100	a	8	38	26	6	63	0	95	46
	Israel [1]	m	a	a	a	a	a	a	a	a	a	a	a	a
	Italy	100	24	43	0	100	m	m	m	m	59	34	a	59
	Japan	m	m	m	m	m	m	m	m	m	m	m	m	m
	Korea	a	a	a	a	a	a	a	a	a	a	a	a	a
	Latvia	100	31	71	100	a	10	16	28	26	73	25	87	74
	Lithuania	100	29	49	a	100	20	27	17	22	54	10	85	67
	Luxembourg	100	31	24	100	a	0	67	0	13	a	11	a	73
	Mexico	a	a	a	a	a	a	a	a	a	a	a	a	a
	Netherlands	a	a	a	a	a	a	a	a	a	a	a	a	a
	New Zealand	85	32	44	51	49	20	29	17	19	61	6	79	60
	Norway	100	34	72	a	100	22	5	40	13	79	15	92	41
	Poland	100	31	75	100	a	15	0	39	28	75	29	83	66
	Portugal	100	30	30	a	100	14	40	0	18	69	11	a	52
	Slovak Republic	100	29	55	a	100	15	15	16	35	60	10	86	37
	Slovenia	a	a	a	a	a	a	a	a	a	a	a	a	a
	Spain	100	38	64	100	a	33	8	30	12	73	42	71	74
	Sweden	94	34	65	89	11	16	19	29	10	77	24	94	51
	Switzerland	a	a	a	a	a	a	a	a	a	a	a	a	a
	Türkiye	a	a	a	a	a	a	a	a	a	a	a	a	a
	United Kingdom	a	a	a	a	a	a	a	a	a	a	a	a	a
	United States	100	m	57	a	100	11	20	29	17	63	8	85	65
	OECD average	88	31	53	40	60	18	21	23	17	65	18	80	55
	EU22 average	96	31	54	43	57	18	21	23	17	65	20	79	55
Partners	Argentina	m	m	m	m	m	m	m	m	m	m	m	m	m
	Brazil	100	29	57	100	a	31	19	32	7	59	13	83	58
	China	m	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m	m	m	m	m	m	m	m
	G20 average	m	m	m	m	m	m	m	m	m	m	m	m	m

Note: See *Definitions* and *Methodology* sections for more information. Data and more breakdowns available at http://stats.oecd.org, Education at a Glance Database.
1. Programmes with direct access to tertiary education at post-secondary non-tertiary level include the same type of programmes at upper secondary level.
2. Average age is based on all graduates instead of first-time graduates.
3. Post-secondary non-tertiary programmes exist in the country.
Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

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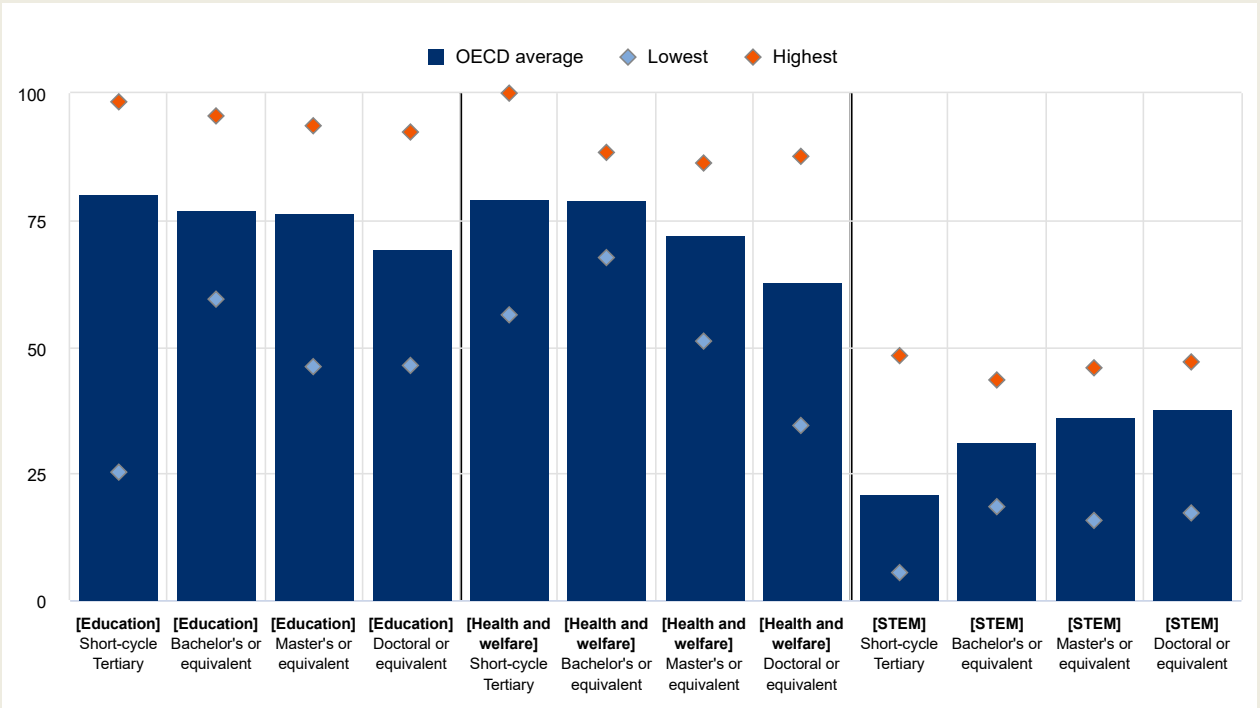
Indicator B4. Who is expected to enter tertiary education?

Highlights

- On average across OECD countries, women are under-represented in science, technology, engineering and mathematics (STEM) fields of study and over-represented in the fields of health and welfare and education across all tertiary levels.
- Despite the clear need for information and communication technologies (ICT) skills, as highlighted by the pandemic, the field of ICT continues to attract a small share of students: only 6% of new entrants to tertiary programmes were ICT students on average across OECD countries in 2020.
- In contrast to lower levels of tertiary education, doctoral candidates tend to specialise heavily in STEM-related fields of study: 38% of new doctoral entrants chose STEM fields on average across OECD countries in 2020.

Figure B4.1. Share of women among new entrants to tertiary education, by level of education and selected fields of study (2020)

In per cent



Note: STEM refers to the fields of science, technology, engineering and mathematics.
Source: OECD (2022), Tables B4.3. See Source section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

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Context

Participation in tertiary education plays an essential role in developing young adults' skills so they contribute fully to society. Yet students' profiles and academic aptitudes can be very diverse, as can the pathways into tertiary education. While it is common in some countries for students to enter tertiary education directly after their upper secondary programme, in others students often postpone entry to higher education, take a gap year or alternate periods of employment with periods of study. Attractive employment opportunities and burgeoning economies have prompted young people in some countries to defer education in favour of learning in the workplace, particularly when financial support for further study is limited. Lifelong learning has also long been envisaged as the guiding policy framework for OECD education systems, enabling individuals to continually update their skills to meet volatile and constantly evolving market demand (OECD, 2001[1]).

To address the growing needs of a diverse population, some countries have progressively adapted their tertiary-level programmes to ensure more learning flexibility to suit a wide range of students' skills and learning aptitudes. This includes building more pathways between upper secondary and tertiary programmes, including those with a vocational orientation, and expanding the types of programmes available to first-time tertiary students: short-cycle tertiary programmes, bachelor's programmes or long first degrees at master's level. Flexible entrance criteria can support lifelong learning and second-chance programmes can offer new opportunities to older students who might have dropped out of the education system or for those who wish to develop new skills. Providing a range of educational options adapted to the needs and ambitions of young adults also ensures a smoother transition from education to work.

Analysing how new entrants are distributed among different fields of education allows policy makers to understand how their students are choosing between different professional paths and to plan specific actions to combat future shortages in some professional occupations. The COVID-19 crisis has highlighted the importance of preparing health professionals to provide care when they are most needed, and thereby monitoring the share of students entering health and welfare (often regulated by *numerus clausus* policies), whether these students graduate from the same field of study, and flows of healthcare professionals (OECD, 2016[2]). Entrants to doctoral programmes are also of particular interest, as these graduates are often innovating and advancing societal knowledge, something that is fundamental in the knowledge-based societies of the 21st century (OECD, 2019[3]).

The COVID-19 pandemic had a wide and immediate impact on higher education, forcing institutions to make an urgent transition to distance learning. Higher education institutions and policy makers had to respond immediately to ensure continuity of learning, which led to a dramatic change in the experience of both educators and learners. The extent to which the pandemic has affected entry into tertiary education and international student flows over the 2020/21 academic year is still uncertain. While some countries seem to be facing increases in student numbers, others are facing a drop in enrolment.

Other findings

- The share of entrants who moved directly from upper secondary to tertiary education without any significant break varies considerably across countries. Over 90% of those who enter bachelor's programmes in the United States do so right after upper secondary education, compared to only 5% of entrants in Israel, where military service at the age of 18 is mandatory.
- The likelihood that students will ultimately follow a different pathway than the one they set out on can differ substantially according to the field of study: less than 50% of bachelor's students who started a full-time course in ICT went on to graduate from the same field, while the share is 74% for health and welfare on average across countries with available data.

Note

Short-cycle tertiary and master's long first degree (LFD) programmes may not exist or be very rare in a number of educational systems. To ensure relevant cross-country comparisons, the analysis of the distribution of new or first-time entrants by gender, field of study or mobility at these levels of education only includes countries where at least 10% of new or first-time tertiary entrants are enrolled in such programmes.

Analysis

Profile of new entrants into tertiary education

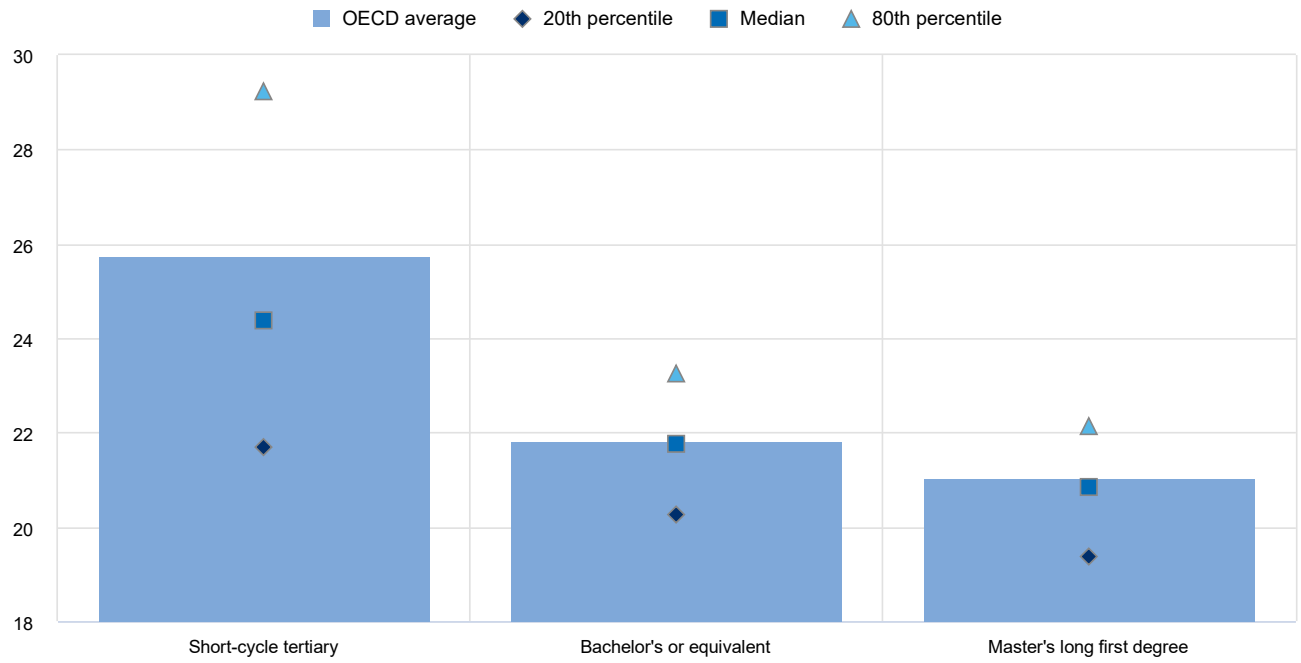
Tertiary education is the most flexible and diverse level of education today with a vast array of programmes on offer, from research-oriented degrees that prepare students for doctoral studies and academia, to professional courses that provide students with practical skills to enter the labour market more directly. Over the past decade, increasing proportions of adult populations across the OECD have attained a tertiary level of education. As a non-compulsory level of education, however, there are a variety of different pathways for those who wish to pursue further education after secondary school and students may engage in other personal or professional activities before their transition to tertiary education (Box B4.1).

Age distribution

The average age at entry into tertiary programmes varies depending on the level of the programme and the student profile that it is intended to attract. Students may enter tertiary education at three levels: short-cycle tertiary (ISCED level 5), bachelor's (ISCED level 6) or master's level in long first degree programmes (ISCED level 7 LFD). In 25 out of 34 countries, the average age at entry decreases as the level of education entered increases. On average, students start master's LFDs at the age of 21, although the average age for bachelor's programmes is only slightly higher at 22 years. Meanwhile, the age of new entrants to short-cycle tertiary programmes is considerably higher, averaging 26 years across the OECD (Table B4.1).

Figure B4.2. Average age dispersion of new entrants, by level of education (2020)

OECD aggregate data, in years



Source: OECD (2022), Tables B4.1. See Source section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

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However, there are large disparities in the average age of entrants across countries. The average age of new entrants to bachelor's programmes varies from 19 in Belgium, Japan and Korea to 25 in Denmark and Sweden. For students in master's LFD programmes, there is a similar range in average ages from 19 in Chile, Italy, Japan, Portugal, Slovenia and Türkiye to

24 in Switzerland and 26 in Sweden. For short-cycle tertiary programmes, the differences are much wider, varying from 20 years old in France and Mexico to 34 in Ireland and 40 in Poland (Table B4.1).

The higher average age of entry to short-cycle tertiary can be explained by the fact that there are often more students entering adult education programmes at this level than at others. For example, in Denmark, 27% of students in short-cycle tertiary education are enrolled in *Akademiuddannelser*, an adult education programme that requires at least two years of professional experience to enter. In comparison, a much larger share of bachelor's students in Denmark are enrolled in initial education and only 9% are enrolled in an adult education programme, the *Diplomuddannelser*, which also requires at least two years of relevant work experience. Meanwhile in Austria, at bachelor's level there are only initial education programmes, whereas several short-cycle programmes are classified as adult education, such as the *Berufsbildende höhere Schule für Berufstätige* and the *Werkmeister- und Bauhandwerkerschule*.

The spread of ages of new entrants to short-cycle tertiary programmes is also considerably wider than those of new entrants to bachelor's level or master's LFD programmes. In short-cycle tertiary education, the average age of students at the 20th percentile was just under 22 years in 2020, compared slightly over 29 years at the 80th percentile, a spread of over 8 years. In contrast, the spread of average ages of new entrants to bachelor's programmes was exactly 3 years, while the spread of average ages in master's LFD programmes was slightly under that (Figure B4.2). This reflects the fact that bachelor's and master's LFD programmes tend to be initial education courses, which are designed to be completed before young people's first entry to the labour market.

Box B4.1. Direct versus delayed entry to tertiary education

The growing flexibility of tertiary educational systems is reflected in the increasing availability of new learning pathways and modalities. Part-time study, online courses and the ability to collect credits without the intention of completing a degree are some examples of how tertiary programmes have been adapting to a vision of education as lifelong learning. In this context, students in many countries may not be expected to follow a direct path from upper secondary to tertiary education.

Figure B4.3 shows the share of entrants to bachelor's programmes who came directly to tertiary education from upper secondary education without any significant break, such as a gap year. This share varies considerably across countries, which highlights the diversity in the pool of tertiary entrants. While over 90% of those who enter bachelor's programmes in the United States do so right after upper secondary education, the same is true for only 5% of entrants in Israel (Figure B4.3).

This diversity reflects important differences in institutional and social factors that are specific to each country. Traditionally, students entered tertiary programmes immediately after completing upper secondary education, and this remains true in many cases. In some countries, however, it is common for students to enter military or civil service immediately after upper secondary education. This is the case in Israel, for example, where military service is compulsory for both men (for 32 months) and women (for 24 months) from the age of 18. In some countries, military service is only compulsory for men. In Austria, for example, all men have to perform military or alternative service straight after upper secondary school, unless they undertake a short-cycle programme in a higher technical and vocational college. Thus, only 20% of Austrian men who entered a bachelor's programme did so directly after upper secondary in 2020, compared to 54% among women, while the share overall is 39% (Figure B4.3).

Students may also be encouraged to take gap years because of highly selective tertiary entrance systems. In Finland, for example, it is common for students to apply several times before being accepted by some tertiary programmes, which explains why less than 30% of students enter higher education directly from upper secondary (see Indicator D6 in *Education at a Glance 2019* (OECD, 2019[4])). As a result, the Finnish government has been actively trying to reduce the number of years between graduation from upper secondary and entry to tertiary education, by placing more importance on upper secondary education leaving certificates and national matriculation examination results in the selection of students for places instead of entrance examinations. In addition, the number of places for entry to tertiary education has been greatly increased in recent years. These measures have increased the share of students who enter tertiary education directly after upper secondary (see Figure B4.3 and *Education at a Glance 2019* (OECD, 2019[4])). By the same token, higher rates of direct entry to tertiary education may reflect more open admissions systems, such as in the Netherlands, where 86% of bachelor's students entered their programme directly after secondary school (Figure B4.3). There are also countries where policies have been put in place to value certain experiences gained during gap years, which can make it easier for students delay entry to tertiary education if they so wish. In Norway, for example, 50% of university places are reserved for students under the age of 21 but students above this age can be awarded bonus points in their university application for military service,

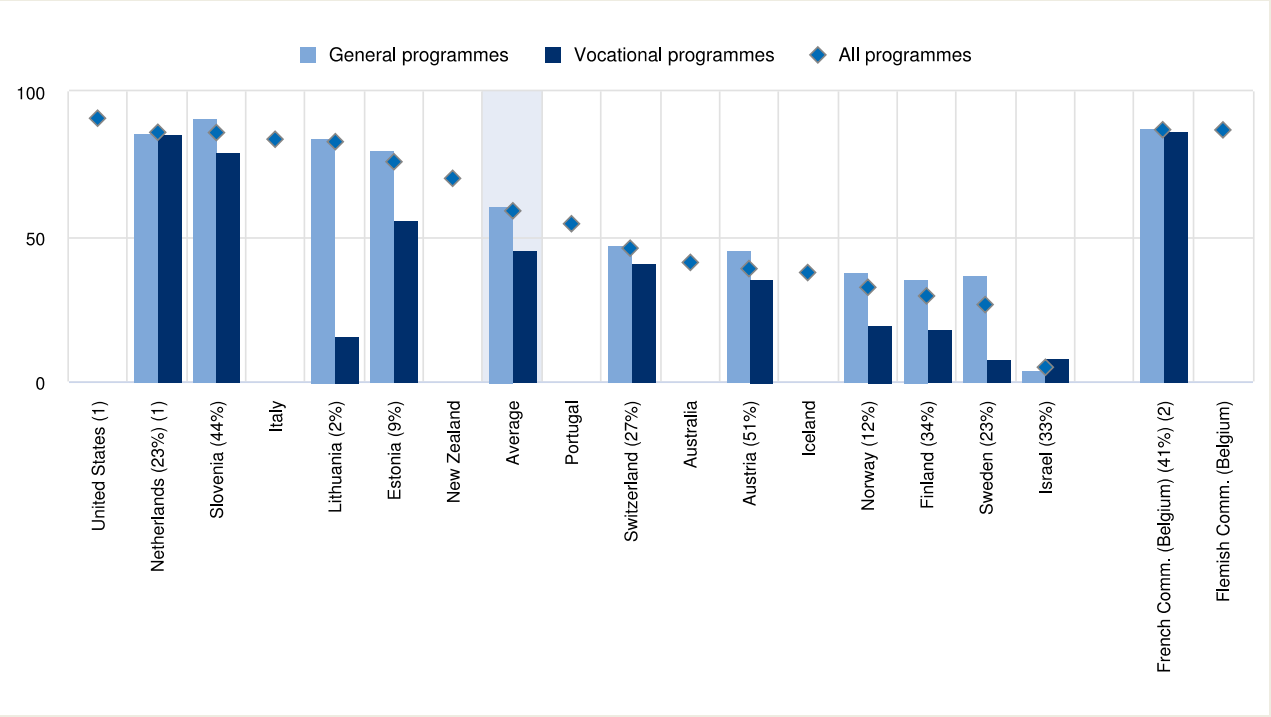
attending folk high school, and their age among other criteria (Vibli, 2022[5]). In Lithuania too, applicants to government-funded places in tertiary programmes may benefit from additional grades if they have completed military service or volunteering activities (Table X3.B5.3.)

Entry into tertiary education can also be influenced by students' upper secondary programme orientation. In some countries, entrants coming from vocational upper secondary programmes are considerably more likely to have taken at least one gap year before entering tertiary education than their peers with a general upper secondary degree. In Estonia, Lithuania and Sweden, the difference is over 20 percentage points, although it should be noted that in Estonia and Lithuania upper secondary vocational graduates make up less than 10% of those entering bachelor's programmes. This could reflect the fact that students who complete a vocational upper secondary programme may choose to enter the labour market first, before pursuing tertiary education. It may also be because some vocational upper secondary qualifications require students to take specific exams or supplementary courses before they can access tertiary education. In other countries, bachelor's students with general and vocational upper secondary qualifications are equally likely to have taken gap years before entering the programme. This is the case, for example, in the Flemish and French communities of Belgium and in the Netherlands (Figure B4.3).

It is important, however, to look beyond averages when analysing students' transition from upper secondary to tertiary education. While flexibility and permeability may be important characteristics of education systems, country averages could mask underlying problems faced by disadvantaged students or at-risk groups during this transition period. It is also important to examine students' pathways after entering tertiary education, and how their educational and social background may influence their ability to succeed at this level.

Figure B4.3. Share of entrants to bachelor's programmes who entered tertiary education directly from upper secondary education, by upper secondary programme orientation (2020)

In per cent



Note: The share of students who graduated from vocational upper secondary programmes are shown in parentheses next to each country name.
1. Year of reference differs from 2020: 2019 in the Netherlands; 2017 in the United States.
2. Data refer only to the *hautes écoles* (HE) and the *écoles des arts* (ESA), representing about 60% of entrants to bachelor's or equivalent programmes.
Countries and other participants are ranked in descending order of the share of entrants who directly entered tertiary education from an upper secondary programme.
Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

StatLink https://stat.link/9df1el

Fields of study

A myriad of factors may influence students' future career aspirations and their choice of field of study, including their parents and other role models, careers guidance given in schools, internship experiences and the opportunities available in the labour market (Hofer, Zhivkovikj and Smyth, 2020[6]). This choice is highly important as tertiary students gain specialised skills and knowledge, which can open doors to certain career paths. However, once they have started their courses, some students may find that their interests and career objectives are better aligned with a different field of study, and therefore transfer to another field (Box B4.2).

In 2020, approximately one in four new entrants on average across the OECD and across all tertiary levels, chose to study the broad field of business, administration and law. This was the most popular field among new entrants in all OECD countries except Finland (where it was health and welfare), Israel (education), Italy (arts and humanities), and Korea and Sweden (engineering, manufacturing and construction). Some 15% of new entrants to tertiary education enrolled in engineering, manufacturing and construction programmes, and 14% in health and welfare, on average across OECD countries. Around 10% studied arts and humanities, and about the same proportion chose social sciences, journalism and information. Education; natural sciences, mathematics and statistics; ICT; and services each accounted for less than 10% of new entrants on average (Table B4.2).

In all fields, the variation across countries is considerable. In Estonia and Luxembourg, for example, about 10% of new entrants chose ICT, compared to 2% in Italy in 2020. In Israel, the share of entrants starting in the field of education was about 19%, more than twice the OECD average. In Italy, one in five tertiary students enrolled in arts and humanities, while the share was below 5% in Chile, Colombia and Mexico (Table B4.2).

Government action may influence the programmes that institutions choose to offer and the programmes in which students decide to enrol. For example, Estonia has experienced labour-market shortages in the ICT sector in recent years, as well as in specialised education, legal and healthcare professions. As part of its Lifelong Learning Strategy for 2014-2020, Estonia therefore encouraged students to enrol in some fields of study by offering government-funded scholarships for students in teacher education and waiving fees for students in ICT, teacher education and nursing, regardless of their study progress (OECD, 2019[7]). Between 2015 and 2020, the share of new entrants enrolling in education programmes in Estonia increased from 6% to 7%, while the share of new entrants to health and welfare increased from 10% to 12%. However, the proportion of new entrants enrolling in these two fields was still below the OECD average in 2020. The share of new entrants to ICT increased from 9% to 10% over the same period.

The COVID-19 crisis has led to some global shifts in the importance placed on certain fields. For example, the pandemic highlighted the overwhelming need to foster the acquisition and development of digital skills and it is likely that the ability to adapt and innovate ICT systems will only increase in importance in the next few decades. However, the field of ICT only attracts a small share of students. On average across OECD countries and across all tertiary levels, 6% of new entrants enrolled in ICT in 2020, representing only a small increase compared to the 5% of new entrants in 2015 (Table B4.2). This is somewhat surprising given that ICT is one of the fields of study offering the greatest benefits in terms of employment (see Indicator A3) and earnings (see Indicator A4). Moreover, in some contexts, the strong demand for ICT skills means that students are able to enter the labour market without fully completing their degree (Box B4.2).

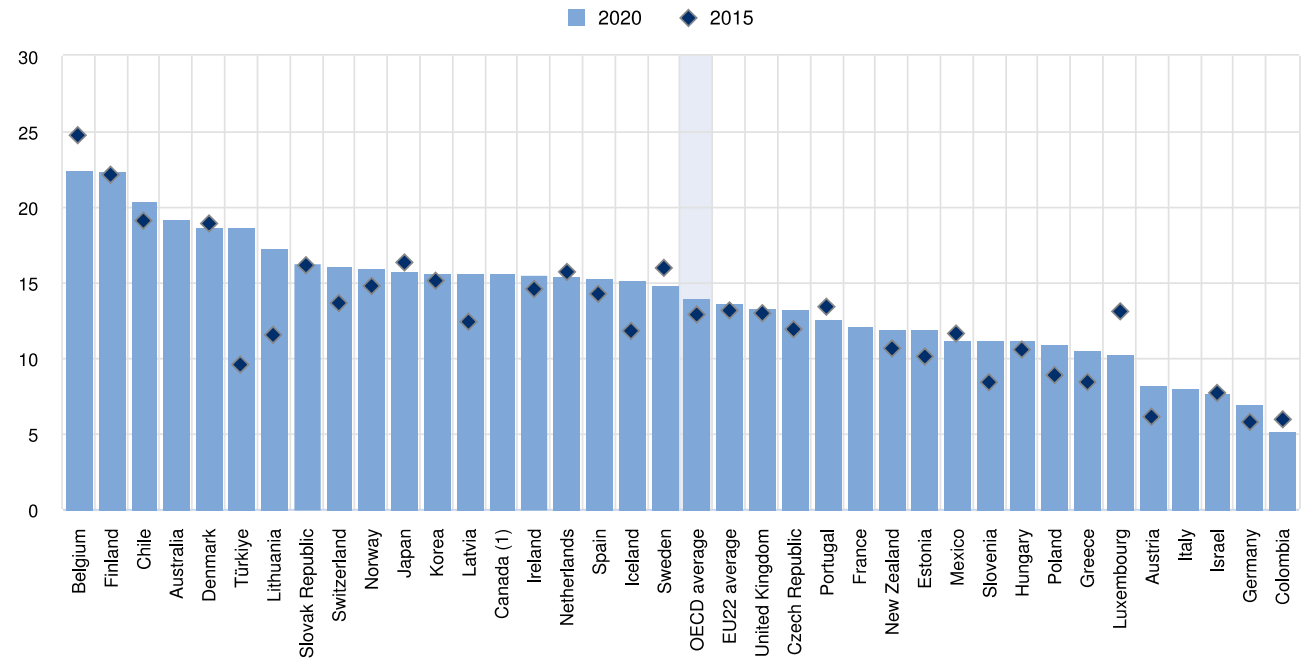
The pandemic has also highlighted the need for robust health services for countries to be able to tackle any subsequent health crises, as well as manage future challenges linked to ageing populations. Policy makers therefore have an interest in ensuring that enough students are entering the relevant fields of study. Health and welfare tertiary graduates enjoy high employment rates, although they vary substantially across countries, from 77% in Mexico to 95% in Iceland (See Indicator A3). In 19 of the 32 countries with available data the share of new entrants to the fields of health and welfare increased between 2015 and 2020. The greatest change was observed in Türkiye, where there was a 9 percentage point increase. At the other end of the scale, the share of new entrants in health and welfare fell in Colombia by 1 percentage point, meaning that only 5% of new entrants enrolled in this field in 2020, the lowest share across OECD countries. Over the same period, the share of new entrants into the field of health and welfare decreased by 3% in Luxembourg (from 13% in 2015 to 10% in 2020) whereas in Belgium, the share decreased by 2 percentage points over this period, but already made up one-quarter (25%) of new entrants in 2015 (Figure B4.4).

The fields of study aggregated under health and welfare include a wide range of programmes: dental studies, medicine, nursing and midwifery, medical diagnostic and treatment technology, therapy and rehabilitation, pharmacy, etc. Some of these programmes, such as dental studies and medicine, require extensive studies and are exclusively offered through master's long first degrees, while others, such as nursing or welfare, are more variable in length. Variations in the overall share of new

entrants in health and welfare programmes might not be enough to observe differences between specific programmes across countries. For example, Latvia and Switzerland recorded 3 and 2 percentage point increases respectively in the share of health and welfare new entrants between 2015 and 2020 (Table B4.2). However, the share of new entrants enrolling in medicine increased by 2 percentage points in Latvia compared to just 1 percentage point in Switzerland. Meanwhile, the share of new entrants enrolling in nursing and midwifery stayed the same in Latvia, but increased in Switzerland by 1 percentage point (see *Education at a Glance Database*).

Figure B4.4. Share of tertiary new entrants in the field of health and welfare (2015 and 2020)

In per cent



Note: Readers may view data for ICT through the Compare function and in the StatLinks.
1. Year of reference 2019.
Countries are ranked in descending order of the share of health and welfare new entrants among all tertiary new entrants in 2020.
Source: OECD (2022), Tables B4.2. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

StatLink https://stat.link/srkib9

Fields of study, by level of education and gender

Entry patterns by field of study reveal a strong gender bias. Although the share of women among new entrants to tertiary education has now overtaken that of men, on average across OECD countries, women are still under-represented in STEM fields and over-represented in health and welfare and education across all tertiary levels. However, these gender differences vary across educational levels and there is greater gender equality among new entrants into higher levels of education (Figure B4.1).

On average across OECD countries in 2020, 21% of new entrants to STEM short-cycle tertiary programmes were women, rising to 31% at bachelor's level. Master's and doctoral STEM programmes are slightly closer to gender parity across OECD countries, with women averaging 36% of new entrants at master's level and 38% at doctoral level. Within these overall figures, the share of women ranges from 17% in Japan to 44% in Estonia, Israel, New Zealand and Portugal and 47% in Türkiye at doctoral level, and from 16% in Japan to 44% in Greece and Iceland and 46% in Poland at master's level (Table B4.3).

At the other end of the spectrum, women outnumber men in other fields of study such as health and welfare, although this imbalance also tends to decrease with each additional educational level: women represent 79% of new entrants to health and welfare programmes in short-cycle tertiary and bachelor's level, compared to 72% at master's level and 63% at doctoral level on average across OECD countries (Table B4.3).

A similar pattern of female over-representation is found in the healthcare workforce, where women make up 70% of all health and care staff, putting them at the forefront of the COVID-19 pandemic. Their contribution during the COVID-19 pandemic as essential workers was particularly important, exposing them to a severe risk of infection, while they were under-represented in leadership and decision making processes in the healthcare sector (OECD, 2020[8]). Pre-existing shortages of nurses were exacerbated during the COVID-19 pandemic, because many nurses themselves became infected by the virus (OECD/European Union, 2020[9]).

In 2020, women were also still largely over-represented among new entrants in the field of education, where they represented 78% of new entrants on average across OECD countries. The share of women ranges from 61% in Colombia and 62% in Türkiye to 90% in Latvia and 93% in Italy (see *Education at a Glance Database*).

Box B4.2. Pathways through tertiary education by field of study

The likelihood that students will graduate from their programme, transfer to a different field of study, or leave tertiary education without graduating varies across education systems. These outcomes can be influenced by the structure of education systems as a whole, such as their selectivity or flexibility at tertiary level, as well as the characteristics of higher education institutions and individual students (European Commission, 2015[10]). Even within the same country context, the likelihood that students will follow different pathways can differ considerably according to the field of study that they choose to enter.

For example, in 2020, the share of bachelor's students who graduated from the same field of study after starting a full-time course in ICT (by the end of the theoretical duration of their programme plus three years) was less than 50% on average across countries and other participants with available data in 2020 (Figure B4.5). This was relatively low compared to other fields, like education (66%), or health and welfare (74%) (Figure B4.5). Most students who did not complete the bachelor's programme they had started within this timeframe were no longer in tertiary education. The share of such students was much higher on average for students who had entered full-time ICT programmes (29% of those who started) than students who entered education programmes (19%) or health and welfare (15%). Some, however, were still continuing their tertiary studies. This was especially the case for ICT programmes, where 14% of students had not yet graduated but were still in education three years after the theoretical end of their programme. In contrast, only 7% of students entering education programmes, and 6% of those entering health and welfare, were in a similar situation.

There were also some differences across fields of study regarding the share of students who graduated from a different field after transferring within the same level of education. For example, 7% of students entered an ICT bachelor's programme but graduated from a bachelor's in another field, on average across countries and other participants with available data. This was more than double the share among students who entered a health and welfare programme (3%). However, the share of students who graduated after transferring to a different level (whether short-cycle tertiary or master's LFD) was generally low (less than 5%) across all fields.

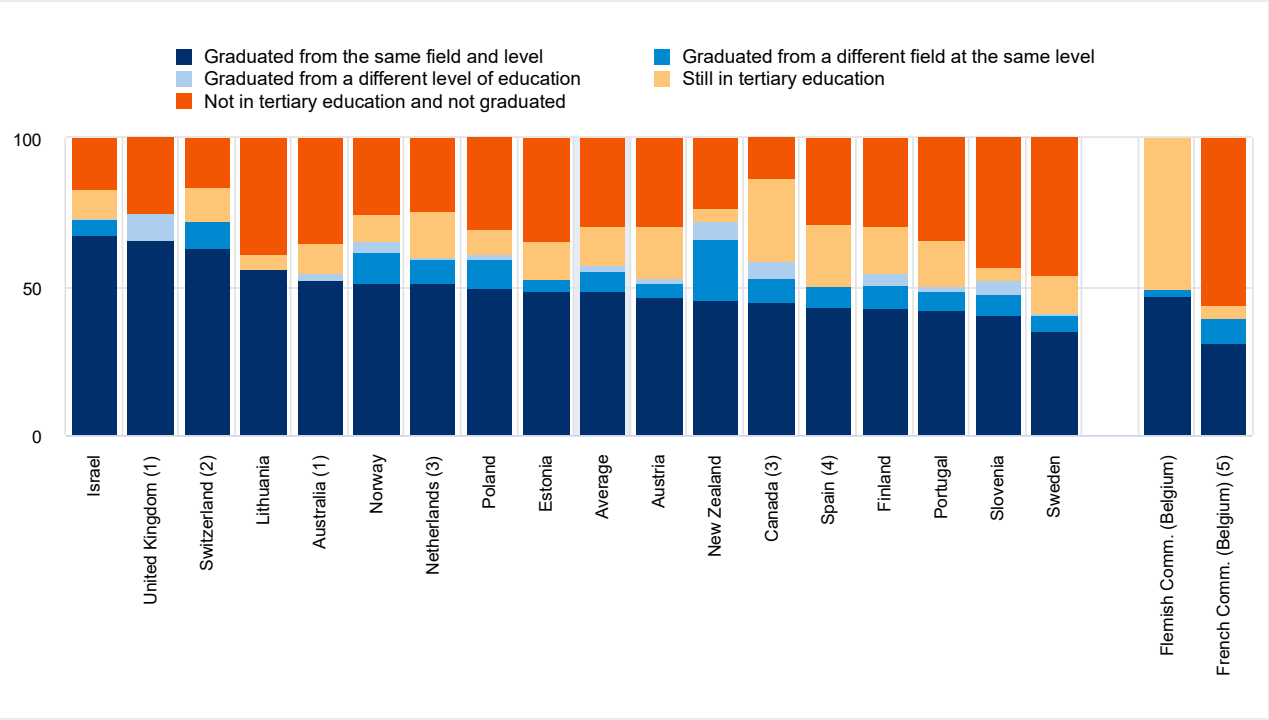
These differences between fields can be partially explained by the labour-market opportunities available, based on demand from employers and the supply of workers with relevant skills. In Norway, for example, it is fairly common for employers to accept partial qualifications in ICT due to the overall shortage of graduates with relevant qualifications. This may explain why higher proportions of ICT students (29%) leave a bachelor's programme without completing a degree than education students (19%) and health and welfare students (15%) (Figure B4.5). This may change if increasing shares of students enter the field of ICT and the supply of workers with relevant skills increases, but in most countries the share of students entering ICT programmes is still relatively low (Table B4.2).

Regulations on the qualifications required to enter certain professions, and the share of students in programmes that are oriented towards such professions, can also contribute to the differences between fields of study. For example, in Estonia, teachers are required to hold a teaching degree (OECD, 2016[11]). Given that a high proportion of students in the field of education are enrolled in such teacher training programmes in Estonia (80% in 2020) (see *Education at a Glance Database*), it is perhaps unsurprising that large shares of these students complete their degrees within the same field and

level (over 70%), as these programmes were selected to meet a specific career entry requirement (Figure B4.5). In contrast, a much smaller proportion of students enrolled in the field of education in Poland are registered in specific teacher training programmes (55% in 2020), which is reflected in the smaller share of students in education programmes who graduate from the same field and level (62%).

Figure B4.5. Status of full-time bachelor's students by the theoretical duration plus three years in selected fields of study at entry (2020)

ICT, in per cent



Notes: Readers may view data for education and health and welfare through the Compare function and in the StatLinks. Students graduating at a different level may have also changed to a different field. The year of reference for the data (2020) corresponds to the graduation year three years after the theoretical end of the programme (2017). The reference year for the entrance cohort changes depending on the duration of programmes.
1. Data refers only to programmes with a theoretical duration of 3, 4, or 5 years in Australia. Only programmes with a theoretical duration of 3 or 4 years are included for the United Kingdom.
2. Data on graduation in the same field and level includes students who graduated from a master's long first degree programme.
3. Year of reference differs from 2020: 2019 in Canada and the Netherlands. Timeframe of reference differs in Canada, where data is provided for the theoretical duration of the programme plus one year (not three years).
4. Data excludes graduation from short-cycle tertiary.
5. Data refers only to the *hautes écoles* (HE) and the *écoles des arts* (ESA), representing about 60% of entrants to bachelor's or equivalent programmes.
Countries are ranked in descending order of the share of students who graduated from the same field and level as entry.
Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

StatLink https://stat.link/awe8bh

Profile of new entrants into doctoral studies

A doctorate is the highest degree awarded in academia. Doctoral studies play an important role in developing future innovation by training the researchers needed to advance knowledge and explore new research areas relevant for the economy and society of tomorrow. Given the high level of investment in terms of personal and financial resources and the pivotal role of doctorate holders in pushing back the frontiers of knowledge, there has been growing policy interest in attracting talented young people into careers in research, ensuring equitable access to doctoral programmes for both men and women, and providing rewarding employment opportunities to its graduates (OECD, 2019[7]).

Doctorate holders account for a small proportion of the adult population. In 2021, just 1.3% of 25-64 year-olds held a doctorate or equivalent qualification on average across OECD countries, though this varied from 0.1% or less in Costa Rica, Indonesia and Mexico to more than 3% in India, Slovenia and Switzerland (See Indicator A1). In addition to these low levels, the number of new entrants to doctoral level studies has been decreasing in the past few years. Between 2013 and 2020, the number of new entrants to this level decreased by approximately 4% across OECD countries with available data for both years, reaching less than 330,000 students in 2020. This trend is primarily driven by substantial decreases in the number of new entrants in Poland (-77%) and the Slovak Republic (-26%) since 2013 (see *Education at a Glance Database*).

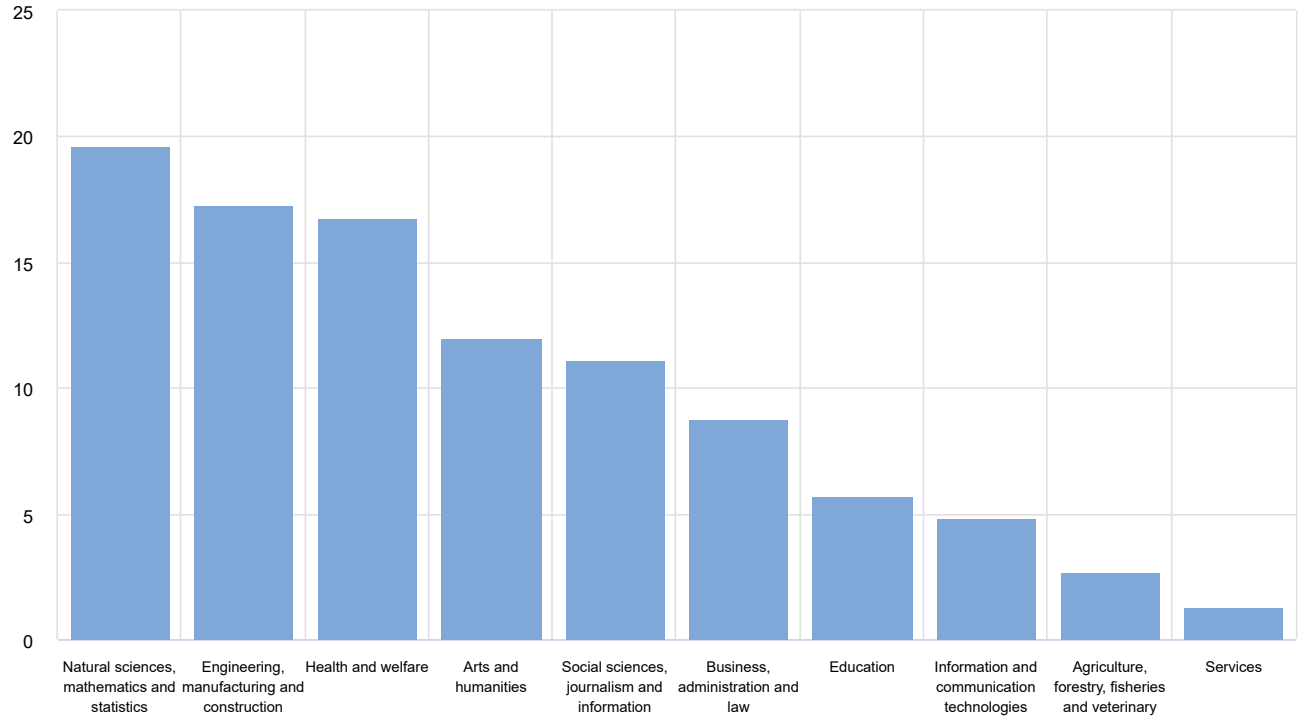
Age distribution

Admission to doctoral studies is generally on the basis of a master's degree or an equivalent qualification in most countries. However, in some countries, such as Australia, Colombia and the United States, students may enter a doctoral programme following the completion of a bachelor's programme, although in Australia an honours component is additionally required (Class I or IIA) (OECD, 2019[7]). The median age at entry to doctoral programmes is 29 on average across OECD countries with at least 60% of entrants between the ages of 26 and 37 (Table B4.4).

The age distribution of new entrants to doctoral programmes provides insights into the diversity of entrants, in terms of age. In some countries, the age distribution is closely centred on the median, implying relatively small age differences among doctoral students. This is the case in Luxembourg, where 4 years separate the 80th and 20th percentile age groups. In other countries, the age distribution is much wider. For example in Greece, Korea and Portugal, new entrants in the 80th percentile are 18 years older than those in the 20th percentile. However in all OECD countries, the median age is closer to the 20th percentile, indicating the age distribution skews more towards the younger than the older age group (Table B4.4).

Figure B4.6. Distribution of new entrants to doctoral programmes, by field of study (2020)

OECD average, in per cent



Source: OECD (2022), Table B4.4. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

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Fields of study

Students entering a doctoral programme are expected to contribute to and expand the knowledge base in their selected field of study. In contrast to lower levels of tertiary education, doctoral candidates tend to specialise more heavily in the science and technology-related fields of study. The field of natural sciences, mathematics and statistics attracts the largest share of doctoral graduates, 20% on average across OECD countries, followed by engineering, manufacturing and construction, and health and welfare, both at 17%. In contrast, business, administration and law, which accounted for the largest share of entrants at bachelor's level, represents less than 10% at doctoral level (Figure B4.6). Some of these differences may be explained by the availability of funding that can be accessed in different fields of education. For example, in the United States, doctoral students in STEM programmes are more likely to be able to rely primarily on funding from their institutions to support themselves through their studies than students in social sciences programmes, who are considerably more likely to rely on loans (Zeiser and Kirshstein, 2014[12]).

There are marked differences among countries in the distribution of the fields studied by doctoral new entrants. Although the largest share of doctoral students tend to enter natural sciences, mathematics and statistics across OECD countries, this varies from 10% in Mexico to 34% in Chile. Health and welfare accounts for more than 30% of new entrants at doctoral level in Denmark, Japan and Sweden. In Canada and Iceland, 20% of doctoral students entered into the broad field of social science, journalism and information, and the share of doctoral new entrants from this field exceeds 15% only in Hungary, Latvia and Portugal. Finally, 25% of doctoral students entered the field of ICT in Luxembourg, compared to an OECD average of 5% (Table B4.4).

Gender

On average across OECD countries, women represented 49% of doctoral new entrants in 2020. Gender parity (where women represent between 48-52% of all first-time entrants) is observed in almost half of OECD countries. In 10 OECD countries, there is a higher share of male first-time entrants, while there is a higher share of female first-time entrants in the remaining 9 (Table B4.4).

Doctoral level is the only level of education where women represent less than 50% of entrants on average across the OECD. One of the reasons for the higher share of men is the predominance of STEM-related fields of study at doctoral level. In four out of the ten countries where men outnumber women among new entrants, at least 50% of doctoral students entered a STEM-related field (Chile, France, Italy and Luxembourg) (Table B4.4). The lower participation of women in STEM-related fields has prompted countries to initiate policy action to promote women in STEM and in research more generally. These actions vary from financial incentives and public awareness campaigns to prizes and awards for women in STEM, in order to encourage higher participation of women in science-related fields at different ages. For instance, Korea launched a plan in 2019 to raise the number of qualified female scientists and engineers. Australia, Germany and the United Kingdom, among other OECD countries, also have programmes to fund women's participation in STEM and research (García and Serve, 2022[13]).

International students

Attracting the best doctoral students from around the world enables countries to build a leading role in research and innovation, and some countries have implemented policies to nurture an attractive research environment for potential students. Some countries, such as Australia and Italy, charge lower fees for doctoral programmes than at lower levels of education (see Indicator C5). However, the status of doctoral candidates varies across countries: whereas some countries recognise them as full employees within their respective tertiary institutions and remunerate them in line with junior academic staff, others consider them as students who are not regular employees of the institution. When employed, doctoral candidates may have different status and responsibilities across countries (see Box D8.2 in Indicator D8).

Doctoral students are more likely than other tertiary students to study abroad. On average across OECD countries, 30% of new entrants at doctoral level are international or foreign students, compared to 21% at master's level and 10% at bachelor's (Table B4.1). In some countries, international students make up the majority of new entrants at doctoral level: half or more are international students in Luxembourg, the Netherlands, New Zealand and Switzerland (Table B4.4).

Definitions

Adult education is specifically targeted at individuals who are regarded as adults by their society to improve their technical or professional qualifications, further develop their abilities, enrich their knowledge with the purpose to complete a level of formal education, or to acquire, refresh or update their knowledge, skills and competencies in a particular field. This also includes what may be referred to as 'continuing education', 'recurrent education' or 'second-chance education'.

Initial education is the education of individuals before their first entrance to the labour market, i.e. when they will normally be in full-time education. It thus targets individuals who are regarded as children, youth and young adults by their society. It typically takes place in educational institutions in a system designed as a continuous educational pathway.

Internationally mobile students or international students are those students who left their country of origin and moved to another country for the purpose of study.

Master's long first degree (LFD) is a five- to seven-year master's programme (ISCED 7-LFD) that prepares for a first degree or qualification that is equivalent to master's level programme in terms of their complexity of content. This includes highly specialised fields such as medicine, dentistry or, in some cases, law and engineering.

New entrants to a tertiary level of education are students enrolling for the first time in a tertiary level of education but who may have previously entered and completed a degree in another tertiary level of education.

Methodology

The average age of students is calculated from 1 January for countries where the academic year starts in the second semester of the calendar year and 1 July for countries where the academic year starts in the first semester of the calendar year. As a consequence, the average age of new entrants may be overestimated by up to six months, while that of first-time graduates may be underestimated by the same.

International students are a significant share of the total student population in some countries, and their numbers can artificially inflate the proportion of today's young adults who are expected to enter tertiary programmes. When international students are included in the calculation, the percentage of expected first-time entrants into tertiary programmes can change significantly.

The field of education is determined by the main subject matter of a student's programme of study. For practical purposes, the main subject of a programme or qualification is determined by the detailed field in which the majority (i.e.more than 50%) or a clearly predominant part of the learning credits or students' intended learning time is spent. Learning credits, where available, should be used. Otherwise, an approximate assessment of the intended learning time should be made. Learning time includes time spent in lectures and seminars, as well as in laboratories or on special projects. Private study time is excluded (as it is difficult to measure and varies between students). Programmes and qualifications are classified in the detailed field containing their main subject (UNESCO Institute for Statistics, 2014[14]).

For more information, please see the *OECD Handbook for Internationally Comparative Education Statistics 2018* (OECD, 2018[15]) and Annex 3 for country-specific notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

Source

Data refer to the 2019/20 academic year and are based on the UNESCO-UIS/OECD/Eurostat data collection on education statistics administered by the OECD in 2021. Data for some countries may have a different reference year. For details, see Annex 3 at https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf.

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Indicator B4 tables

Tables Indicator B4. Who is expected to enter tertiary education?

Table B4.1	Profile of new entrants to short-cycle, bachelor's, master's levels and of first-time entrants into tertiary education (2020)
Table B4.2	Distribution of new entrants to tertiary education, by field of study (2015 and 2020)
Table B4.3	Share of women among new entrants to tertiary education, by selected fields of study and level of education (2020)
Table B4.4	Profile of new entrants to doctoral programmes (2020)

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Cut-off date for the data: 13 June 2022. Any updates on data can be found on line at: http://dx.doi.org/10.1787/eag-data-en. More breakdowns can also be found at http://stats.oecd.org, *Education at a Glance Database*.

Table B4.1. Profile of new entrants to short-cycle, bachelor's, master's levels and of first-time entrants into tertiary education (2020)

		Short-cycle tertiary			Bachelor's or equivalent			Master's or equivalent						Tertiary education		
								All programmes			Long first degree programmes					
		Share of female new entrants	Average age of new entrants	Share of international new entrants	Share of female new entrants	Average age of new entrants	Share of international new entrants	Share of female new entrants	Average age of new entrants	Share of international new entrants	Share of female new entrants	Average age of new entrants	Share of international new entrants	Share of female first-time entrants	Average age of first-time entrants	Share of international first-time entrants
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
OECD	Countries															
	Australia	56	30	37	58	23	18	56	29	47	a	a	a	m	m	m
	Austria	53	22	2	56	22	22	55	26	31	61	22	23	54	22	23
	Belgium [1]	44	21	1	56	19	9	55	24	13	a	a	a	56	19	9
	Canada [2]	51	23	25	57	20	17	57	26	30	61	23	2	54	22	24
	Chile	54	24	2	52	21	1	58	32	7	63	19	0	54	22	1
	Colombia	50	23	0	53	22	0	55	33	1	a	a	a	52	23	0
	Costa Rica	m	m	m	m	m	m	m	m	m	a	a	a	m	m	m
	Czech Republic	64	22	6	57	22	13	59	25	19	65	21	23	58	22	14
	Denmark	48	31	9	58	25	7	56	26	21	a	a	a	55	25	7
	Estonia	a	a	a	56	22	11	60	27	28	62	20	10	56	22	11
	Finland	a	a	a	56	24	7	62	32	20	66	22	1	56	23	10
	France	51	20	m	58	21	m	55	24	m	49	20	m	m	m	m
	Germany	46	28	0	48	23	7	53	24	27	65	21	31	51	23	10
	Greece	a	a	a	54	20	2	61	32	1	a	a	a	54	20	2
	Hungary	59	23	1	54	21	9	56	25	27	58	21	32	55	21	12
	Iceland	66	33	22	62	23	9	69	31	15	77	23	1	62	24	9
	Ireland	54	34	3	52	21	6	58	31	29	m	m	m	m	m	m
	Israel	52	23	2	57	24	4	63	33	5	a	a	a	56	24	4
	Italy	26	22	0	54	20	2	57	24	6	67	19	3	55	20	2
	Japan	60	m	m	46	19	m	35	24	m	51	19	m	51	18	m
	Korea	50	21	1	50	19	2	54	32	13	a	a	a	m	m	m
	Latvia	67	29	1	48	23	17	59	28	30	72	22	44	m	m	m
	Lithuania	a	a	a	54	22	7	62	26	9	68	20	29	55	22	9
	Luxembourg	54	22	11	54	22	26	58	29	69	a	a	a	54	22	22
	Mexico	40	20	1	52	21	1	57	31	3	a	a	a	52	21	1
	Netherlands	50	25	2	54	20	17	56	25	32	a	a	a	54	20	17
	New Zealand	57	29	13	59	23	21	59	31	34	a	a	a	58	23	21
	Norway	20	27	1	58	23	4	60	26	7	61	22	1	55	22	2
	Poland	91	40	0	52	22	m	68	25	m	69	22	m	54	22	6
	Portugal	40	21	19	56	21	11	57	24	20	52	19	11	54	20	12
	Slovak Republic	69	24	1	55	22	11	60	24	10	67	21	34	56	22	12
	Slovenia	39	24	5	56	21	10	62	25	10	75	19	9	54	20	10
	Spain	48	23	2	56	20	3	59	27	18	68	20	13	54	22	8
	Sweden	49	29	0	61	25	6	57	27	23	57	26	4	57	24	14
	Switzerland	60	32	0	50	24	11	51	27	32	84	24	3	51	25	18
	Türkiye	51	25	1	53	23	6	48	27	8	55	19	11	52	24	4
	United Kingdom	56	29	6	56	22	18	60	27	49	a	a	a	56	23	14
	United States	55	23	3	m	m	m	60	30	19	a	a	a	55	20	4
	OECD average	52	26	6	55	22	10	58	27	21	64	21	14	55	22	10
	EU22 average	53	26	4	55	22	10	59	26	22	64	21	19	55	22	11
Partners	Argentina	m	m	m	m	m	m	m	m	m	m	m	m	59	m	m
	Brazil	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	China	m	m	m	m	m	m	m	m	m	m	m	m	52	m	m
	India	m	m	m	m	m	m	m	m	m	m	m	m	48	m	m
	Indonesia [2]	59	m	m	55	m	m	46	m	m	m	m	m	56	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m	46	m	m
	South Africa	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	G20 average	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m

Note: See *Definitions* and *Methodology* sections for more information. Data and more breakdowns available at http://stats.oecd.org, *Education at a Glance Database*.
1. Short-cycle tertiary data refer to the Flemish Community of Belgium only.
2. Reference year 2019.
Source: OECD/UIS/Eurostat (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

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Table B4.2. Distribution of new entrants to tertiary education, by field of study (2015 and 2020)

		2020									2015								
		Education	Arts and humanities	Social sciences, journalism and information	Business, administration and law	Natural sciences, mathematics and statistics	Information and communication technologies	Engineering, manufacturing and construction	Health and welfare	Services	Education	Arts and humanities	Social sciences, journalism and information	Business, administration and law	Natural sciences, mathematics and statistics	Information and communication technologies	Engineering, manufacturing and construction	Health and welfare	Services
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
OECD	Countries																		
	Australia	9	11	6	32	5	7	8	19	2	m	m	m	m	m	m	m	m	m
	Austria	12	9	7	24	7	6	19	8	6	12	10	9	23	7	4	20	6	7
	Belgium	7	10	11	25	4	4	13	23	1	8	11	11	22	4	3	13	25	2
	Canada [1]	3	8	9	22	12	6	13	16	7	m	m	m	m	m	m	m	m	m
	Chile	10	4	4	23	2	5	21	20	7	9	4	5	22	2	4	21	19	12
	Colombia	8	4	10	41	2	6	18	5	3	7	4	9	39	2	6	21	6	4
	Costa Rica	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Czech Republic	11	9	9	19	7	7	15	13	7	9	9	9	20	6	5	18	12	8
	Denmark	5	9	9	30	5	6	12	19	3	6	12	10	29	5	5	10	19	3
	Estonia	7	14	7	21	7	10	14	12	5	6	13	8	21	6	9	18	10	6
	Finland	5	9	5	21	4	9	19	22	5	4	9	5	20	5	9	20	22	5
	France	3	14	9	30	11	3	13	12	4	m	m	m	m	m	m	m	m	m
	Germany	9	10	7	25	9	7	22	7	3	7[b]	11[b]	8[b]	24[b]	10[b]	6[b]	23[b]	6[b]	2[b]
	Greece	6	12	14	20	10	4	16	11	3	7	13	12	18	10	4	21	8	3
	Hungary	9	10	11	24	4	9	13	11	7	12	11	10	22	4	4	15	11	7
	Iceland	13	12	14	19	6	4	11	15	4	11	14	14	23	6	6	10	12	3
	Ireland	7	14	6	24	9	7	10	16	5	7	16	6	21	9	8	10	15	5
	Israel	19	7	17	16	8	8	17	8	0	20	9	18	15	7	5	19	8	0
	Italy	5	20	15	16	11	2	17	8	4	m	m	m	m	m	m	m	m	m
	Japan [2]	8[d]	16[d]	8[d]	20[d]	3[d]	x	17[d]	16[d]	9[d]	9[d]	16[d]	8[d]	19[d]	3[d]	x	17[d]	16[d]	9[d]
	Korea	7	16	6	13	5	5	21	16	11	7	16	5	14	5	5	21	15	11
	Latvia	5	7	8	30	3	8	14	16	8	6	8	8	30	3	7	18	12	7
	Lithuania	3	11	9	28	5	7	16	17	2	4	9	11	30	4	4	21	12	3
	Luxembourg	12	10	11	27	8	10	9	10	0	6	13	12	37	5	5	9	13	0
	Mexico	11	4	8	33	3	5	18	11	3	8	4	9	31	3	2	27	12	1
	Netherlands	7	7	15	28	7	5	10	15	5	10	8	12	29	6	3	9	16	6
	New Zealand	7	14	11	21	12	6	10	12	4	7	14	11	24	10	7	8	11	6
	Norway	13	11	14	17	5	6	11	16	5	10	13	13	17	6	4	12	15	8
	Poland	7	11	12	23	5	6	15	11	9	9	10	12	23	5	5	18	9	9
	Portugal	4	11	12	24	6	3	18	13	7	6	11	12	24	6	2	17	13	7
	Slovak Republic	13	7	11	19	5	6	14	16	7	13	7	12	19	6	4	14	16	6
	Slovenia	8	8	9	20	6	6	19	11	9	8	8	9	20	6	5	21	8	9
	Spain	12	11	8	20	5	6	13	15	8	11	12	8	20	6	5	15	14	8
	Sweden	11	13	11	16	6	6	19	15	3	12	13	11	15	5	5	19	16	2
	Switzerland	8	8	7	27	8	4	16	16	4	8	8	7	29	8	3	15	14	7
	Türkiye	4	13	8	28	3	3	12	19	8	6	14	9	36	2	2	14	10	5
	United Kingdom	6	13	16	27	8	6	9	13	0	8[b]	15[b]	12[b]	22[b]	14[b]	6[b]	8[b]	13[b]	0[b]
	United States	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	OECD average	8	10	10	24	6	6	15	14	5	9	11	10	24	6	5	16	13	5
	OECD average if available data for STEM related fields in both years	9	10	10	24	6	6	15	14	5	9	11	10	24	6	5	16	13	5
	EU22 average	8	11	10	23	7	6	15	14	5	8	11	10	23	6	5	16	13	5
Partners	Argentina	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Brazil	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	China	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	G20 average	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m

Note: See *Definitions* and *Methodology* sections for more information. Data (i.e. on the field of Agriculture, forestry, fisheries and veterinary) and more breakdowns available at http://stats.oecd.org, *Education at a Glance Database*.
1. Reference year 2019.
2. All fields of study include the field of information and communication technologies.
Source: OECD/UIS/Eurostat (2022). See Source section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

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Table B4.3. Share of women among new entrants to tertiary education, by selected fields of study and level of education (2020)

		Short-cycle tertiary				Bachelor's or equivalent				Master's or equivalent				Doctoral or equivalent			
		Education	STEM		Health and welfare	Education	STEM		Health and welfare	Education	STEM		Health and welfare	Education	STEM		Health and welfare
			Total	ICT			Total	ICT			Total	ICT			Total	ICT	
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
OECD	Countries																
	Australia	91	25	22	76	72	34	20	76	73	35	33	73	70	42	31	65
	Austria	86	18	11	70	73	38	22	78	82	34	23	64	76	32	22	54
	Belgium [1]	57	10	8	77	71	22	11	75	78	28	6	66	m	m	m	m
	Canada [2]	85	22	22	84	74	43	20	85	81	39	31	68	73	36	28	65
	Chile	98	12	12	83	73	24	12	77	73	30	17	69	61	37	26	53
	Colombia	25	30	27	60	62	31	16	68	64	35	28	65	50	32	50	64
	Costa Rica	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Czech Republic	a	a	a	a	79	32	16	87	81	37	21	72	68	39	18	57
	Denmark	65	22	16	85	61	32	20	80	81	42	35	72	a	33	a	63
	Estonia	a	a	a	a	93	33	24	88	87	38	38	81	92	44	30	78
	Finland	a	a	a	a	83	27	21	86	88	31	30	81	80	39	23	64
	France	74	24	17	85	85	37	16	83	74	33	21	68	67	38	25	56
	Germany	a	30	a	56	80	25	21	79	77	34	26	70	70	34	19	60
	Greece	a	a	a	a	84	39	22	72	83	44	38	71	66	39	30	56
	Hungary	a	14	15	92	96	24	16	85	66	35	23	61	75	38	20	56
	Iceland	52	48	31	100	70	41	24	88	80	44	31	86	78	33	22	88
	Ireland	90	31	21	71	74	33	19	78	71	36	29	78	76	43	36	65
	Israel	82	28	48	79	78	36	30	80	84	37	24	77	77	44	28	74
	Italy	a	11	17	a	93	38	14	76	92	39	19	63	76	39	24	62
	Japan [3]	92[d]	17	x	71[d]	59[d]	18	x	73[d]	46[d]	16	x	51[d]	46[d]	17	x	34[d]
	Korea	92	15	26	70	67	30	27	68	78	31	23	70	75	27	19	57
	Latvia	98	17	21	91	87	24	16	87	88	35	27	74	75	38	39	68
	Lithuania	a	a	a	a	88	21	12	86	82	37	18	77	67	38	23	62
	Luxembourg	a	18	13	83	64	28	21	68	75	43	41	82	50	35	23	a
	Mexico	86	25	27	65	74	31	24	70	71	37	26	61	61	40	25	60
	Netherlands	78	10	10	79	72	28	13	78	81	38	29	74	84	30	14	63
	New Zealand	69	35	22	82	85	43	29	79	80	42	36	82	72	44	35	73
	Norway	a	10	26	86	75	30	19	83	71	39	25	80	68	37	30	65
	Poland	a	a	a	91	69	32	13	81	94	46	21	76	65	43	16	62
	Portugal	93	13	7	87	87	32	18	80	71	39	28	77	70	44	26	71
	Slovak Republic	93	38	a	74	79	26	13	76	78	32	14	74	62	41	19	55
	Slovenia	a	16	15	89	87	30	17	78	84	36	20	81	76	42	26	62
	Spain	92	15	12	78	77	33	15	75	69	39	22	72	62	41	24	61
	Sweden	a	28	27	80	83	38	27	82	71	36	37	79	77	40	30	63
	Switzerland	93	5	a	81	76	24	13	77	67	32	18	69	67	40	21	59
	Türkiye	a	23	25	75	62	35	30	86	60	39	30	60	57	47	44	72
	United Kingdom	71	23	26	77	87	31	17	78	74	37	30	76	69	38	30	63
	United States	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	OECD average	80	21	20	79	77	31	19	79	77	36	26	72	69	38	26	63
	EU22 average	83	20	15	81	80	31	18	80	80	37	26	73	72	38	24	62
Partners	Argentina	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Brazil	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	China	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	G20 average	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m

Note: STEM refers to the fields of science, technology, engineering and mathematics; ICT stands for information and communication technologies. See *Definitions* and *Methodology* sections for more information. Data and more breakdowns available at http://stats.oecd.org, *Education at a Glance Database*.
1. Short-cycle tertiary data refer to the Flemish Community of Belgium only.
2. Reference year 2019.
3. All fields of study include the field of information and communication technologies.
Source: OECD/UIS/Eurostat (2022). See Source section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

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Table B4.4. Profile of new entrants to doctoral programmes (2020)

		Share of female new entrants	Share of new entrants below the age of 30	Share of international new entrants	Average age of new entrants	Age distribution of new entrants			Share of new entrants by field of study									
						20th percentile	Median	80th percentile	Education	Arts and humanities	Social sciences, journalism and information	Business, administration and law	Natural sciences, mathematics and statistics	Information and communication technologies	Engineering, manufacturing and construction	Agriculture, forestry, fisheries and veterinary	Health and welfare	Services
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
OECD	Countries																	
	Australia	53	49	29	33	25	30	42	5	14	10	8	21	5	16	3	18	0
	Austria	45	65	43	30	26	28	33	2	13	7	13	17	7	23	3	14	1
	Belgium	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Canada [1]	50	65	41	30	25	28	34	4	11	20	5	24	3	19	2	9	2
	Chile	43	41	24	32	27	31	37	5	11	12	3	34	2	19	6	8	0
	Colombia	41	20	2	37	30	36	44	14	7	14	11	19	0	23	3	9	0
	Costa Rica	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Czech Republic	46	75	30	29	25	27	32	4	12	8	9	20	4	23	6	11	3
	Denmark	50	64	35	29	26	28	33	0	9	12	0	12	0	28	3	37	0
	Estonia	55	61	43	30	26	29	34	4	16	5	7	23	13	15	6	10	0
	Finland	56	41	35	33	27	31	39	7	14	11	9	15	7	13	3	20	1
	France	46	78	m	28	24	26	31	1	15	11	9	29	5	16	1	11	1
	Germany	47	68	25	29	26	28	32	2	9	6	9	25	4	15	2	28	0
	Greece	50	48	2	33	26	31	44	5	13	7	9	12	5	21	3	23	2
	Hungary	49	61	30	30	26	28	36	5	18	16	6	17	4	9	4	17	4
	Iceland	57	43	49	34	27	31	41	7	7	20	6	16	7	16	0	20	2
	Ireland	54	62	41	30	24	28	36	6	11	13	6	24	7	15	2	17	0
	Israel	54	39	9	34	28	32	41	5	13	12	6	30	6	12	2	14	0
	Italy	47	72	12	29	25	27	32	1	10	7	10	26	2	24	5	14	0
	Japan [2]	32	57	18	30	25	29	35	4[d]	11[d]	3[d]	4[d]	11[d]	x	18[d]	5[d]	45[d]	0[d]
	Korea	45	42	21	35	26	32	44	7	16	7	13	11	4	21	2	14	5
	Latvia	52	41	13	34	27	32	43	5	10	16	18	14	8	18	1	8	3
	Lithuania	49	59	13	30	26	29	35	4	12	11	8	26	2	21	5	11	0
	Luxembourg	39	74	90	28	26	28	31	2	11	14	7	26	25	16	0	0	0
	Mexico	52	22	7	36	30	37	44	39	5	10	22	10	1	6	2	5	1
	Netherlands	49	86	60	27	25	26	29	m	m	m	m	m	m	m	m	m	m
	New Zealand	55	50	50	33	25	30	41	7	9	14	8	21	5	16	3	16	1
	Norway	53	45	34	33	27	31	39	6	14	11	4	25	2	12	1	24	0
	Poland	50	77	m	28	25	26	31	3	20	11	11	18	2	15	3	13	2
	Portugal	51	38	39	35	27	33	44	7	14	18	11	12	3	19	2	10	4
	Slovak Republic	48	63	15	30	25	27	38	7	12	9	13	16	3	15	3	18	5
	Slovenia	54	60	23	31	26	28	38	6	16	7	11	13	4	18	0	22	2
	Spain	50	51	24	33	25	30	41	5	14	15	9	19	3	13	2	19	2
	Sweden	52	55	43	31	26	29	37	3	4	7	2	18	6	22	2	35	1
	Switzerland	50	74	59	28	26	28	31	2	9	8	9	27	4	13	2	26	0
	Türkiye	50	49	11	31	27	30	36	7	18	10	14	13	1	22	4	10	2
	United Kingdom	51	67	43	29	23	26	35	4	14	15	8	25	5	14	1	13	0
	United States	50	60	24	31	23	27	40	m	m	m	m	m	m	m	m	m	m
	OECD average	49	56	30	31	26	29	37	6	12	11	9	20	5	17	3	17	1
	EU22 average	49	62	32	30	26	29	36	4	13	11	9	19	6	18	3	17	2
Partners	Argentina	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Brazil	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	China	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia [1]	35	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	G20 average	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m

Note: See *Definitions* and *Methodology* sections for more information. Data and more breakdowns available at http://stats.oecd.org, *Education at a Glance Database*.
1. Reference year 2019.
2. All fields of study include the field of information and communication technologies.
Source: OECD/UIS/Eurostat (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/dn0wim

Indicator B5. How many students complete tertiary education?

Highlights

- On average across countries with true cohort data (data following individual students), 39% of full-time students who enter a bachelor's programme graduate within the theoretical duration of the programme. The average completion rate after three additional years increases to 68%.
- In all countries with data, women have higher completion rates than men in bachelor's programmes. The largest gender gap for completion within the programme's theoretical duration is 24 percentage points in Finland.
- On average, 12% of students who enter a bachelor's programme full time leave tertiary education before the beginning of their second year of study. The share of students who have left without graduating increases to 21% by the end of the programme's theoretical duration and to 23% three years later.

Context

Tertiary completion rates can indicate the efficiency of tertiary education systems, as they show what proportion of the students who enter a tertiary programme ultimately graduate from it. However, low completion rates do not necessarily imply an inadequate tertiary system, as students may leave a programme for a variety of reasons. They may realise that they have chosen a subject or educational programme that is not a good fit for them, or they may find attractive employment opportunities before completing the programme. In some educational systems, it may also be common for students to enrol without intending to graduate from a specific programme, but rather to pursue a few courses as part of lifelong learning or upskilling such as in the Flemish Community of Belgium (De Wit, Verhoeven and Broucker, 2019[1]).

A variety of factors can influence completion rates, including students' prior educational background and social and economic characteristics. This indicator analyses the completion rate of tertiary students by gender, level of education and and field of study, as well as considering the different routes they take through tertiary education.

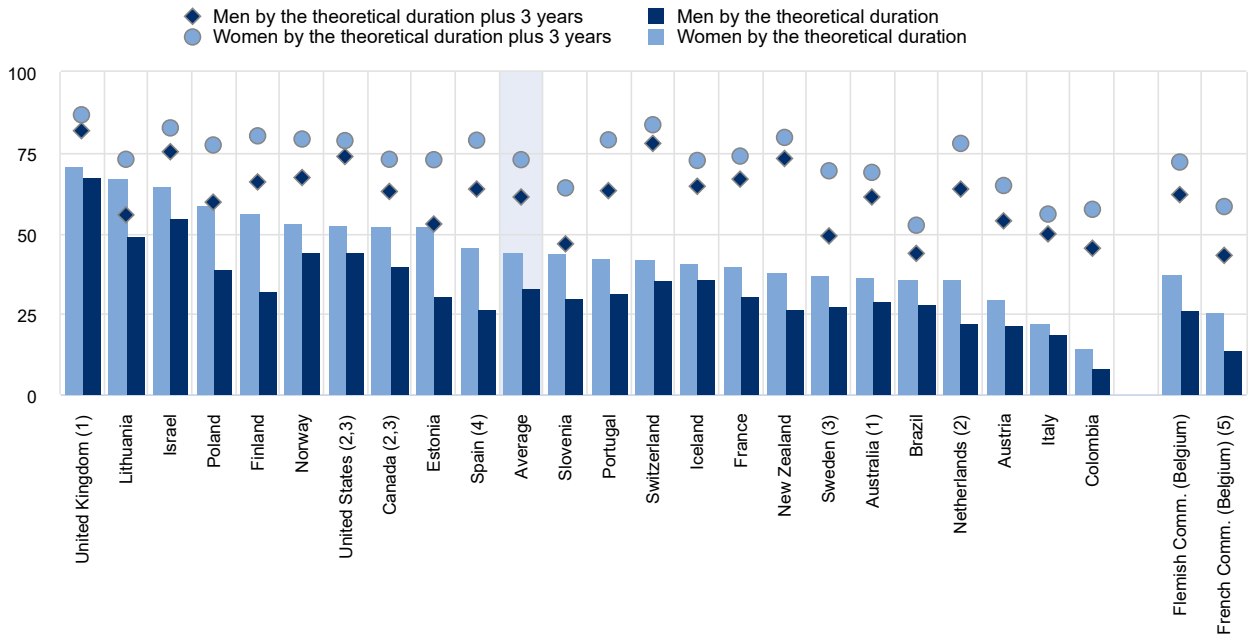
Completion of a programme may be defined differently across countries. This indicator focuses on full-time students and two timeframes for completion: 1) the share of students who graduate from any tertiary programme within the theoretical duration of the programme they entered; and 2) the share of students who graduate within three years after the end of the theoretical duration. The difference between these timeframes can shed light on the extent to which students graduate "on time" (within the amount of time expected given the theoretical duration of the programme) or after a delay. This indicator also examines the share of students who transfer between tertiary levels or leave the education system without graduating.

Other findings

- On average across countries and other participants with available data, 44% of students who entered a short-cycle tertiary programme graduated from a tertiary programme by the end of the theoretical duration of the programme they entered. In comparison, 51% of students who entered a master's long first degree graduated from any tertiary programme by the end of the theoretical duration of their programme.
- In some countries, it is not unusual for students to transfer to different tertiary levels during their studies. In France, 11% of students who had entered a bachelor's programme transferred to a short-cycle tertiary programme and 3% transferred to a master's long first degree by the beginning of their second year of study.

Figure B5.1. Completion rate of full-time students who entered a bachelor's or equivalent level, by gender and timeframe (2020)

In per cent; true cohort data only



Note: True cohort (individual-level data) and cross cohort (aggregate data) completion rates are not comparable with each other. Please refer to *Methodology* section for an explanation of the true cohort and cross cohort methodologies. The year of reference for the data (2020) corresponds to the graduation year three years after the theoretical duration of the programme. The reference year for the entrance cohort changes depending on the duration of programmes.
1. Data refer only to programmes with a theoretical duration of three, four or five years in Australia. Only programmes with a theoretical duration of three or four years are included for the United Kingdom.
2. Year of reference differs from 2020: 2019 in Canada and the Netherlands; 2017 in the United States.
3. Data are provided for the theoretical duration plus one year in Canada and plus two years for programmes in the United States (not three years). Data are provided for the theoretical duration plus one semester (not the theoretical duration) in Sweden.
4. Data on bachelor's level or equivalent programmes refer to higher education provided in universities only.
5. Data refer only to the *hautes écoles* (HE) and the *écoles des arts* (ESA), representing about 60% of entrants to bachelor's or equivalent programmes.
Countries and other participants are ranked in descending order of the share of women who graduated by the theoretical duration.
Source: OECD (2022), Table B5.1. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

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Note

Completion, graduation and attainment rates are three different measures. Completion rates, as covered in this indicator, describe the percentage of students who enter a tertiary programme and who graduate from it a given number of years later. Graduation rates represent the estimated percentage of people from a certain age cohort who are expected to graduate at some point during their lifetime. They measure the number of graduates from a level of education relative to the country's population (*Education at a Glance Database*). Attainment rates measure the percentage of a population that has reached a certain level of education (see Indicator A1). They represent the relationship between all graduates (of the given year and previous years) and the total population.

This indicator only covers full-time students. On average across OECD countries, about 21% of tertiary students are enrolled part time (see Indicator B1). The theoretical duration of tertiary programmes may vary across countries. Therefore, despite having the same reference year for graduates (2020 unless specified otherwise), the year used for entry cohorts will differ depending on the duration of the programmes.

The two timeframes this indicator uses to measure students' status are: 1) by the end of the theoretical duration of the programme in which they entered; and 2) by three years after the end of the theoretical duration of the programme.

Analysis

This indicator presents completion rates calculated using true cohort data. True cohort completion rates correspond to the share of students from a specific entry cohort who graduate within a particular timeframe. This is the preferred methodology for analysing completion rates, but only countries with longitudinal surveys or registers are able to provide such information. Panel data may be available in the form of an individual student registry (a system including unique personal identification numbers for students) or a cohort of students used to conduct a longitudinal survey. Data in this indicator refer to completion by the end of the theoretical duration of programmes and the period three years later.

Completion rates can also be calculated using cross cohort data although the results are not comparable with true cohort completion rates. Box B5.1 describes the methodology used to calculate cross cohort completion rates and presents the relevant findings for the 10 countries that submitted cross cohort data.

Completion rate by level of education at entry

Students starting bachelor's or equivalent programmes display a wide variation in completion rates within the theoretical duration across countries and other participants, ranging from 21% or less in Colombia, the French Community of Belgium and Italy to 61% or more in Israel and the United Kingdom. The completion rate after three additional years increases for all countries, but it tends to increase more where the completion rate by the theoretical duration was lower. The completion rate within the three additional years increases by 40 percentage points or more in Colombia, the Netherlands, New Zealand and Switzerland, all countries where completion rates by the theoretical duration of programmes were below the average for countries with available data. As a result, completion rates after three additional years vary less across countries, ranging from 49% in Brazil to 85% in the United Kingdom (Table B5.1).

A variety of institutional factors and country-specific characteristics can help explain the different levels of "delayed" graduation across countries. For example, in some countries it is common for students to take remedial or prerequisite courses prior to beginning the official curriculum (Campbell and Wescott, 2019[2]; Büchele, 2020[3]). In some of these countries, such as the United States, remedial courses are included as part of the time spent in tertiary education (Chen, 2016[4]). In other countries, such as Norway, students are only considered to have started a given level of education after they have completed any remedial courses, thereby not affecting the completion rate.

A large difference in completion rates three years after the end of the theoretical duration of a programme is not necessarily a negative outcome. In the Flemish Community of Belgium, for example, higher education institutions are required to offer flexible learning pathways for all programmes (OECD, 2019[5]). Students are required to take a certain number of credits to graduate, but the years of study, even if full time, may not be consecutive. This type of flexible system tends to increase the number of students who do not graduate "on time", but could benefit students in many other ways. In countries and other participants that provide relatively broad access to tertiary education, as is the case in the Flemish Community of Belgium, flexibility may be particularly important, giving students more time to meet the standards set by their educational institution.

Only 13 countries have true cohort data available for short-cycle tertiary programmes and, as with bachelor's programmes, completion rates at this level vary widely. In the United States, only about 12% of students who enter a full-time short-cycle programme full time graduate from any tertiary programme within the theoretical duration of two years, due in part to intentional fluidity between short-cycle tertiary and bachelor's programmes. In New Zealand, 65% of students graduate within this timeframe. As with bachelor's programmes, completion rates increase in all countries after three additional years, but especially in those with lower rates within the theoretical duration. The completion rate doubles in Colombia (from 21% to 43%) and more than triples in Israel (from 16% to 52%) and the United States (12% to 43%) (Table B5.1).

In most countries, the completion rate of students who enter short-cycle tertiary education is higher than for bachelor's students by the end of their programme's theoretical duration, with only five countries having a lower rate. The difference is greatest in Israel, where the completion rate of bachelor's programmes is 45 percentage points higher than for short-cycle tertiary programmes (Table B5.1). In order to put these differences into context, however, it is important to understand the share of students enrolled in each tertiary level. Austria, for example, is the only OECD country where more first-time entrants to tertiary education enrol in short-cycle programmes than in bachelor's programmes (see Indicator B4). Furthermore, bachelor's completion rates tend to be higher than short-cycle tertiary rates three additional years after the end of the theoretical duration of programmes. Only four countries have higher completion rates for short-cycle tertiary students than bachelor's students three years after the theoretical duration of their programme ended (Table B5.1).

Master's long first degree programmes have a longer theoretical duration than bachelor's programmes, and completion rates within that timeframe tend to be higher. In 7 out of the 10 countries with available data, completion rates were higher for these master's students than for those doing bachelor's degrees by the theoretical end of their programmes. Completion rates three years on were higher in all countries for students who entered master's long first degrees, ranging from 62% in Austria to 87% in Spain (Table B5.1). This may be due to the selection processes for entry to master's long first degree programmes, as well as students' own self-selection, given the greater complexity of the course content. In France, for example, master's long first degrees include engineering programmes, whose admissions process involves a competitive entrance examination, for which most students undertake two years of preparatory study (*classes préparatoires aux grandes écoles*).

In recent years, many countries have implemented a variety of policies aimed at increasing tertiary completion rates. A common approach is to make the financing of institutions conditional to some extent on student completion rates. In Estonia, for example, 20% of the funding for higher education institutions is performance-based and takes into account the share of students who graduate within specified timeframes as a key criterion (OECD, 2019[6]). There are similar conditional funding mechanisms in Finland, Israel and Lithuania. In other countries, completion rates are taken into account in the financing provided directly to students. In Norway, for example, students may have up to 40% of their student loans converted into grants if they progress through their studies without delays and meet the relevant income and residence requirements (Eurydice, 2021[7]). Since the academic year 2019/20, students in Norway have also been obliged to complete their overall degree in order to receive the full loan-to-grant conversion. In Brazil, specific financing has been provided to institutions in the past in order to help ensure that students from disadvantaged backgrounds complete their degree without excessive delays, but funding for these programmes have recently diminished for budget reasons, especially following the onset of the pandemic.

Other policies focus on helping students make better choices about their field of study, thereby reducing the number of cases where students transfer to other courses or leave tertiary education entirely due to a lack of fit with their original programme. In the Flemish Community of Belgium, for example, a study guidance tool called the "Columbus" has been established for use in secondary schools to guide students' choices about what to study in higher education (see Annex 3). In the United Kingdom, all government-backed careers information has been gathered onto the National Careers Service website to clarify the careers landscape for young adults and help them find the education programmes with the right fit (Department for Education, 2021[8]).

Some countries adjusted their tertiary graduation criteria at the end of the 2019/20 and 2020/21 academic years (or 2020 and 2021 for countries where the academic year is the calendar year) due to the COVID-19 pandemic (see Annex 3). In Austria, adjustments were made for short-cycle tertiary programmes by granting a number of concessions for the final examinations in higher technical and vocational colleges, such as reducing the written part of the examination, making oral exams voluntary and abolishing the need to present a "pre-scientific paper". In Luxembourg, the pandemic meant internships for short-cycle tertiary hospitality management degrees had to be cancelled, and were not taken into account for students' final qualification. Instead, they had to analyse and write about a case study, in order to achieve their learning outcomes. Norway and New Zealand introduced online remote exams, and Norway converted the grading scale to passed/not passed for many exams.

Box B5.1. Cross cohort completion rates

The cross cohort method is used to calculate completion rates in countries where true cohort data are not available. This method only requires the number of new entrants to a given education level and the number of graduates from the same level N years later, where N corresponds to the theoretical duration of the programme. Assuming constant student flows (constant increases or decreases in the number of students entering a given education level over these years), cross cohort completion rates are closer to true cohort completion rates over longer timeframes. This is because cross cohort completion rates take into account all graduates in a given academic year, regardless of the time it has taken them to graduate.

However, cross cohort completion rates still tend to be considerably higher than true cohort completion rates and any comparison between the two methodologies should be avoided – see Table B5.a in *Education at a Glance 2019* (OECD, 2019[9]). Instances where completion rates are over 100% in some countries, such as Hungary, Ireland and Mexico, illustrate the difference. Since true cohort data follow the progress of individuals from the same entry cohort, it is impossible for completion rates to exceed 100%. When they exceed this value in cross cohort data, this may be due to fluctuations

in student flows, but it may also be the result of specific policies affecting entrance or completion. For example, completion rates in Hungary were over 200% in 2020 due to a government decree resulting from the COVID-19 crisis, which exceptionally allowed students to graduate without taking a foreign language examination if they had passed their other examination requirements.

Table B5.a. Cross cohort completion rates of full-time tertiary students, by level of education and gender (2020)

Cross cohort only

		Entered a short-cycle tertiary programme				Entered a bachelor's (or equivalent level) programme				Entered a master's long first degree programme			
		Theoretical duration of programmes	Men (1)	Women (2)	Total (3)	Theoretical duration of programmes	Men (4)	Women (5)	Total (6)	Theoretical duration of programmes	Men (7)	Women (8)	Total (9)
OECD	**Countries**												
	Greece	a	a	a	a	4 - 6	53	68	60	a	a	a	a
	Hungary	2	72	126	103	3 - 4	201	258	231	5 - 6	186	158	169
	Ireland	1	102	112	107	3 - 4	89	96	93	a	a	a	a
	Japan	2	86	89	88	4	91	95	93	6	94	93	93
	Korea	2 - 3	80	80	80	4	92	95	94	a	a	a	a
	Latvia	2 - 3	60	57	58	3 - 4	47	50	48	m	m	m	m
	Luxembourg	2 - 3	45	45	45	2 - 4	61	73	67	a	a	a	a
	Mexico	2	56	63	59	4	61	71	66	2	100	103	102
	Slovak Republic	2 - 3	79	77	78	3 - 4	55	71	64	5 - 6	85	86	86
	Türkiye	2	68	79	74	4	84	87	86	5 - 6	93	105	99
	Other participants												
	Flemish Comm. (Belgium)	m	m	m	m	3	76	91	84	m	m	m	m
	French Comm. (Belgium)	a	a	a	a	3	63	76	70	a	a	a	a
	Average		72	81	77		82	95	89		112	109	110

Note: Completion rates based on true cohort (individual-level) and cross cohort (aggregate) data are not comparable with each other. See *Definitions* and *Methodology* sections for more information. Please note that the year of reference for the data (2020) corresponds to a period three years after the theoretical end of the programme (2017). The reference year for students' entry to study may differ depending on the duration of their programme.
Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

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Cross cohort completion rates range from 48% in Latvia to 231% in Hungary. At short-cycle tertiary level, completion rates range from 45% in Luxembourg to 100% or more in Hungary and Ireland. The difference in completion rates between bachelor's and short-cycle programmes varies across countries. In Luxembourg, completion at short-cycle tertiary level is more than 20 percentage points lower than at bachelor's level. The opposite is true in Ireland and the Slovak Republic, where the completion rate of short-cycle tertiary programmes is 14 percentage points higher than that of bachelor's programmes (Table B5.a).

Completion rate by gender

In every country and other participants with available data, women in bachelor's programmes have higher completion rates than men. On average across countries with true cohort data, 44% of female entrants and 33% of male entrants to bachelor's programmes graduate within the theoretical duration. The average gap remains similar after allowing three additional years, as the completion rate increases to 73% among women and 61% among men (Figure B5.1).

Some countries have a narrower gender gap than others. The difference in the completion rates between women and men within the theoretical duration is below 7 percentage points in Colombia, Iceland, Italy, Switzerland and the United Kingdom for students in bachelor's programmes, but over 20 percentage points in Estonia and Finland. In 19 out of 23 participants with

available data, the gender gap in completion rates of bachelor's students did not change greatly after three years following the theoretical end of programmes, with differences of less than 5 percentage points. Of the remaining countries, the gender gap widened in Colombia, Portugal and Sweden after three additional years, but it narrowed in Finland (Table B5.1).

Some of the gender differences in completion rates may be due to national policies on military or alternative service that affect men and women differently. For example, in Finland, all male citizens between the ages of 18 and 60 are obliged to perform military service (obligatory military service for men is performed usually at the age of 19-20 years), but female citizens only undertake such service on a voluntary basis. This may help to explain why a larger share of women (56%) entering bachelor's programmes complete their studies by the end of their theoretical duration than men (32%), and why the gender difference in completion rates falls from 24 to 14 percentage points for the longer timeframe (Figure B5.1). In Estonia too, military service is only compulsory for men and women's completion rates (52%) are considerably higher than those of men (31%) by the end of the theoretical duration of programmes. However, the difference in completion rates by gender does not change much in the three years that follow, suggesting that the fulfilment of conscription requirements is not the primary reason why women are more likely to complete their programme (Figure B5.1).

Differences in the completion rates of men and women may also be partly explained by the different returns to tertiary education by gender. Employment rates are higher for adults with tertiary education than those with upper secondary or post-secondary non-tertiary attainment for both men and women. However, employment rates for men with tertiary education are only 5 percentage points higher on average across OECD countries than for those with upper secondary or post-secondary non-tertiary education, whereas the difference was 15 percentage points for women (see Indicator A3). The average private rate ofreturn for each USD invested in tertiary education also tends to be slightly higher for women than for men (see Indicator A5 in *Education at a Glance 2021* (OECD, 2021[10])). In Estonia and Sweden, where women's completion rates are 20 percentage points higher than men's by the theoretical duration of programmes plus three years, women gain far greater private financial benefits from attaining tertiary education than men for their private costs. The average private financial benefit for each USD invested in tertiary education is around USD 5 for a man and USD 9 for a woman in Estonia, while it is around USD 3 for a man and USD 6 for a woman in Sweden (OECD, 2021[10]).

Pathways through tertiary education

In addition to students' completion rates, it is important to examine their different paths through tertiary education. This helps understand the flexibility and effectiveness of education systems. It can also shed light on the other group of students – those who have not graduated. Are they still in education? Have they transferred to a different tertiary level? Or have they left the system without graduating?

After the first year of study

Examining students' status right after their first year of study can be very helpful to understanding what happens during their first contact with tertiary education. This could reflect, among other things, the effectiveness of any student orientation or their preparedness for tertiary education. On average across countries with available data, 12% of students who entered a bachelor's programme were no longer enrolled in any tertiary programme by their second year of study, about 2% had transferred to another tertiary level and 86% were still enrolled in the same or another bachelor's programme (Table B5.2).

In some countries, students may commonly enter one tertiary level but graduate from a different level. A large share of such transfers between tertiary levels tends to take place very soon after students have entered a programme. In France, for example, 11% of students who entered a bachelor's programme had transferred to a short-cycle programme and 3% had transferred to a long first degree by the beginning of their second year of study (Table B5.2).

The share of students who are no longer enrolled after their first year of studies ranges from 5% in the United States to 20% or more in Colombia, Iceland and the French Community of Belgium. Large shares of students leaving after just one year can be particularly concerning given that the share of students who leave the system without graduating tends to increase considerably with time. Indeed, by three years after the end of theoretical duration of the programme the share of such students has nearly doubled – and even tripled in some cases – in most countries with available data (Table B5.2).

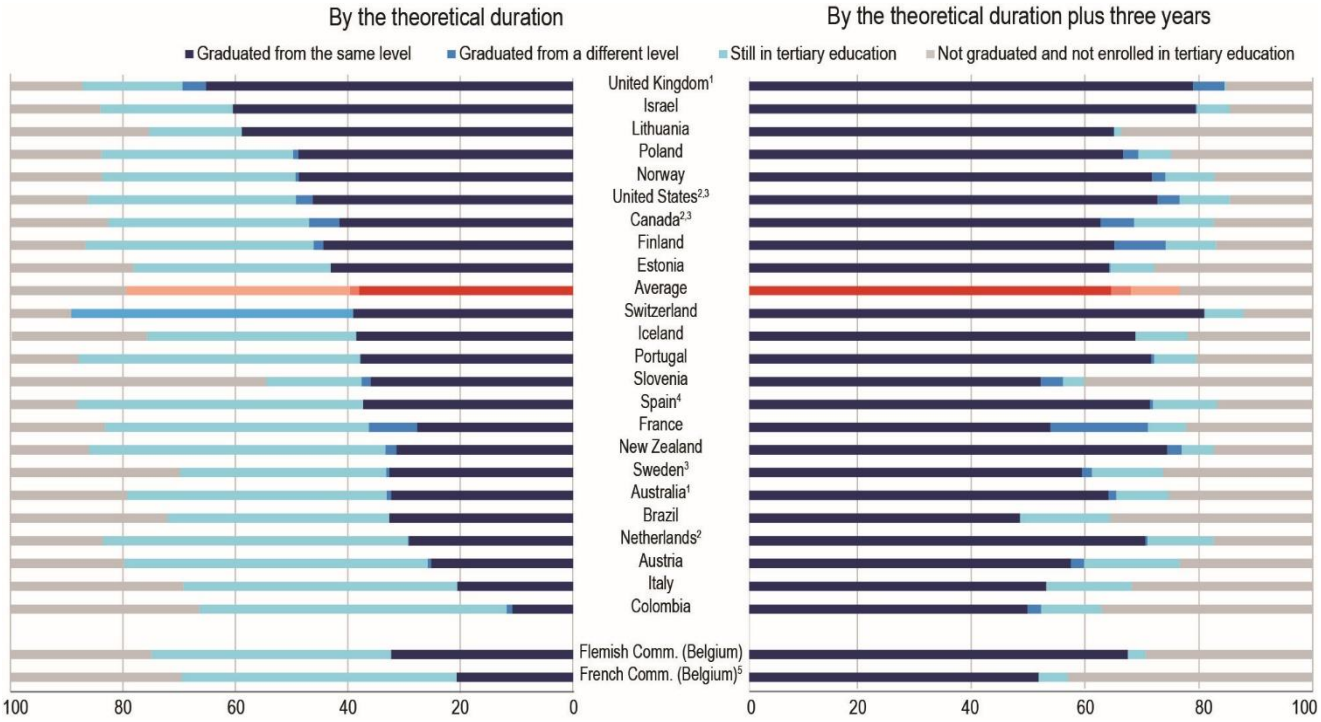
After the theoretical end of the programme and beyond

On average across countries and other participants with available data, 38% of students who entered a bachelor's programme graduated from that or another bachelor's programme by the end of the theoretical duration. About 1% had transferred and

graduated instead from a short-cycle tertiary programme, 40% were still in tertiary education (even if at a different level) and 21% had not graduated and were no longer enrolled in any tertiary programme. The picture evolves considerably over the three years that follow, as many of those who were still in education either graduate or leave the system. Three years after the theoretical duration of the programme, on average, 65% of students have graduated from a bachelor's programme, 2% have graduated from a short-cycle tertiary programme and 1% from a master's long first degree programme. Some 9% are still in education and 23% are no longer enrolled (Figure B5.2 and Table B5.2).

Figure B5.2. Status of full-time bachelor's students, by timeframe (2020)

In per cent



Note: The year of reference for the data (2020) corresponds to the graduation year three years after the theoretical end of the programme. The reference year for the entrance cohort changes depending on the duration of programmes.
1. Data refer only to programmes with a theoretical duration of three, four or five years in Australia. Only programmes with a theoretical duration of three or four years are included for the United Kingdom.
2. Year of reference differs from 2020: 2019 in Canada and the Netherlands; 2017 in the United States.
3. Data are provided for the theoretical duration plus one year in Canada and plus two years in the United States (not three years). Data are provided for the theoretical duration plus one semester (not the theoretical duration) in Sweden.
4. Data on bachelor's level or equivalent programmes refer to higher education provided in universities only.
5. Data refer only to the hautes écoles (HE) and the écoles des arts (ESA), representing about 60% of entrants to bachelor's or equivalent programmes.
Countries and other participants are ranked in descending order of the share of students who graduated by the theoretical duration.
Source: OECD (2022), Table B5.2. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

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High transfer rates between tertiary levels can help to explain some delays in graduation. Delays might be expected if there are difficulties in transferring credits, or if students transfer to a programme with a longer theoretical duration (students' status is always measured against their original programme's theoretical duration). Transfer rates among students who enter bachelor's programmes are among the highest in France, where about 16% graduate from a short-cycle tertiary programme and 1% graduate from a long first degree within the theoretical duration of the original programmes plus three years (Table B5.2).

The overall evolution in students' status between the end of the theoretical duration of programmes and three years later differs across countries. Completion rates increase by over 40 percentage points in the Netherlands, New Zealand and Switzerland, compared to only 6 percentage points in Lithuania. There are also differences in what happens to students who

were still in education by the end of the theoretical duration of the programme. In both Switzerland and Portugal, for example, 50% of students were still in education by the end of the theoretical duration of the programme and 7% of students were still in education three years later. However, in Switzerland, the completion rate increased by 42 percentage points within these three years and the share of students who had left tertiary education without graduating stayed relatively stable. In Portugal, the completion rate increased by 34 percentage points but the share of students who had left tertiary education also rose by 8 percentage points (Table B5.2).

Delayed completion, or even non-completion, can be costly to both governments and individuals. The cost of tertiary education is high, and students and governments may not reap the full benefits until the degree is completed. Data show that individuals with a tertiary qualification tend to have higher earnings and higher employment rates, which in turn translate into higher taxes and higher social contributions for the government (see Indicator A5 in *Education at a Glance 2021* (OECD, 2021[10])). Nevertheless, delaying graduation or dropping out are not necessarily symptoms of student or institutional failure. In some countries, the labour market recognises the partial completion of tertiary degrees, either formally or informally, which may encourage students to work part time (and potentially delay graduation) or to drop out and join the labour market full time. Students may also "stop out" – temporarily withdrawing from tertiary education before re-enrolling to complete their studies (Box B5.2)

Completion by type of institution

In most OECD countries, higher education is offered in both public and private institutions (see Indicator B1). In public institutions, a public agency has overall control over the general policies and activities of the institution including staff appointments. Private institutions may be managed by non-governmental organisations or by a governing board, most of whose members are not selected by a public agency. However, there can be significant differences in the ways in which private institutions are regulated, managed and funded (UNESCO-UIS/OECD/Eurostat, 2021[11]). In the United Kingdom, for example, all higher education institutions are private but receive most of their funding from the government; however, these types of government-dependent institutions do not exist in many OECD countries, although significant shares of students may attend higher education in a private institution (see Indicator B1).

Most private higher education institutions function on a not-for-profit basis, so surplus revenue cannot be paid to their owners (OECD, 2019[5]). However, there have been increasing numbers of for-profit private institutions emerging in some OECD countries (Shah and Sid Nair, 2013[12]). Some research suggests that for-profit institutions may be more responsive to market demand through their ability to adapt their programme offerings to meet students' and employers' needs (Gilpin, Saunders and Stoddard, 2015[13]); however, they have also been criticised for being focused on financial gain at the expense of students' educational outcomes (Hodgman, 2018[14]).

Completion rates can be one way to compare educational outcomes by type of institution. On average, a greater share of students who entered a bachelor's programme in a private institution (45%) graduated within the theoretical duration of their programme than those who entered a public institution (38%). The differences in completion rates were particularly pronounced in some countries, such as New Zealand, where the completion rate of students who entered private institutions was more than double that of students from public institutions, and Austria, where it was more than five times as high. In only 5 out of 20 OECD countries and other participants with available data were completion rates by the theoretical duration higher in public institutions than in private ones (Figure B5.3).

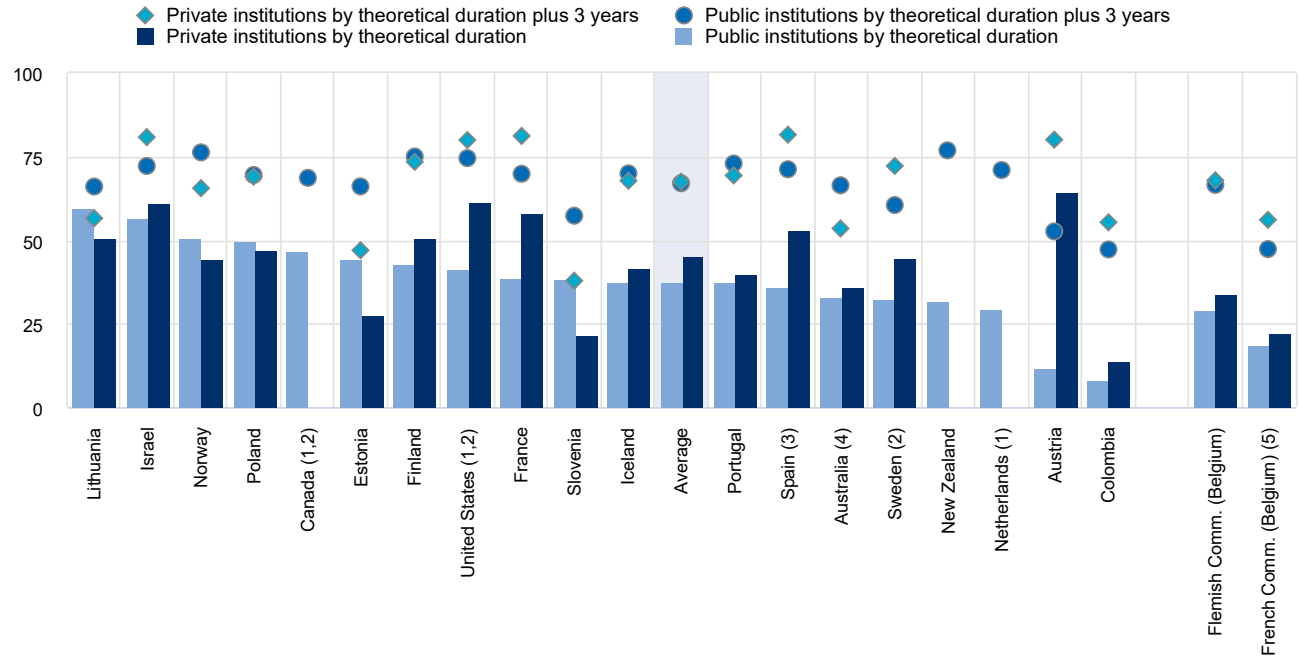
When considering completion rates over the longer timeframe, these differences by type of institution on entry decreased in about half of the countries with available data. Three years after the theoretical end of their bachelor's programme, completion rates went from being higher for students who entered private institutions to higher for students who entered public ones in Australia, Finland, Iceland and Portugal. There were no countries in which completion rates were higher for students who entered public institutions by the end of the theoretical duration of their programme, but higher for students from private institutions three years later (Table B5.3).

A variety of factors may contribute to differences in completion rates between public and private institutions. In Austria, differences may be partially explained by differences in the organisation of teaching and learning. Students attending private universities, as well as universities of applied sciences, tend to rate the quality of teaching and the structure of their courses more positively than students in public institutions, and survey data also suggest that they experience a higher intensity of study on average than students enrolled in public universities (Zucha, Zaussinger and Unger, 2020[15]; Unger et al., 2020[16]). Further to this, entry to many fields of study in public institutions does not require sitting an admissions exam (OECD/European Union, 2019[17]).

Some gaps in completion rates may be explained by differences in the programmes offered. In New Zealand, for example, private higher education provision was allowed to proliferate from 1989, when the public higher education sector was already well developed (Xiaoying and Abbott, 2008[18]). Private higher education therefore expanded into niche areas of the market and private institutions tend to offer more specialised, professional courses, particularly in business and information and communication technologies (ICT). Vocationally motivated students, seeking very particular programmes, may be less likely to change course and more likely to complete their studies by the end of their theoretical duration.

Figure B5.3. Completion rates of full-time bachelor's students, by type of institution entered and timeframe (2020)

In per cent; true cohort data only



Note: The year of reference for the data (2020) corresponds to the graduation year three years after the theoretical end of the programme. The reference year for the entrance cohort changes depending on the duration of programmes.
1. Year of reference differs from 2020: 2019 in Canada and the Netherlands; 2017 in the United States.
2. Data are provided for the theoretical duration plus one year in Canada and plus two years in the United States (not three years). Data are provided for the theoretical duration plus one semester (not the theoretical duration) in Sweden.
3. Data on short-cycle programmes refer only to specific vocational training – advanced level programmes. Data on bachelor's level or equivalent programmes refer to higher education provided in universities only.
4. Data refer only to programmes with a theoretical duration of three, four or five years in Australia.
5. Data refer only to the hautes écoles (HE) and the écoles des arts (ESA), representing about 60% of entrants to bachelor's or equivalent programmes.
Countries and other participants are ranked in descending order of the share of entrants to bachelor's programmes in public institutions who graduated by the theoretical duration.
Source: OECD (2022), Table B5.3. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

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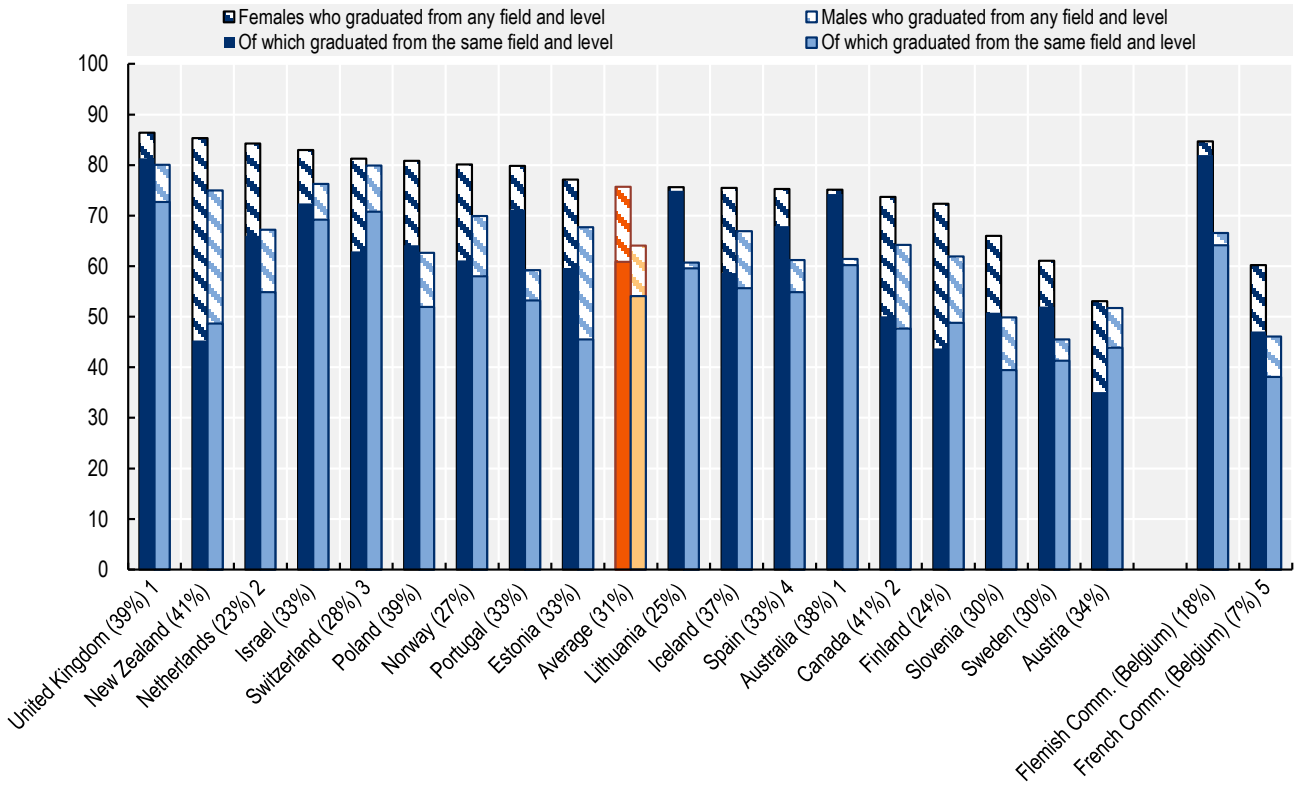
Completion by field of study

Completion rates also vary according to the field of study that students entered. For example, 80% of full-time bachelor's students who entered the field of health and welfare had graduated from some tertiary programme three years after the theoretical duration of their studies, compared to only 68% of students who entered a science, technology, engineering and mathematics (STEM) programme on average in OECD participants with available data. The differences in completion rates

are more marked for particular fields, especially in some countries. In Sweden, the completion rate for students who entered health and welfare programmes was 31 percentage points higher than for students who entered STEM, but it was only 2 percentage points higher than for students who entered the field of education. In contrast, differences in completion rates were less than 5 percentage points among all three of these fields of study in New Zealand and the United Kingdom (Table B5.4).

Figure B5.4. Completion rates of full-time science, technology, engineering and mathematics bachelor's students, by field and level of graduation and gender (2020)

By the end of the theoretical duration of the programme plus three years; in per cent; true cohort data only



Note: The year of reference for the data (2020) corresponds to the graduation year three years after the theoretical end of the programme. The reference year for the entrance cohort changes depending on the duration of programmes. The share of students entering STEM fields who are women is shown in parentheses next to each country name"

1. Data refer only to programmes with a theoretical duration of three, four or five years in Australia. Only programmes with a theoretical duration of three or four years are included for the United Kingdom.
2. Year of reference differs from 2020: 2019 in Canada and the Netherlands. Timeframe of reference differs in Canada, where data are provided for the theoretical duration of the programme plus one year (not three years).
3. Data on graduation in the same field and level include students who graduated from a master's long first degree programme.
4. Data on graduation from any tertiary programme exclude graduation from short-cycle tertiary.
5. Data refer only to the *hautes écoles* (HE) and the *écoles des arts* (ESA), representing about 60% of entrants to bachelor's or equivalent programmes.

Countries and other participants are ranked in descending order of the share of women entering a STEM field who graduated by the theoretical duration plus three years from any field and tertiary level.

Source: OECD (2022), Table B5.4. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

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Differences between completion rates by field of study are related to the labour-market opportunities that are available to individuals in various professions. In some countries, like Lithuania, Norway and Sweden, demand for workers with relevant skills means that students who have partially completed programmes in certain fields – particularly ICT – may find employment without fully finishing their degree. On the other hand, professions in education and health and welfare are often regulated

and relevant qualifications are required to start work, meaning that students have a greater incentive to fully complete their studies (see Box B4.2 in Indicator B4).

Not all of the students who had graduated had done so within the same field or education level that they entered, although the degree to which students tend to change programme before graduation also differs by field of study. On average across OECD countries and other participants with available data, only 5% of students who entered health and welfare programmes graduated from another field of study or level. In contrast, this was the case for 8% of education students and 12% of STEM students (Table B5.4).

There were also gender differences in completion after a change in programme by field. In more than two-thirds of OECD participants, smaller shares of women than men who entered an education or health and welfare programme changed field or level before completing their studies (Table B5.4). After starting a STEM programme, however, larger shares of women changed field or level before graduating than men in 14 out of 19 OECD countries and other participants (Figure B5.4). In Austria, Finland, New Zealand and Switzerland, a greater share of male students than female students actually completed the bachelor's programme in the STEM field that they entered. However, larger shares of their female peers had completed a tertiary programme overall by the end of the theoretical duration of their programme plus three years, including those who had changed the field or education level of their course (Table B5.4).

Given that women are in the minority among new entrants to STEM fields of study (see Indicator B4), it is concerning to see larger shares of them changing programme or level before graduating than men in most contexts. Research suggests that this may be related to isolation, micro-aggressions and a male-dominated culture experienced by women studying in STEM (Ong, Smith and Ko, 2018[19]; Blackburn, 2017[20]). Women might experience less of a sense of belonging then men in STEM-related fields, which has been associated with a decreased likelihood of persisting in their programme (Lewis et al., 2017[21]). To tackle such issues, several OECD members have taken measures to promote STEM in schools to counter gender stereotyping in STEM and advance women in STEM education and careers. In Australia, for example, the "Restoring the focus on STEM in schools" initiative was launched in 2015, which aimed to increase the number of girls and disadvantaged students in Summer Schools for STEM students as one of its key objects (OECD, 2017[22]). Higher education institutions can also adapt their teaching methods and curricula, and implement mentoring programmes to support women during their studies to reduce attrition after students have started their courses (Do et al., 2021[23]).

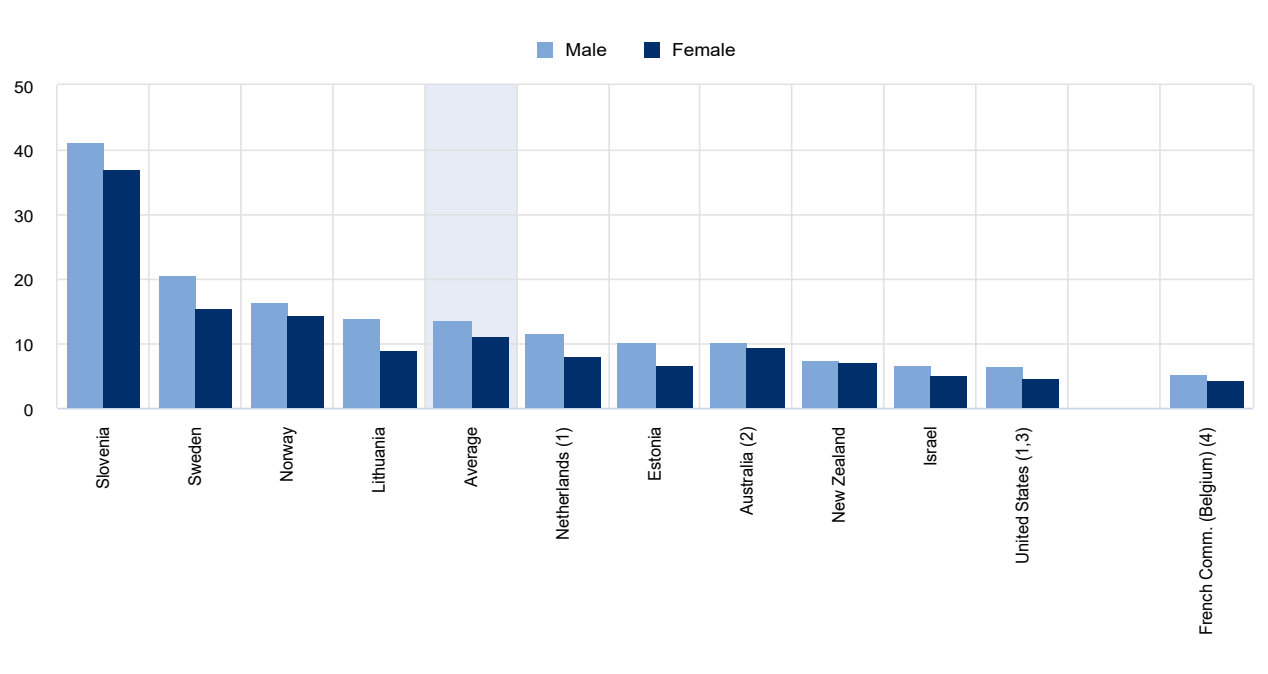
Box B5.2. Experiences of stop-out

"Stop-out" behaviour refers to re-enrolment or re-entry to a tertiary programme after a temporary period of withdrawal from higher education. As noted above, the share of students who complete tertiary education – and the share who do not – can be of interest to policy makers in assessing the efficiency of higher education programmes and providers, particularly in fields and countries where there is no recognition of partial degree completion in the labour market. In this context, an examination of stop-out behaviour can be helpful in understanding how well the education system is able to re-engage students and adapt to their evolving needs.

Figure B5.5 shows the share of bachelor's students who spent at least one year out of education as a share of those who had either graduated or were still in tertiary education by the theoretical duration of the programme plus three years. It shows that there are considerable differences between countries and other participants in terms of the share of students re-entering tertiary education after withdrawing for some time. In the French Community of Belgium, Israel, New Zealand and the United States, the share of students who had experienced a period of stop-out was less than 10% for both men and women. In contrast, nearly 40% of students in Slovenia had experienced such a stop-out. In all cases, men are more likely to have experienced a period of stop-out than women, although in some countries and participants the difference is very small. Among OECD participants with available data, 14% of male bachelor's students had experienced a period of temporary withdrawal from tertiary education on average, while the same was true for 11% for female students.

Figure B5.5. Share of full-time bachelor's students who spent at least one year out of education and graduated or re-enrolled by theoretical duration plus three years, by gender (2020)

In per cent; true cohort data only



Note: Countries may identify years spent out of education differently. Further details can be found in Annex 3. The year of reference for the data (2020) corresponds to the graduation year three years after the theoretical end of the programme. The reference year for the entrance cohort changes depending on the duration of programmes.
1. Year of reference differs from 2020: 2019 in the Netherlands; 2017 in the United States.
2. Data refers only to programmes with a theoretical duration of 3, 4, or 5 years in Australia.
3. Data are provided for the theoretical duration plus two years for programmes in the United States (not three years).
4. Data refers only to the *hautes écoles* (HE) and the *écoles des arts* (ESA), representing about 60% of entrants to bachelor's or equivalent programmes.
Countries and other participants are ranked in descending order of the share of male students who left tertiary education but re-enrolled or graduated by the theoretical duration plus 3 years.
Source: OECD (2022), Table B5.1. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

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There are a multitude of reasons why students may choose to leave their tertiary education programme, whether temporarily or permanently. It may be for personal reasons, work or financial reasons, or dissatisfaction with their programme or institution (UPCEA/StraighterLine, 2021[24]). Local labour-market conditions can also have an influence on students' likelihood of completing their studies, depending on unemployment rates and students' perceptions of the expected returns from completing their degree (Aina et al., 2018[25]). Some system-level policies may also facilitate periods of temporary withdrawal from tertiary education. For example, in Slovenia, students are able to keep their student status for an extra year after the end of their studies, during which time they may retake some assessments, get a student job or remain inactive (Farcnik, Domadenik Muren and Franca, 2021[26]). In Sweden, students may take freestanding courses, combining multiple options to attain a bachelor's or master's degree, and pause their studies without losing credits when they decide to re-enter their programme (Carlhed Ydhag, 2020[27]). These policies help to explain why there are relatively high shares of students with stop-out experiences in these two countries, and why there has been a decrease in the share of bachelor's students reported as having left tertiary education without graduating in the three years following the theoretical end of programmes (Table B5.2).

Definitions

The **true cohort** method requires following an entry cohort through a specific timeframe, which in the case of this survey corresponds to the theoretical duration of the programme and the theoretical duration plus three years. Only countries with longitudinal surveys or student registers are able to provide such information.

The **cross cohort** method only requires the number of new entrants to a given ISCED level and the number of graduates N years later, where N corresponds to the theoretical duration of the programme.

Full-time students in this indicator refer to students who entered the given tertiary programme with full-time status. They may have switched status during their studies.

The **theoretical duration** of programmes is the regulatory or common-practice time it takes a full-time student to complete a level of education.

Methodology

For countries that submitted data using the true cohort method, it is possible to calculate two different completion rates (described below) which are computed for two different timeframes (theoretical duration N and three years later, N+3):

- completion rate of students who graduate at the same ISCED level which they entered: number of graduates in a given calendar year and ISCED level divided by the number of entrants to that same ISCED level N/N+3 calendar years before
- completion rate of students who graduate at any tertiary ISCED level: the sum of graduates from all tertiary ISCED levels in a given calendar year who entered a given ISCED level N/N+3 calendar years before.

Countries that submitted true cohort data either used first-time entrants to tertiary education (which considers only students who entered tertiary education for the first time) or new entrants to the tertiary level (which considers all first-time entrants to each tertiary level, regardless of whether they have pursued a different tertiary level before). Please see Annex 3 for the list of countries using each methodology (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

For cross cohort data, only one completion rate is calculated: the number of graduates in a given calendar year and ISCED level divided by the number of entrants to that same ISCED level N calendar years before.

If countries offer programmes of different theoretical durations within the same ISCED level, the completion rate of each programme is weighted by the number of new entrants to each programme.

Please see the *OECD Handbook for Internationally Comparative Education Statistics 2018* (OECD, 2018[28]) for more information and Annex 3 for country-specific notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

Source

Data on completion rates refer to the academic year 2019/2020 and were collected through a special survey undertaken in 2021. Data for some countries may have a different reference year, please refer to Annex 3 for country-specific notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).Countries submitted data using either the true cohort or cross cohort methodology.

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Indicator B5 Tables

Tables Indicator B5. How many students complete tertiary education?

Table B5.1	Completion rate of full-time students by level of education, timeframe, and gender (2020)
Table B5.2	Status of full-time bachelor's students at various timeframes after entry (2020)
Table B5.3	Completion rates of full-time students who entered a bachelor's or equivalent level by type of institution upon entry, gender and timeframe (2020)
Table B5.4	Completion rates of full-time bachelor's students by gender in selected fields of study at the theoretical duration plus three years (2020)

StatLink https://stat.link/7nhldy

Cut-off date for the data: 17 June 2022. Any updates on data can be found on line at http://dx.doi.org/10.1787/eag-data-en. More breakdowns can also be found at http://stats.oecd.org/, Education at a Glance Database.

Table B5.1. Completion rates of full-time students, by level of education, timeframe

True cohort only

		Panel A: Completion rates of students who entered a bachelor's (or equivalent) programme and completed any tertiary level						Panel B: Completion rates of students who entered a short-cycle tertiary programme and completed any tertiary level						Panel C: Completion rates of students who entered a master's long first degree programme and completed any tertiary level					
		Theoretical duration of programmes	By the end of the theoretical duration of the programme			By the end of the theoretical duration of the programme plus three years			Theoretical duration of programmes	By the end of the theoretical duration of the programme			By the end of the theoretical duration of the programme plus three years			Theoretical duration of programmes	By the end of the theoretical duration of the programme			By the end of the theoretical duration of the programme plus three years		
			Men	Women	Total	Men	Women	Total		Men	Women	Total	Men	Women	Total		Men	Women	Total	Men	Women	Total
		(1)	(2)	(3)		(4)	(5)	(6)		(7)	(8)	(9)	(10)	(11)	(12)		(13)	(14)	(15)	(16)	(17)	(18)
OECD	**Countries**																					
	Australia[1]	3 - 5	29	36	33	61	69	66	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Austria	3	21	29	26	54	65	60	2	56	64	60	78	84	81	6	33	41	38	57	66	62
	Brazil	4 - 5	28	36	33	44	52	49	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Canada[2, 3]	4	40	52	47	63	73	69	2	29	37	34	47	58	53	m	m	m	m	m	m	m
	Colombia	5	9	14	12	45	57	52	2 - 3	22	21	21	43	43	43	m	m	m	m	m	m	m
	Estonia	3 - 4	31	52	43	53	73	64	a	a	a	a	a	a	a	5 - 6	27	57	43	59	80	70
	Finland	4	32	56	46	66	80	74	a	a	a	a	a	a	a	m	m	m	m	m	m	m
	France	3	31	40	36	67	74	71	2	59	70	64	76	83	79	5	57	59	58	m	m	m
	Iceland	3 - 4	36	41	39	64	73	69	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Israel	3 - 4	55	65	61	75	83	80	1 - 3	15	19	16	50	57	52	a	a	a	a	a	a	a
	Italy	3	19	22	21	50	56	53	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Lithuania	3 - 4	49	67	59	56	73	65	a	a	a	a	a	a	a	5 - 6	63	77	72	71	81	78
	Netherlands[2]	3 - 4	22	36	29	64	78	71	m	m	m	m	m	m	m	a	a	a	a	a	a	a
	New Zealand	3	27	38	33	73	80	77	2	59	69	65	69	75	73	a	a	a	a	a	a	a
	Norway	3 - 4	44	53	49	67	79	74	2	58	33	50	64	49	59	5 - 6	37	46	42	80	87	84
	Poland	3 - 4	39	58	50	60	77	69	m	m	m	m	m	m	m	2 - 5	39	53	48	69	79	75
	Portugal	3	32	43	38	63	79	72	2	47	62	52	58	71	63	5	59	74	67	79	89	84
	Slovenia	4 - 5	30	44	38	47	64	56	3	15	19	17	28	36	31	6 - 7	36	43	41	73	84	81
	Spain[4]	4	27	46	37	64	79	72	2	51	63	57	71	79	75	5 - 6	52	61	58	82	90	87
	Sweden[3]	3	28	37	33	49	69	61	2	58	71	64	66	78	72	4 - 5	34	43	38	64	78	71
	Switzerland	3	36	42	39	78	84	81	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	United Kingdom[1]	3 - 4	67	71	69	82	87	85	2	58	65	62	73	80	77	a	a	a	a	a	a	a
	United States[2, 3]	4	45	53	49	74	79	77	2	13	11	12	42	43	43	a	a	a	a	a	a	a
	Other Participants																					
	Flemish Comm. (Belgium)	3	26	37	32	62	72	68	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	French Comm. (Belgium)[5]	3 - 4	14	26	21	43	58	52	a	a	a	a	a	a	a	a	a	a	a	a	a	a
	Average		33	44	39	61	73	68		41	46	44	59	64	62		44	56	51	70	82	77

Note: Completion rates based on true cohort (individual-level) and cross cohort (aggregate) data are not comparable with each other. See *Definitions* and *Methodology* sections for more information. Please note that the year of reference for the data (2020) corresponds to a period three years after the theoretical end of the programme (2017). The reference year for students' entry to study may differ depending on the duration of their programme.

1. Data on bachelor's and equivalent programmes refer only to those with a theoretical duration of three, four or five years in Australia. Only bachelor's programmes with a theoretical duration of three or four years are included for the United Kingdom.

2. Year of reference differs from 2020: 2019 in Canada and the Netherlands; 2017 for bachelor's programmes and 2016 for short-cycle tertiary programmes in the United States.

3. Timeframes of reference differ. Data are provided for the theoretical duration of the programme plus one year in Canada and plus two years for bachelor's programmes in the United States (not three years). Data are provided for the theoretical duration of the programme plus one semester (not the theoretical duration) in Sweden.

4. Data on short-cycle programmes refer only to specific vocational training – advanced level programmes. Data on bachelor's or equivalent programmes refer to higher education provided in universities only.

5. Data refer only to the *hautes écoles* (HE) and the *écoles des arts* (ESA), representing about 60% of entrants to bachelor's or equivalent programmes.

Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/qcxb2i

Table B5.2. Status of full-time bachelor's students at various timeframes after entry (2020)

True cohort only

		By the beginning of the second year of study				By the end of the theoretical duration of the programme					By the end of the theoretical duration of the programme plus three years				
			Transferred to:			Graduated from:					Graduated from:				
		Still enrolled in bachelor's (or equivalent programme)	Short-cycle tertiary	Master's long first degree	Not enrolled in tertiary education[1]	Bachelor's or equivalent	Short-cycle tertiary	Master's long first degree	Still in tertiary education	Not graduated and not enrolled in tertiary education	Bachelor's or equivalent	Short-cycle tertiary	Master's long first degree	Still in tertiary education	Not graduated and not enrolled in tertiary education
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
OECD	**Countries**														
	Australia[2]	84	2[d]	x(2)	15	32	1[d]	x(6)	46	21	64	1[d]	x(11)	9	25
	Austria	85	1	2	13	25	0	0	54	20	58	1	1	17	23
	Brazil	89	0	a	11	33	0	a	39	28	49	0	a	16	36
	Canada[3, 4]	84	1	a	14	42	5	a	36	17	63	6	a	14	17
	Colombia	73	1	x(4)	26[d]	11	1	x(9)	55	34[d]	50	2	x(14)	11	37[d]
	Estonia	86	a	1	14	43	a	0	35	22	64	a	0	8	28
	Finland	91	a	1	8	44	a	2	41	13	65	a	9	9	17
	France	70	11	3	17	28	9	0	47	17	54	16	1	7	22
	Iceland	79	0	0	20	39	0	0	37	24	69	0	0	9	21
	Israel	92	0	a	8	60	0	a	23	16	79	0	a	6	15
	Italy	86	0	0	14	21	0	0	49	31	53	0	0	15	32
	Lithuania	90	a	1	9	59	a	0	16	25	65	a	0	1	34
	Netherlands[3]	88	0	a	11	29	0	a	54	16	71	0	a	12	17
	New Zealand	90	1	a	9	31	2	a	53	14	74	2	a	6	17
	Norway	86	0	2	12	49	0	1	34	16	72	0	2	9	17
	Poland	85	0	0	15	49	0	1	34	16	67	0	3	6	25
	Portugal	90	0	1	8	38	0	0	50	12	72	0	0	7	20
	Slovenia	77	5	0	18	36	2	0	17	45	52	4	0	4	40
	Spain[5]	93	x(4)	1	7[d]	37	x(9)	0	51	12[d]	71	x(14)	1	11	17[d]
	Sweden[4]	87	0	1	11	33	0	0	37	30	59	0	1	12	26
	Switzerland	92[d]	0	x(1)	8	39[d]	0	x(5)	50	11	81	0	x(10)	7	12
	United Kingdom[2]	91	0	0	9	65	4	0	18	13	79	6	0	0	15
	United States[3, 4]	92	3	a	5	46	3	a	37	14	73	4	a	9	15
	Other participants														
	Flemish Comm. (Belgium)	87	0	0	13	32	0	0	43	25	68	0	0	3	29
	French Comm. (Belgium)[6]	80	a	a	20	21	a	a	49	30	52	a	a	5	43
	Average	86	1	1	12	38	1	0	40	21	65	2	1	9	23

Note: Completion rates based on true cohort (individual-level) and cross cohort (aggregate) data are not comparable with each other. See *Definitions* and *Methodology* sections for more information. Please note that the year of reference for the data (2020) corresponds to a period three years after the theoretical end of the programme (2017). The reference year for students' entry to study may differ depending on the duration of their programme.

1. The columns for "not enrolled in tertiary education" or "not graduated and not enrolled in tertiary education" may include students who left the country before graduation.
2. Data on bachelor's and equivalent programmes refer only to those with a theoretical duration of three, four or five years in Australia. Only bachelor's programmes with a theoretical duration of three or four years are included for the United Kingdom.
3. Year of reference differs from 2020: 2019 in Canada and the Netherlands; 2017 in the United States.
4. Timeframes of reference differ. Data are provided for the theoretical duration of the programme plus one year in Canada and plus two years in the United States (not three years). Data are provided for the theoretical duration of the programme plus one semester (not the theoretical duration) in Sweden.
5. Data on short-cycle programmes refer only to specific vocational training – advanced level programmes. Data on bachelor's level or equivalent programmes refer to higher education provided in universities only.
6. Data refer only to the *hautes écoles* (HE) and the *écoles des arts* (ESA), representing about 60% of entrants to bachelor's or equivalent programmes.

Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/ksdfmj

Table B5.3. Completion rates of full-time students who entered a bachelor's (or equivalent level) programme, by type of institution upon entry, timeframe and gender (2020)

True cohort only

		Share of students entering public institutions	Public institutions						Private institutions					
			By the end of the theoretical duration of the programme			By the end of the theoretical duration of the programme plus three years			By the end of the theoretical duration of the programme			By the end of the theoretical duration of the programme plus three years		
			Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total
			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
OECD	**Countries**													
	Australia [1]	93	29	36	33	62	70	66	35	37	36	50	56	53
	Austria	73	8	15	12	46	57	53	57	71	64	74	85	80
	Canada [2, 3]	100	40	52	47	63	73	69	m	m	m	m	m	m
	Colombia	37	7	10	9	42	52	47	10	16	14	48	60	55
	Estonia	91	32	53	45	55	74	66	19	35	28	36	57	47
	Finland	58	31	52	43	67	81	75	34	62	51	65	80	73
	France	98	32	43	39	67	72	70	58	59	58	88	77	81
	Iceland	73	32	41	38	65	73	70	43	41	42	64	72	68
	Israel	13	40	61	57	59	76	72	56	65	61	76	84	81
	Italy	m	m	m	m	m	m	m	m	m	m	m	m	m
	Lithuania	91	50	68	60	57	74	66	39	59	51	45	64	56
	Netherlands [2]	100	22	36	29	64	78	71	m	m	m	m	m	m
	New Zealand	97	26	37	32	73	79	77	67	75	72	75	85	81
	Norway	80	46	54	51	70	81	76	37	49	44	56	72	65
	Poland	95	39	59	50	60	77	69	36	56	47	57	77	69
	Portugal	80	30	43	37	64	80	73	36	43	40	62	75	69
	Slovenia	94	31	45	39	48	66	57	16	25	22	29	43	38
	Spain [4]	92	25	45	36	63	78	71	43	61	53	75	87	82
	Sweden [3]	93	27	36	32	48	69	60	37	51	45	63	80	72
	Switzerland	m	m	m	m	m	m	m	m	m	m	m	m	m
	United Kingdom [1]	m	m	m	m	m	m	m	m	m	m	m	m	m
	United States [2, 3]	62	37	45	42	72	77	75	57	65	62	77	82	80
	Other participants													
	Flemish Comm. (Belgium)	42	24	34	29	61	71	67	28	39	34	62	72	68
	French Comm. (Belgium) [5]	47	13	23	19	39	54	47	15	28	22	47	62	56
	Average		30	43	38	60	72	67	39	50	45	61	72	67

Note: Completion rates based on true cohort (individual-level) and cross cohort (aggregate) data are not comparable with each other. See *Definitions* and *Methodology* sections for more information. Please note that the year of reference for the data (2020) corresponds to a period three years after the theoretical end of the programme (2017). The reference year for students' entry to study may differ depending on the duration of their programme.

1. Data on bachelor's and equivalent programmes refer only to those with a theoretical duration of three, four or five years in Australia. Only bachelor's programmes with a theoretical duration of three or four years are included for the United Kingdom.
2. Year of reference differs from 2020: 2019 in Canada and the Netherlands; 2017 in the United States.
3. Timeframes of reference differ. Data are provided for the theoretical duration of the programme plus one year in Canada and plus two years in the United States (not three years). Data are provided for the theoretical duration of the programme plus one semester (not the theoretical duration) in Sweden.
4. Data on short-cycle programmes refer only to specific vocational training – advanced level programmes. Data on bachelor's level or equivalent programmes refer to higher education provided in universities only.
5. Data refer only to the *hautes écoles* (HE) and the *écoles des arts* (ESA), representing about 60% of entrants to bachelor's or equivalent programmes.

Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/g2hfot

Table B5.4. Completion rates of full-time bachelor's students by the end of theoretical duration of their programme plus three years, by selected fields of study and gender (2020)

True cohort only

		Share of female STEM entrants	Graduated from any tertiary programme after entering a bachelor's programme in the field of:						Graduated from tertiary education in the same field and level after entering a bachelor's programme in the field of:					
			Education		STEM		Health and welfare		Education		STEM		Health and welfare	
			Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
OECD	**Countries**													
	Australia [1]	38	49	58	61	75	62	70	47	56	60	74	61	69
	Austria	34	57	72	52	53	88	91	51	65	44	35	88	90
	Canada [2, 3]	41	73	82	64	74	75	84	61	69	48	50	52	70
	Colombia	m	m	m	m	m	m	m	m	m	m	m	m	m
	Estonia	33	47	74	68	77	61	80	35	73	46	60	57	78
	Finland	24	78	88	62	72	73	82	47	55	49	44	68	76
	France	m	m	m	m	m	m	m	m	m	m	m	m	m
	Iceland [1]	37	59	67	67	76	81	80	57	62	56	59	73	69
	Israel	33	62	77	76	83	87	91	54	71	69	72	86	89
	Italy	m	m	m	m	m	m	m	m	m	m	m	m	m
	Lithuania	25	44	75	61	76	62	77	44	74	60	75	61	77
	Netherlands [2]	23	48	71	67	84	62	76	35	59	55	66	52	69
	New Zealand	41	64	79	75	85	68	77	51	71	49	45	56	67
	Norway	27	71	83	70	80	74	86	62	73	58	61	67	81
	Poland	39	53	78	63	81	66	85	44	69	52	64	59	77
	Portugal	33	56	81	59	80	76	88	46	77	53	71	71	86
	Slovenia	30	63	83	50	66	58	75	49	76	39	51	51	71
	Spain [4]	33	76	89	61	75	84	91	73	88	55	68	78	86
	Sweden	30	63	81	46	61	67	83	56	74	41	52	63	80
	Switzerland [5]	28	76	90	80	81	82	86	72	87	71	63	74	81
	United Kingdom [1]	39	83	88	80	86	85	87	76	83	73	81	78	82
	United States [2, 3]	m	m	m	m	m	m	m	m	m	m	m	m	m
	Other participants													
	Flemish Comm. (Belgium)	18	43	65	67	85	60	73	40	63	64	82	57	72
	French Comm. (Belgium) [6]	7	37	57	46	60	44	60	28	48	38	47	37	53
	Average	31	61	78	64	76	72	82	52	70	54	61	65	77

Note: STEM refers to the fields of science, technology, engineering and mathematics. Data on completion rates for other fields (Columns 19 to 66), as well as total men and women (Columns 3, 6, 9, 12, 15, and 18), are available for consultation on line (see StatLink below). Completion rates based on true cohort (individual-level) and cross cohort (aggregate) data are not comparable with each other. See *Definitions* and *Methodology* sections for more information. Please note that the year of reference for the data (2020) corresponds to a period three years after the theoretical end of the programme (2017). The reference year for students' entry to study may differ depending on the duration of their programme.

1. Data on bachelor's and equivalent programmes refer only to those with a theoretical duration of three, four or five years in Australia. Only bachelor's programmes with a theoretical duration of three years are included for Iceland, and three or four years are included for the United Kingdom.
2. Year of reference differs from 2020: 2019 in Canada and the Netherlands; 2017 in the United States.
3. Timeframes of reference differ. Data are provided for the theoretical duration of the programme plus one year in Canada and plus two years in the United States (not three years).
4. Data on graduation from any tertiary programme exclude graduation from short-cycle tertiary.
5. Data on graduation in the same field and level include students who graduated from a master's long first degree programme.
6. Data refer only to the *hautes écoles* (HE) and the *écoles des arts* (ESA), representing about 60% of entrants to bachelor's or equivalent programmes.

Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/tc8z5y

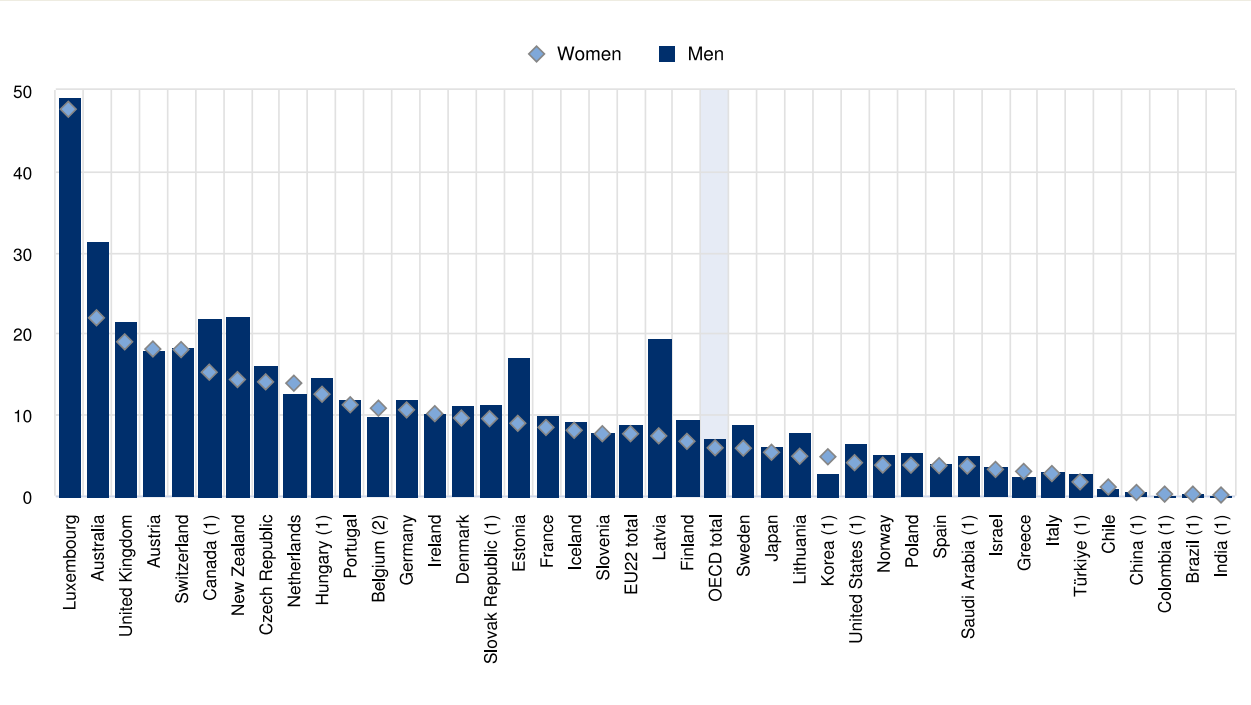
Indicator B6. What is the profile of internationally mobile students?

Highlights

- Students are more likely to cross borders to pursue their studies as they reach more advanced levels of education. Internationally mobile students account for only 5% of bachelor's students, but 14% of master's students and 24% of doctoral students on average in OECD countries.
- 31% of tertiary mobile students are enrolled in science, technology, engineering and mathematics (STEM) programmes. This is a larger share than among national students, of whom 23% are enrolled in STEM. The share of mobile students enrolled in STEM programmes increased by 2 percentage points between 2015 and 2020 while remaining constant in other fields such as education and health and welfare.
- Students from Asia form the largest group of international students enrolled in tertiary education programmes at all levels, representing 58% of all mobile students across the OECD in 2020.

Figure B6.1. Share of international or foreign students at tertiary level, by gender (2020)

In per cent



1. Share of foreign rather than international students.
2. Data on short-cycle tertiary programmes are based on nationality and refer to the Flemish community only.

Countries are ranked in descending order of the share of international or foreign students among female students enrolled in tertiary programmes.

Source: OECD/UIS/Eurostat (2022), Table B6.2. See Source section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

StatLink https://stat.link/rp14ea

Context

Studying abroad has become a key differentiating experience for young adults enrolled in tertiary education, and international student mobility has received increasing policy attention in recent years. Studying abroad can be a way to access high-quality education at a prestigious institution and acquire skills that may not be taught at home (King and Sondhi, 2018[1]). It is also seen as a means of accessing career opportunities abroad and improving employability in increasingly globalised labour markets, and for some, it is a first step to migrate to another country in the long-term (Crossman and Clarke, 2010[2]; Wintre et al., 2015[3]). Other motivations include the desire to expand one's knowledge of other societies and to improve language skills, particularly English (Sánchez, Fornerino and Zhang, 2006[4]; Wu, 2014[5]).

For host countries, mobile students (whether international or foreign) may be an important source of income and have a considerable impact on their economic and innovation systems (Halterbeck and Conlon, 2021[6]). They often pay higher tuition fees than domestic students (see Indicator C5) and, in some countries, are subject to higher registration fees. They also contribute to the local economy through their living expenses (Canmac Economics, 2020[7]). In the longer run, highly educated mobile students have the ability to integrate into domestic labour markets more easily than other migrants and contribute to innovation and economic performance. Attracting mobile students, especially if they stay permanently, is therefore a way to tap into a global pool of talent, support the development of innovation and production systems, and, in many countries, mitigate the impact of an ageing population on future skills supply (Hawthorne, 2008[8]).

For their countries of origin, mobile students might be viewed as lost talent (or "brain drain"). However, mobile students can contribute to knowledge absorption, technology upgrading and capacity building in their home country, if they return home after their studies or maintain links with nationals at home. They gain tacit knowledge that is often shared through personal interactions and can help their home country to integrate into global knowledge networks. Some research suggests that the number of students overseas is a good predictor of future scientist flows in the opposite direction, providing evidence of movement of skilled labour across nations (Appelt et al., 2015[9]). Student mobility also appears to shape international scientific co-operation networks more deeply than either a common language or scientific proximity.

In 2020, higher educational institutions around the world implemented campus shut downs to control the spread of the COVID-19 pandemic and many shifted to distance learning. While campus closures affected the continuity of learning and the delivery of courses for all students, lockdowns were particularly problematic for many of the 4.4 million international and foreign students studying in OECD countries. Students were faced with uncertainty over whether they would be able to physically reach the country where their course was expected to take place due to restrictions on borders, or find work within the period of time allowed for international students to seek employment after the end of their studies (EMN/OECD, 2020[10]). This may partly explain why in some contexts, like Australia, international students reported larger declines in the quality of their educational experience in 2020 than national students (QILT, 2020[11]).

Other findings

- International mobility patterns show the importance of cultural, linguistic and physical proximity for students in choosing where to study. For instance, Latin American students represent 6% of mobile students overall in the OECD, but 75% of those in OECD countries within the Latin American region.
- Most OECD countries are net "importers" of students; that is, they have more students coming into the country to study than those leaving to study abroad. In total in 2020, OECD countries hosted four international students for each national student studying abroad, but this ratio exceeds ten in Australia and the United Kingdom.
- Erasmus+ and other European Union (EU) programmes account for the great majority (69%) of credit-mobile graduates in European OECD countries who studied abroad for at least three months, ranging from 32% in Denmark, to 95% or more in Greece, Latvia and Slovenia.

Note

This indicator focuses mostly on **degree mobile** students, who are enrolled as regular students abroad with the intention of graduating from a programme in the country of destination. This does not include **credit-mobile** students, who are temporarily enrolled in tertiary education and/or a study-related traineeship abroad in order to gain academic credit for a tertiary programme at an institution in their country of origin (see Box B6.1 for a discussion of credit mobility).

Analysis

Mobility patterns and international student flows

Many factors at the individual, institutional, national and global levels drive patterns of international student mobility. These include personal ambitions and aspirations for better employment prospects, a lack of high-quality higher educational institutions at home, the capacity of higher education institutions abroad to attract talent and government policies to encourage cross-border mobility for education (Bhandari, Robles and Farrugia, 2018[12]). The needs of increasingly knowledge-based and innovation-driven economies have spurred demand for tertiary education worldwide, while increasing wealth in emerging economies has prompted the children of the growing middle classes to seek educational opportunities abroad. At the same time, economic (e.g. costs of international flights), technological (e.g. the spread of the Internet and social media enabling contacts to be maintained across borders) and cultural factors (e.g. use of English as a common working and teaching language) have contributed to making international study substantially more affordable and easier to access than in the past.

The perceived quality of instruction abroad and the perceived value of host institutions are key criteria for international students when choosing where to study (Abbott and Silles, 2016[13]). The top destinations for internationally mobile students include a large number of top-ranked higher educational institutions. Students worldwide are increasingly aware of differences in quality among tertiary education systems, as university league tables and other international university rankings are widely disseminated. At the same time, institutions' ability to attract international students has become a criterion for assessing their performance and quality. As governments seek to encourage the internationalisation of higher education, they have revised performance agreements with domestic institutions, for example by taking into account inflows of international students in university funding formulas. In Finland, for example, the internationalisation of higher education is one of the dimensions considered for the funding of tertiary institutions, along with quality and impact measures (Eurydice, 2020[14]). Similarly, in Estonia and Norway, the share of foreign or international students is an indicator used to determine the level of block grant funding allocated to tertiary institutions (OECD, 2019[15]).

Most countries have implemented reforms aiming to lower the barriers to migration of highly skilled individuals, beyond the purposes of education, and most countries operate funding programmes to support inward, outward or return mobility. While the conditions of migration differ (e.g. short-term versus long-term settlement), the most common target for these programmes are pre-doctoral students and early-stage researchers (both doctoral and postdoctoral).

Although setting appropriate tuition fees remains one of the most debated topics in education policy, setting higher fees for international students is less politically controversial and often constitutes an important revenue stream for higher educational institutions. In some countries, international students in public universities pay twice as much for tuition as national students, attracted by the perceived quality of the education and potential labour-market prospects in their host country. However, the existence of large gaps in tuition fees for national and international students may become a cause for concern if funding for places becomes an issue. In the United Kingdom, for example, the Russell Group collective of universities recently warned that universities in England are facing increasing deficits, which have led to fears that institutions may prioritise the enrolment of international students in order to cover their costs (Russell Group, 2022[16]).

In contrast, some countries may seek to promote international mobility within a region by reducing or eliminating fees. Students from the European Economic Area can study in any other country within this area, paying the same tuition fees as national students (see Indicator C5).

By gender

Gender differences among internationally mobile tertiary students are small across the OECD but, on average, a higher proportion of male students (7%) are internationally mobile than female students (6%). There are only a few countries in which there is a larger share of international students among women at tertiary level, and even in these the gender gaps are fairly small. In Belgium, Korea and the Netherlands, the share of female students who are internationally mobile is only higher than the share of male students by 1 to 2 percentage points. There are more pronounced gender differences in several countries where a higher proportion of male students are mobile. In Australia and Latvia, for example, the share of male students who are mobile is at least 10 percentage points higher than the share of female students (Figure B6.1).

Gender differences may be partly explained by the fact that mobile students tend to be more likely than national students to enrol in STEM-related programmes, which tend to enrol more male students than female ones (Myers and Griffin, 2019[17]). The predominance of mobile student enrolments in STEM fields in some countries, such as Germany, may contribute to the

higher share of men among mobile students in these countries compared to others, such as the United Kingdom (Donkor et al., 2020[18]). However, many countries are making concerted efforts to attract more women to STEM-related fields, as well as to higher levels of education (see Indicator B4).

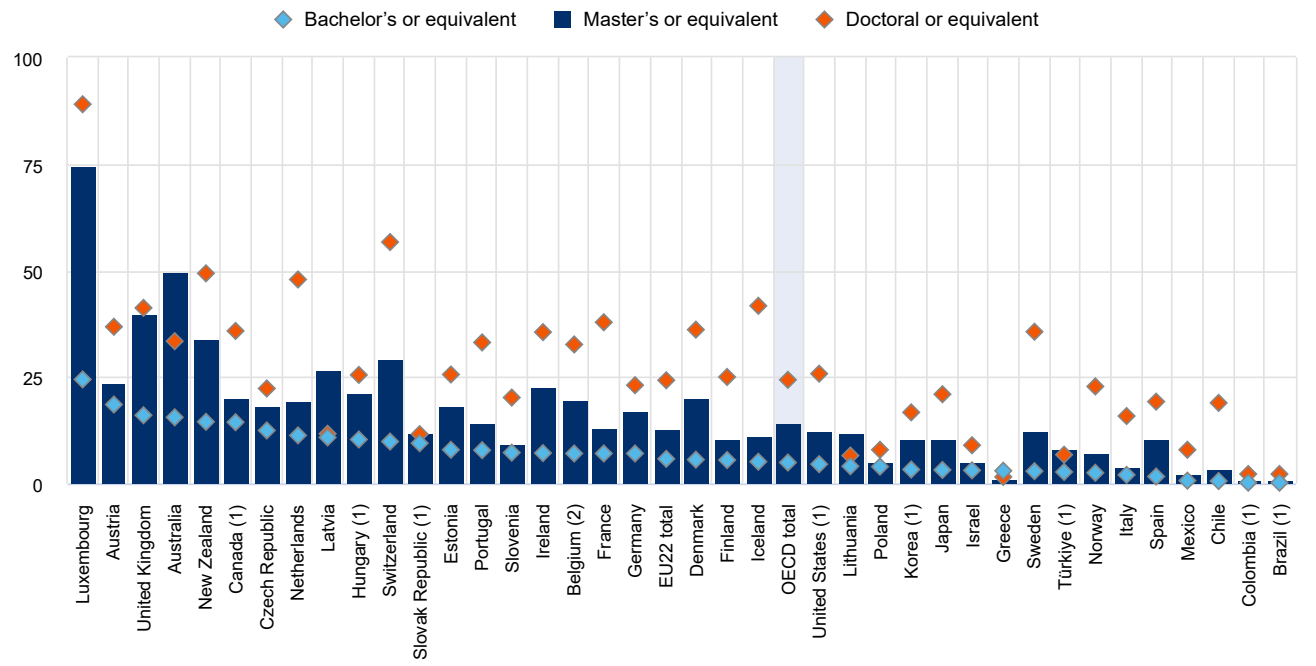
There may also be social and cultural reasons behind the gender differentials between mobile and national students, depending on the countries of origin and destination. In some contexts, men are much more likely than women to study abroad, which reflects differing societal expectations for women (Findlay, 2011[19]). Qualitative research suggests that in some patriarchal societies, men are more likely to be able to use the cultural capital from studying abroad to succeed in the labour market back home (Holloway, O'Hara and Pimlott-Wilson, 2012[20]).

By level of study

In all but a few countries, the share of international students enrolled in tertiary programmes increases with the level of tertiary education. In total across OECD countries, international students account for 7% of total enrolment in tertiary programmes in 2020. International enrolment in bachelor's or equivalent programmes remains relatively low (under 5% in nearly 40% of the countries for which data are available). However, a few countries have a more international profile at this level. In Australia, Austria, Luxembourg and the United Kingdom, 15% or more bachelor's students are international (Figure B6.2).

Figure B6.2. Incoming student mobility in tertiary education, by level of study (2020)

Mobile student enrolment as a percentage of total enrolment in tertiary education, in per cent



1. Share of foreign rather than international students.
2. Data on short-cycle tertiary programmes are based on nationality and refer to the Flemish community only.
Countries are ranked in descending order of the percentage of international or foreign students enrolled in bachelor's or equivalent programmes in 2020.
Source: OECD/UIS/Eurostat (2022), Table B6.1. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

StatLink https://stat.link/c50hqn

International enrolment increases substantially at master's or equivalent level. In total across the OECD, international students account for 14% of total enrolments at this level. The proportion of mobile students at least doubles between bachelor's and master's levels in nearly two-thirds of OECD countries. In Chile, Spain and Sweden, the share of mobile students at master's

level is at least four times higher than at bachelor's level. Greece is the only OECD country where the share of mobile students at master's level is slightly lower than at bachelor's level (Figure B6.2).

At doctoral or equivalent level, mobile students represent 24% of enrolled students. The share of mobile doctoral students is roughly equal to that of national students in the Netherlands and New Zealand (Table B6.1). In Luxembourg and Switzerland, there are more international students in doctoral programmes than national students (89% in Luxembourg and 57% in Switzerland). Most countries have higher shares of mobile students at doctoral level than at master's level. However, in Australia and Latvia, the share of international students at doctoral level is at least 15 percentage points lower than at master's level (Figure B6.2).

Most OECD countries are net "importers" of students; that is, they have more students coming into the country to study than those leaving to study abroad. In total across OECD countries in 2020, there were four mobile students for each national student studying abroad, but this ratio exceeds ten in Australia and the United Kingdom. However, a number of countries are net "exporters" of students; that is, more students travel abroad to study than those coming in to study. Colombia, Luxembourg and the Slovak Republic are among the OECD countries with the lowest ratios of mobile students to national students abroad, where there were less than 0.5 mobile students per national student abroad. Among partner countries, the People's Republic of China and India, who together are responsible for more than 30% of the pool of mobile students, are also net exporters of students (Table B6.1).

Box B6.1. Credit mobility in European OECD member countries

Initiatives at supranational, national, regional, local or institutional level have also contributed to cross-border mobility. In 2011, the EU set the ambitious goal of increasing the proportion of EU graduates from higher education who completed a period of their studies or training abroad to 20% by 2020 (Council of the European Union, 2011[21])

The EU had already started to make European higher education more homogeneous and comparable across countries and more attractive to international students in 1999 with the Bologna process, which set in motion a series of reforms. Its main objectives were the introduction and standardisation of a three-cycle degree system (bachelor's, master's and doctoral degrees), and the recognition of qualifications from foreign institutions and periods of study abroad. One of the underlying objectives of the process was to stimulate mobility across EU of students, teachers and researchers.

The Erasmus+ programme (and its predecessor Erasmus) gives students and teaching staff the opportunity to develop their skills and boost their employment prospects. Students can study abroad for up to 12 months (during each cycle of tertiary education). Over the period 2014-20, around 2 million students were expected to have benefited from Erasmus+ (Eurostat, 2018[22]).

Students who are temporarily studying abroad to gain academic credit within the framework of a tertiary education programme at their home institutions are defined as credit-mobile students (UNESCO-UIS/OECD/Eurostat, 2018[23]). **Credit mobility** is distinct from **degree mobility;** degree mobile students – the main subject of this indicator – are enrolled as regular students with the objective of graduating in the country of destination. On average across the European countries that are members of the OECD (EU22), 10% of 2020 graduates had benefited from credit mobility, ranging from 2% in Greece, Hungary and Poland to 45% in Luxembourg. In all countries with available data, most credit-mobile graduates spent at least three months abroad, ranging from 68% in Austria to 90% in Sweden (Table B6.a.).

On average, the share of national graduates with credit mobility has remained unchanged at both bachelor's and master's level in countries with available data in both 2016 and 2020. The share of credit-mobile graduates fell slightly in 9 out of 16 countries, by up to 3 percentage points in Finland and Luxembourg (Table B6.a.). This could reflect the negative effects of the pandemic, which meant that many students' credit mobility periods were cancelled (Gabriels and Benke-Aberg, 2020[24]). However, it is likely that it is still too soon to see whether the pandemic will lead to sharp reductions in the number of graduates with credit mobility. In countries such as Italy, the Slovak Republic and Spain, the share of national graduates with credit mobility actually increased between 2016 and 2020 by 1 or 2 percentage points (Table B6.a.).

In most countries, credit-mobile graduates are more commonly found at bachelor's level than at master's or doctoral level. On average, only 37% of credit-mobile graduates in European OECD countries had studied at master's or doctoral programme in 2020, but this average disguises substantial differences at country level. On the one hand, there are countries with a large share of credit-mobile students at these higher levels, such as the Czech Republic, France and Italy, where 60% or more of

credit-mobile students were enrolled either at master's or doctoral level. On the other hand, in countries such as Greece, Lithuania and Luxembourg, the share was less than 20% (Table B6.a.).

Erasmus+ and other EU programmes account for the great majority (69%) of credit-mobile graduates in European OECD countries who studied abroad for at least three months, ranging from 32% in Denmark to 95% or more in Greece, Latvia and Slovenia (Table B6.a.). Students may also benefit from credit mobility through other international or national programmes, including other bi- or multilateral programmes such as partnerships between universities, or other programmes involving students organising their own study abroad, which is then credited by their home institution. The Nordic and Baltic countries, for example, operate the *Nordplus Higher Education Programme*, a broad mobility and network programme that aims to reinforce collaboration, joint curriculum planning, student and teacher mobility, and the sharing of best practices between institutions (Rannis, 2020[25]).

Table B6.a. Credit mobility in European OECD member countries (2016 and 2020)

		Share of national graduates with credit mobility								Share of credit mobile graduates who stayed at least three months (or 15 ECT credits)	Credit mobile graduates (at least 15 ECTs)	
		Bachelor's		Master's		Doctoral		All tertiary			Share of graduates under EU programmes (i.e. ERASMUS or other EU programmes)	Share of master's and doctoral graduates
		2016	2020	2016	2020	2016	2020	2016	2020	2020		
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
OECD	Countries											
	Austria	15	15	16	14	16	12	10	9	68	62	44
	Belgium	m	7	m	7	m	m	m	7	m	58	34
	Czech Republic	m	5	m	11	m	10	m	8	79	82	62
	Denmark	8	10	11	11	m	26	9	9	m	32	35
	Estonia	m	m	m	m	m	m	m		m	80	m
	Finland	17	12	16	18	2	2	16	14	75	59	45
	France	m	m	m	m	m	m	m	m	m	37	69
	Germany[1]	12	11	17	17	m	m	14	13	m	49	43
	Greece[1]	3	3	0	0	m	m	3	2	m	96	4
	Hungary[1]	2	1	5	4	1	4	3	2	m	85	43
	Italy[1]	6	6	11	15	m	64	8	10	m	77	65
	Latvia	10	10	5	6	10	9	7	7	85	98	25
	Lithuania	8	8	5	4	11	9	8	7	73	86	19
	Luxembourg	m	m	m	m	m	m	47	45	100	82	2
	Netherlands	22	24	22	18	m	m	21	22	m	39	22
	Norway	10	10	13	10	0	0	10	9	84	0	31
	Poland	m	1	m	2	m	4	m	2	m	93	51
	Portugal	8	7	9	7	1	1	8	7	m	87	31
	Slovak Republic	1	4	4	5	4	6	3	4	76	93	57
	Slovenia	m	4	m	3	m	0	m	3	79	96	29
	Spain	13	16	7	5	m	34	8	9	85	78	22
	Sweden	11	12	14	15	6	6	11	11	90	36	46
	Switzerland	6	m	12	m	13	m	8	m	m	m	m
	Average	10	9	11	9	m	m	11	10	m	69	37
	Average for countries with available data in both years	10	10	10	10	m	m	9	9			

Note: The European Credit Transfer and Accumulation System (ECTS) allows credits taken at one higher education institution to be counted towards a qualification studied for at another. ECTS credits represent learning based on defined learning outcomes and their associated workload. 60 credits are the equivalent of a full year of study or work. In a standard academic year, 60 credits would be usually broken down into several smaller components.
1. The indicator is slightly overestimated as it includes degree mobile graduates
Source: Eurostat (2022), Credit mobile graduates (at least 3 months abroad) by education level, type of mobility scheme, type of mobility and sex (Database), Eurostat, https://ec.europa.eu/eurostat/databrowser/view/educ_uoe_mobc01/default/table?lang=en.
Eurostat (2022), Credit mobile graduates (less than 3 months abroad) by education level, country of destination, type of mobility and sex (Database), Eurostat, https://ec.europa.eu/eurostat/databrowser/view/educ_uoe_mobc03/default/table?lang=en.

StatLink https://stat.link/fymk8g

By country of destination and origin

The pools and flows of mobile talent remain very geographically concentrated worldwide, and mobility pathways are deeply rooted in historical patterns. Identifying the determinants of international student mobility is key to designing efficient policies to encourage the movement of skilled labour. Student migration is mainly driven by differentials in education capacity (a lack of educational facilities in the country of origin or the prestige of educational institutions in the country of destination). It is also driven by differences in the returns to or rewards for education and skills in the origin and destination countries (see Indicators A3 and A4). Economic factors include better economic performance in the host country, exchange rates, more affordable mobility (due to lower tuition fees or higher education subsidies, for instance) and higher-quality education in the host country. In addition, the decision to study abroad may be determined by non-economic factors, such as political stability or cultural and religious similarities between the origin and destination countries, as well as the desire to improve foreign language skills or gain a better understanding of other societies (Guha, 1977[26]; UNESCO Office Bangkok and Regional Bureau for Education in Asia and the Pacific, 2013[27]; Weisser, 2016[28]; Wu, 2014[5]).

English is the *lingua franca* of the globalised world, with one in four people using it worldwide (Sharifian, 2013[29]). Not surprisingly, English-speaking countries are the most attractive student destinations overall, For instance, the top five destination countries in the OECD are Australia, Canada, Germany, the United Kingdom and the United States, four of those countries are English-speaking countries. Together, these four countries receive more than 35% of all internationally mobile students in OECD and partner countries. The United States is the top OECD destination country for mobile tertiary students. Of the 4.39 million internationally mobile students in OECD countries, 957 000 are enrolled in the United States. Among the English-speaking countries, after the United States, the United Kingdom accounts for 551 000 international students, Australia 458 000 and Canada 323 000. As a destination country, the United States alone takes 15% of the global education market share, i.e. 15% of all international students in the world enrolled in the United States, while Australia and the United Kingdom each have 7% and 9% of the global market share respectively, and Canada has 5%. Among non-English speaking countries, Germany (6%), France and China (both 4%) have substantial shares of the global market (Table B6.1).

International mobility patterns demonstrate the importance of cultural, linguistic and physical proximity to students' choice of host country. For instance, the average share of Latin American international students in OECD countries is only 6% (Table B6.2). However, in Latin American OECD countries, students from the region accounted for over 75% of all mobile students on average, ranging from 43% in Mexico to 91% in Chile (Table B6.2). Similarly, in Austria, Colombia, Costa Rica, Greece, Indonesia, Poland and the Slovak Republic, more than 55% of international or mobile students in 2020 came from neighbouring countries (Table B6.2).

Students from Asia form the largest group of international students enrolled in tertiary education programmes at all levels, totalling 58% of all mobile students in OECD countries in 2020. In total, over 30% of mobile students in OECD countries come from China and India. Around two-thirds of Chinese and Indian students are concentrated in only four countries: Australia, Canada, the United Kingdom and the United States. Beyond these four, a substantial share of Chinese students are enrolled in Japanese programmes (9%), and Indian students in German programmes (5%). Europe is the next largest region of origin, with European international students making up 21% of all mobile students enrolled in OECD countries. European students prefer to stay in Europe, accounting for 41% of mobile students enrolled in the EU22 countries. At least 8 out of 10 mobile students in Austria, the Czech Republic, Denmark, the Slovak Republic and Slovenia come from other European countries (Table B6.2, and Tables B6.5 and B6.6, available on line).

Profile of internationally mobile students

By field of study

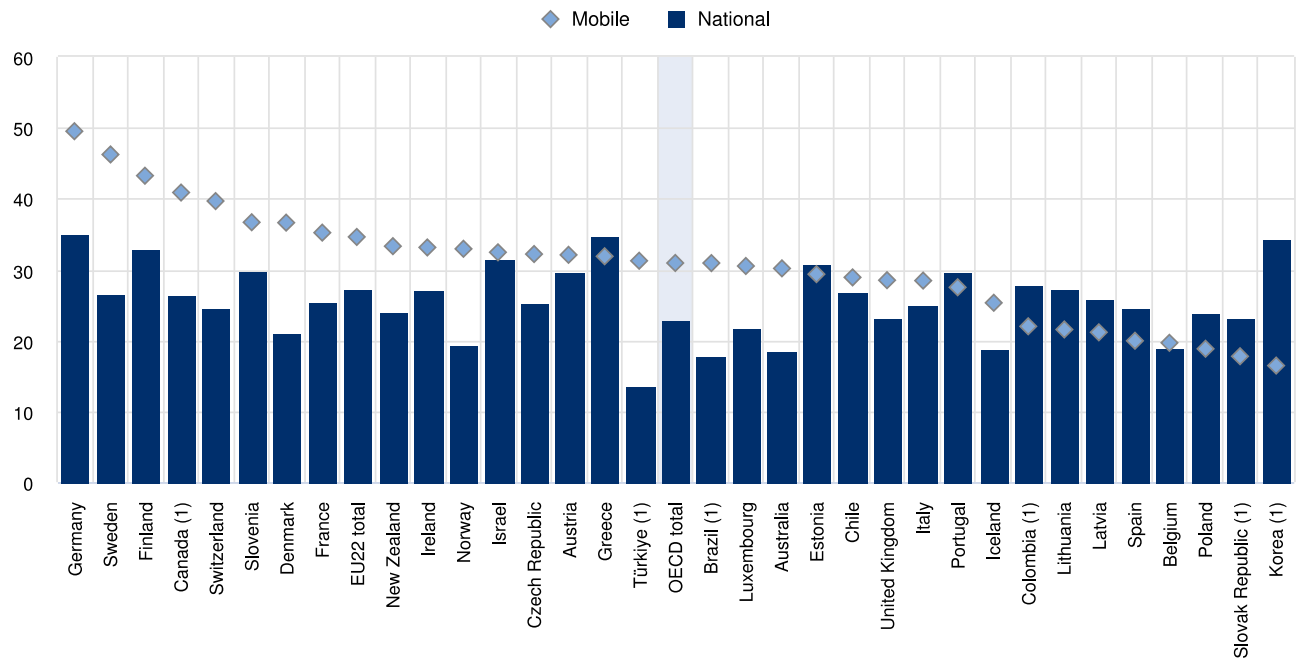
Fields of study are a key consideration for students choosing to pursue a tertiary degree abroad. Some countries devote more resources to research in certain fields and therefore benefit from strong international recognition, particularly at higher levels of tertiary education. Across OECD countries, the distribution of national and mobile students across fields of study differ considerably in education; health and welfare; and science, technology, engineering and mathematics (STEM). The field of education attracts only 3% of mobile students, compared to 7% of national students, while the field of health and welfare attracts 10% of mobile students compared to 14% of national students. In contrast, internationally mobile students are more likely to enrol in STEM-related fields than national students in total across the OECD: 31% of mobile students chose a STEM subject, but only 23% of national students (Table B6.3).

There are also striking differences between countries. For instance, in about one-third of OECD countries with available data, STEM-related fields are more popular among national students than among mobile students. This may imply that these countries are less attractive for international students wanting to specialise in these fields. However, the difference is small and does not exceed 6 percentage points in any of these countries except Korea, where the difference is 18 percentage points (Figure B6.3). Meanwhile, nearly 40% of all foreign students in the Slovak Republic entered a health and welfare programme, more than double of the share of national students who chose that field. In the field of education, there were only three countries in which mobile students were more likely to enrol in the field of education than their national peers, and even in those countries the difference was no more than 1 percentage point (Table B6.3).

On average, the distribution of mobile students across various fields of study did not change substantially between 2015 and 2020 across the OECD. In education and health and welfare, the share of mobile students enrolled remained constant at the OECD level, and the share of mobile students enrolled in STEM increased by only 2 percentage points, from 29% in 2015 to 31% in 2020 (Table B6.3). In the field of education, there was little variation across OECD countries, with 21 out of 35 countries with available data recording no change in the share of mobile students enrolled in education. However, there were considerable cross-country differences in health and welfare and STEM. The share of mobile students enrolled in health and welfare rose by over 5 percentage points in Lithuania and New Zealand between 2015 and 2020, but fell by 5 percentage points or more in Ireland, the Slovak Republic and Spain. Meanwhile, the share of mobile students enrolled in STEM rose by at least 9 percentage points in Latvia, Luxembourg and the Slovak Republic in the same period, but fell by 6 percentage points in Korea (Table B6.3).

Figure B6.3. Share of tertiary students in STEM fields, by mobility status (2020)

In per cent



1. Share of foreign rather than international students.
Countries are ranked in descending order of the share of mobile students enrolled in STEM fields at tertiary level in 2020.
Source: OECD/UIS/Eurostat (2022), *Education at a Glance Database*. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

StatLink https://stat.link/asxdjq

Definitions

Foreign students are those who are not citizens of the country in which they are enrolled and where the data are collected. Although they are counted as internationally mobile, they may be long-term residents or even be born in the "host" country. While pragmatic and operational, this classification may be inappropriate for capturing student mobility because of differing national policies regarding the naturalisation of immigrants. For instance, Australia has a greater propensity than Switzerland to grant permanent residence to its immigrant populations. This implies that even when the proportion of foreign students in tertiary enrolment is similar for both countries, the proportion of international students in tertiary education will be smaller in Switzerland than in Australia. Therefore, for student mobility and bilateral comparisons, interpretations of data based on the concept of foreign students should be made with caution. In general, international students are a subset of foreign students.

International students are those who left their country of origin and moved to another country for the purpose of study. The country of origin of a tertiary student is defined according to the criteria of "country of upper secondary education", "country of prior education" or "country of usual residence" (see below). Depending on country-specific immigration legislation, mobility arrangements (such as the free mobility of individuals within the European Union and the European Economic Area) and data availability, international students may be defined as students who are not permanent or usual residents of their country of study, or alternatively as students who obtained their prior education in a different country.

Mobile students are students who are either international or foreign.

National students are students who are not internationally mobile. Their number is computed as the difference between the total number of students in each destination country and the number of international or foreign students.

The **country of prior education** is the country in which students obtained their upper secondary qualification (upper secondary or post-secondary non-tertiary completion with access to tertiary education programmes) or the qualification required to enrol in their current level of education. Where countries are unable to operationalise this definition, it is recommended that they use the country of usual or permanent residence to determine the country of origin. Where this too is not possible and no other suitable measure exists, the country of citizenship may be used.

Permanent or usual residence in the reporting country is defined according to national legislation. In practice, this means holding a student visa or permit, or electing a foreign country of domicile in the year prior to entering the education system of the country reporting the data.

Country-specific operational definitions of international students are indicated in the tables as well as in Annex 3 (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

Methodology

Defining and identifying mobile students, as well as their types of learning mobility, are a key challenge for developing international education statistics, since current international and national statistical systems only report domestic educational activities undertaken within national boundaries (OECD, 2018[30]).

Data on international and foreign students are therefore obtained from enrolments in their countries of destination. This is the same method used for collecting data on total enrolments, i.e. records of regularly enrolled students in an education programme. Students enrolled in countries that did not report to the OECD or to the UNESCO Institute for Statistics are not included and, for their countries of origin, the total number of national students enrolled abroad may be underestimated.

The total number of students enrolled abroad refers to the count of international students, unless data are not available, in which case the count of foreign students is used instead. Enrolment numbers are computed using a snapshot method, i.e. counting enrolled students at a specific day or period of the year.

This methodology has some limits. OECD international statistics on education tend to overlook the impact of distance and e-learning, especially fast-developing massively online open courses (MOOCs), students who commute from one country to another on a daily basis, and short-term exchange programmes that take place within an academic year and are therefore under the radar. Other concerns arise from the classification of students enrolled in foreign campuses and European schools in host countries' student cohorts.

Current data for international students can only help track student flows involving OECD and partner countries as receiving countries. It is not possible to assess extra-OECD flows and, in particular, the contribution of South-South exchanges to global brain circulation.

For more information, please see the OECD *Handbook for Internationally Comparative Education Statistics 2018* (OECD, 2018[30]) and Annex 3 for country-specific notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

Source

Data refer to the 2019/20 academic year and are based on the UNESCO-UIS/OECD/Eurostat data collection on education statistics administered by the OECD in 2021 (for details, see Annex 3 at: (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).

The UNESCO Institute of Statistics (UIS) provided data 1) for Argentina, China, India, Indonesia, Saudi Arabia and South Africa; 2) for all countries beyond the OECD and partner countries; and 3) for OECD countries for the period not covered by OECD statistics (2005 and 2010-20).

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Indicator B6 tables

Tables Indicator B6. What is the profile of internationally mobile students?

Table B6.1	International and foreign student mobility in tertiary education (2015 and 2020)
Table B6.2	Profile of international and foreign students (2020)
Table B6.3	Share of tertiary students enrolled in selected broad fields of study, by mobility status (2015 and 2020)
WEB Table B6.4	*Distribution of international and foreign students by country of origin (2020)*
WEB Table B6.5	*Distribution of international and foreign students by country of destination (2020)*

StatLink https://stat.link/o37kmb

Cut-off date for the data: 13 June 2022. Any updates on data can be found on line at: http://dx.doi.org/10.1787/eag-data-en. More breakdowns can also be found at http://stats.oecd.org, *Education at a Glance Database*.

Table B6.1. International and foreign student mobility in tertiary education (2015 and 2020)

International or foreign student enrolment as a percentage of total tertiary enrolment

Reading the eighth column of the upper section of the table (international): 26% of all students in tertiary education in Australia are international students and 18% of all students in tertiary education in Switzerland are international students.

Reading the eighth column of the lower section of the table (foreign): 18% of all students in tertiary education in Canada are not Canadian citizens, and 4% of all students in tertiary education in Korea are not Korean citizens.

		Number of international or foreign students (in thousands)	International or foreign student enrolment as a percentage of total tertiary enrolment								Percentage of national tertiary students enrolled abroad	Number of international or foreign students per national student abroad	Number of international or foreign students for every hundred national students home and abroad	Percentage of international or foreign students coming from neighbouring countries	International education market share
			Bachelor's	Master's	Doctoral	Bachelor's	Master's	Doctoral	All tertiary		All tertiary				
		2020				2015			2010	2015	2020				
		(1)	(3)	(4)	(5)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
		International students													
OECD	Countries														
	Australia	458	15	50	33	13	43	34	26	15	1	34	35	3	7
	Austria	76	19	23	37	18	19	27	18	16	7	3	20	59	1
	Belgium [1]	53	7	20	33	9	18	42	10	11	4	3	11	48	1
	Chile	13	1	4	19	0	1	8	1	0	2	1	1	30	0
	Czech Republic	48	12	18	22	9	12	15	15	11	4	4	17	48	1
	Denmark	31	6	20	36	6	18	32	10	10	2	5	11	37	0
	Estonia	6	8	18	26	4	7	11	12	5	8	2	13	34	0
	Finland	24	6	10	25	5	12	20	8	8	4	2	8	11	0
	France	252	7	13	38	7	13	40	9	10	4	2	10	13	4
	Germany	369	7	17	23	5	13	9	11	8	4	3	12	14	6
	Greece	22	3	1	2	3	1	2	3	3	5	1	3	70	0
	Iceland	2	5	11	42	6	9	32	9	8	14	1	8	6	0
	Ireland	24	7	23	36	6	13	25	10	7	7	2	11	7	0
	Israel	13	3	5	9	3	4	6	3	3	5	1	3	8	0
	Italy	59	2	4	16	5	5	13	3	5	4	1	3	18	1
	Japan	223	3	10	21	2	7	18	6	3	1	7	6	52	3
	Latvia	10	11	27	12	5	13	9	13	6	7	2	14	13	0
	Lithuania	7	4	12	7	3	7	4	6	4	9	1	6	21	0
	Luxembourg	4	24	75	89	26	71	87	48	46	77	0	22	48	0
	Mexico	43	1	2	8	0	1	3	1	0	1	1	1	46	1
	Netherlands	125	11	19	48	9	15	36	13	10	2	6	15	25	2
	New Zealand	44	14	34	49	16	24	46	17	21	2	9	21	7	1
	Norway	13	2	7	23	2	7	21	4	4	5	1	4	17	0
	Poland	62	4	5	8	2	3	2	4	3	2	2	5	63	1
	Portugal	44	8	14	33	3	6	21	12	5	6	2	12	2	1
	Slovenia	6	7	9	20	2	4	9	8	3	5	2	8	47	0
	Spain	82	2	11	19	1	7	m	4	3	2	2	4	27	1
	Sweden	32	3	12	36	2	10	33	7	6	3	2	7	18	1
	Switzerland	58	[10]	29	57	10	28	54	18	17	7	3	21	54	1
	United Kingdom	551	16	40	41	14	37	43	20	18	2	14	25	9	9
		Foreign students													
	Canada	323	14	20	36	10	14	30	18	11	3	6	22	3	5
	Colombia	5	0	1	2	m	m	m	0	0	2	0	0	61	0
	Costa Rica	3	m	m	m	m	m	m	m	m	m	m	m	56	0
	Hungary	38	10	21	25	5	14	7	13	7	5	3	15	21	1
	Korea	112	3	11	17	1	6	9	4	2	3	1	4	54	2
	Slovak Republic	14	9	12	12	4	8	9	10	6	20	0	9	60	0
	Türkiye	185	3	8	7	1	4	6	2	1	1	4	2	49	3
	United States	957	5	12	26	4	9	38	5	5	1	9	5	5	15
	OECD total	4 390	5	14	24	4	11	25	7	5	2	4	7	18	69
	EU22 total	1 388	6	13	24	5	10	17	8	7	4	2	9	25	22
		Foreign students													
Partners	Argentina [2]	116	m	m	m	m	m	m	m	m	m	m	m	47	2
	Brazil	22	0	1	2	0	1	3	0	0	1	0	0	38	0
	China	225	m	m	m	m	m	m	0	0	m	m	m	30	4
	India	49	m	m	m	m	m	m	0	0	m	m	m	49	1
	Indonesia [3]	8	m	m	m	m	m	m	m	0	m	m	m	73	0
	Saudi Arabia	69	m	m	m	m	m	m	4	5	m	m	m	43	1
	South Africa [2]	41	m	m	m	m	m	m	m	4	m	m	m	47	1

Note: See *Definitions* and *Methodology* sections for more information. Data on short-cycle tertiary (Columns 2 and 6) are available for consultation on line (see StatLink below).

1. Data on short-cycle tertiary programmes are based on nationality and refer to the Flemish community only.
2. Year of reference 2019.
3. Year of reference 2018.

Source: OECD/UIS/Eurostat (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf). Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/jacu6b

Table B6.2. Profile of international and foreign students (2020)

		Share of international or foreign students among female students					Share of international or foreign students among male students					Distribution of international or foreign students by region of origin					
		Short-cycle tertiary	Bachelor's	Master's	Doctoral	All tertiary	Short-cycle tertiary	Bachelor's	Master's	Doctoral	All tertiary	Africa	North America	Latin America and Carribean	Asia	Europe	Oceania
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
		International students															
OECD	Countries																
	Australia	27	13	45	28	22	43	19	56	39	31	2	1	5	85	3	1
	Austria	2	19	24	40	18	1	19	23	34	18	1	1	2	9	84	0
	Belgium [1]	2	8	19	32	11	2	6	20	33	10	13	1	3	8	57	0
	Chile	1	1	3	22	1	1	1	4	17	1	0	0	91	1	2	0
	Czech Republic	7	12	17	22	14	8	13	20	22	16	2	1	1	17	79	0
	Denmark	11	5	19	33	10	9	6	21	40	11	2	3	2	13	80	1
	Estonia	a	6	13	18	9	a	11	28	35	17	10	3	3	33	51	0
	Finland	a	5	8	21	7	a	6	14	30	9	7	2	3	38	28	0
	France	3	6	12	38	8	3	8	14	38	10	50	2	6	23	16	0
	Germany	0	7	15	23	11	0	7	20	23	12	10	3	5	41	33	0
	Greece	a	3	1	1	3	a	3	1	2	3	3	1	0	67	20	0
	Iceland	24	5	10	33	8	21	5	15	54	9	4	14	3	23	55	1
	Ireland	2	7	21	32	10	3	7	25	39	10	5	16	2	51	23	1
	Israel	2	3	4	8	3	2	3	6	11	4	3	18	5	19	37	1
	Italy	0	2	3	15	3	0	2	4	17	3	9	2	8	49	32	0
	Japan	7	3	14	27	5	17	3	8	18	6	1	1	1	94	3	0
	Latvia	0	5	18	7	7	2	17	39	18	20	1	1	0	57	41	0
	Lithuania	a	3	9	4	5	a	5	18	10	8	7	1	1	40	46	0
	Luxembourg	8	26	74	88	48	9	23	75	89	49	8	1	3	14	74	0
	Mexico	m	m	m	m	m	m	m	m	m	m	1	51	43	1	3	0
	Netherlands	2	12	20	45	14	3	10	19	51	13	2	2	2	16	57	0
	New Zealand	9	12	31	45	14	21	18	38	55	22	2	5	2	80	4	8
	Norway	1	2	6	18	4	1	3	9	28	5	8	5	4	38	42	0
	Poland	0	3	4	7	4	0	5	7	9	5	4	2	1	23	70	0
	Portugal	15	8	14	29	11	12	8	14	37	12	35	1	44	6	14	0
	Slovenia	4	7	9	20	8	3	8	10	20	8	2	1	1	5	92	0
	Spain	2	2	9	18	4	1	2	12	20	4	6	3	46	10	36	0
	Sweden	0	3	11	31	6	0	3	15	40	9	4	3	3	32	37	0
	Switzerland	0	10	30	56	18	0	10	29	58	18	4	3	4	13	70	0
	United Kingdom	5	15	37	40	19	5	17	45	42	22	6	5	2	59	28	1
		Foreign students															
	Canada	21	13	15	29	15	29	17	27	43	22	9	3	6	71	9	0
	Colombia	0	0	1	2	0	0	0	1	2	0	1	3	84	2	11	0
	Costa Rica	m	m	m	m	m	m	m	m	m	m	0	2	90	2	6	0
	Hungary	1	10	19	22	13	1	11	23	29	15	9	2	2	42	45	0
	Korea	1	4	12	20	5	1	2	9	14	3	2	1	1	95	1	0
	Slovak Republic	1	9	11	8	9	1	10	14	15	11	1	0	0	9	89	0
	Türkiye	0	2	6	5	2	1	3	9	9	3	15	1	0	72	12	0
	United States	1	4	9	17	4	2	6	17	34	7	5	3	8	76	7	1
	OECD total	3	5	12	22	6	4	5	17	26	7	8	3	6	58	21	1
	EU22 total	3	6	11	23	8	2	6	14	25	9	15	2	8	28	41	0
		Foreign students															
Partners	Argentina [2]	m	m	m	m	m	m	m	m	m	m	0	3	91	1	3	0
	Brazil	0	0	1	2	0	0	0	1	3	0	23	4	50	11	11	0
	China	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m	22	5	0	70	1	0
	Indonesia [3]	m	m	m	m	m	m	m	m	m	m	4	0	3	86	3	4
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	23	1	0	69	3	0
	South Africa [2]	m	m	m	m	m	m	m	m	m	m	83	2	0	3	5	0

Note: See *Definitions* and *Methodology* sections for more information.
1. Data on short-cycle tertiary programmes are based on nationality and refer to the Flemish community only.
2. Year of reference 2019.
3. Year of reference 2018.
Source: OECD/UIS/Eurostat (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/t8u1nz

Table B6.3. Share of tertiary students enrolled in selected broad fields of study, by mobility status (2015 and 2020)

		2020						2015					
		Education		STEM		Health and welfare		Education		STEM		Health and welfare	
		Mobile	National	Mobile	National	Mobile	National	Mobile	National	Mobile	National	Mobile	National
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
		International students											
OECD	Countries												
	Australia	4	11	30	19	11	24	2	11	27	17	9	20
	Austria	5	14	32	30	9	9	6	15	30	29	8	7
	Belgium	3	10	20	19	32	26	4	13	19	17	34	26
	Chile	5	11	29	27	17	22	6	10	28	26	13	22
	Czech Republic	2	14	32	25	18	13	2	11	31	27	18	12
	Denmark	2	8	37	21	9	25	2	9	31	18	9	23
	Estonia	3	8	29	31	4	14	0	7	21	31	4	11
	Finland	3	6	43	33	11	19	2	5	43	33	11	19
	France	1	3	35	25	7	15	2	4	32	25	6	17
	Germany	2	9	50	35	7	9	2	8	44	37	7	7
	Greece	5	4	32	35	12	8	4	4	31	34	11	9
	Iceland	8	15	25	19	4	17	8	12	23	21	4	14
	Ireland	1	8	33	27	24	17	1	6	30	28	29	16
	Israel	13	20	32	32	11	9	8	18	24	31	13	8
	Italy	1	8	28	25	9	14	m	m	m	m	m	m
	Japan	m	m	m	m	m	m	m	m	m	m	m	m
	Latvia	1	8	21	26	25	15	2	7	13	25	26	12
	Lithuania	1	4	22	27	26	19	3	6	15	25	17	13
	Luxembourg	5	19	30	22	2	12	6	21	21	18	3	9
	Mexico	m	m	m	m	m	m	m	m	m	m	m	m
	Netherlands	m	m	m	m	m	m	m	m	m	m	m	m
	New Zealand	5	8	33	24	8	18	m	9	m	22	m	17
	Norway	4	17	33	19	11	18	5	15	36	21	11	18
	Poland	2	9	19	24	17	14	2	10	15	27	17	10
	Portugal	4	3	27	30	12	16	7	4	30	30	10	16
	Slovenia	4	10	37	30	7	14	6	9	35	29	10	12
	Spain	4	12	20	25	22	16	4	12	21	26	27	14
	Sweden	3	14	46	27	11	18	3	13	47	26	12	19
	Switzerland	5	11	40	25	9	18	5	10	37	24	7	16
	United Kingdom	2	6	28	23	7	17	2	8	30	28	7	17
		Foreign students											
	Canada	1	5	41	26	5	17	1	6	36	22	5	15
	Colombia	6	8	22	28	16	7	m	m	m	m	m	m
	Costa Rica	m	m	m	m	m	m	m	m	m	m	m	m
	Hungary	m	14	m	26	m	9	m	11	m	27	m	8
	Korea	3	6	16	34	4	14	3	6	22	33	5	13
	Slovak Republic	9	13	18	23	42	18	8	12	8	24	56	16
	Türkiye	5	4	31	14	14	13	6	6	31	17	11	7
	United States	m	m	m	m	m	m	m	m	m	m	m	m
	OECD total	3	7	31	23	10	14	3	8	29	24	10	13
	EU22 total	2	8	35	27	12	14	3	8	31	29	13	13
		Foreign students											
Partners	Argentina	m	m	m	m	m	m	m	m	m	m	m	m
	Brazil	12	19	31	18	17	19	9	18	35	22	12	15
	China	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m	m	m	m	m	m	m

Note: STEM refers to the fields of science, technology, engineering and mathematics. Mobile students refer to students who are either international or foreign. See *Definitions* and *Methodology* sections for more information

Source: OECD/UIS/Eurostat (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-B.pdf). Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

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Chapter C. Financial resources invested in education

Introduction

Educational expenditure indicators help to show what, how and where financial resources are directed to education. Every year, governments, private companies, students and their families make decisions about the financial resources invested in education. These investments are made with the well-established idea that expenditure on education enhances labour productivity by improving the skills of the workforce (Mallick, Das and Pradhan, 2016[1]) which might affect economic growth and social development. Therefore, analysing various aspects of educational finance helps clarify the efforts made by countries in education as well as its possible impact on future national economic and social perspectives. In addition, the search for effective financial policies in education requires evaluating educational expenditure of a country's education system in light of other countries.

The framework for international educational finance indicators

At the national level, educational institutions are the most common defining unit of analysis for analysing expenditure on education. This approach reflects the traditional interest in knowing how much schools, colleges and universities cost, and how much of that is paid by the government or by students, for instance. However, this does not take into account that educational systems around the world might spend their resources differently. For instance, the goods and services provided by educational institutions in one country may be provided outside educational institutions in another. Another example arises when comparing the educational goods and services associated with educational institutions. There are some goods and services they provide that are not associated with education or instruction, so considering them might affect comparability across countries. Finally, educational systems are funded differently; in some countries public sources might be more relevant, in others private sources might be an important source of funding. Therefore, a framework for international educational expenditure is needed to make comparisons across countries.

The framework for international educational expenditure is built around three dimensions:

- **The location of service providers (within or outside of educational institutions)**. Spending on educational institutions includes spending on teaching institutions such as schools and universities, and non-teaching institutions such as education ministries and other agencies directly involved in providing and supporting education. Spending on education outside these institutions covers expenditure on educational good and services purchased outside institutions, such as books, computers and fees for private tutoring. It also covers student living costs and the cost of student transport not provided by educational institutions.
- **The type of goods and services provided or purchased (core or peripheral goods and services)**. Educational core goods and services include all expenditure directly related to instruction and education. It covers all expenditure on teachers, maintenance of school buildings, teaching materials, books, tuition outside schools and administration of schools. However, not all expenditure on educational institutions can be classified as direct educational or instructional expenditure. Educational institutions in many OECD countries offer various ancillary services – such as meals, transport and housing – in addition to teaching services to support students and their families. At the tertiary level, spending on research and development can be significant. Additionally, not all spending on educational goods and services occurs within educational institutions. For example, families may purchase textbooks and materials themselves or seek private tutoring for their children. In this sense, "non-instruction" expenditure covers all expenditure broadly related to student living costs or services provided by institutions for the general public. Differentiating the spending devoted to educational and non-educational goods and services offered by institutions also provides for an analysis of the expenditure devoted to core educational purposes.
- **The source of funds that finance the provision or purchase of these goods and services (from public, private and international sources).** Considering the source of funds dedicated to education spending assesses who the major contributors are and the impact this may have on the access and provision of education. Public expenditure

refers to spending by public authorities (central, regional and local governments). Private expenditure refers to expenditure by households and other private entities. International funds consist of funds from public multilateral organisations for development aid to education. These sources of funds can be analysed from the perspective of either the initial or the final payer, depending on when the transaction is made. The initial source of funds is the original source of the funds before transfers have taken place, while the final source of funds is after transfers have taken place. Public transfers of funds to private entities fall into two distinct categories: public subsidies to households (e.g. scholarships and grants), and public subsidies to other private entities (e.g. subsidies to private companies for the provision of training at the workplace as part of combined school and work-based programmes, including apprenticeship programmes). Other type of transactions are the intergovernmental transfers of funds.

International classification of educational expenditure in this chapter

Public and international funds
Private funds
Publicly subsidised private funds

		Location of service providers	
Types of goods and services		**Spending on educational institutions** (e.g. schools, universities, educational administration and student welfare services)	**Spending on education outside educational institutions** (e.g. private purchases of educational goods and services, including private tutoring)
Spending on core educational goods and services		Public and international funds *e.g. public spending on instructional services in educational institutions*	Publicly subsidised private funds *e.g. subsidised private spending on books, materials or fees for private tutoring*
		Publicly subsidised private funds *e.g. subsidised private spending on instructional services in educational institutions*	Private funds *e.g. private spending on books and other school materials or private tutoring*
		Private funds *e.g. private spending on tuition fees*	
Educational peripheral goods and services	**Spending on research and development**	Public and international funds *e.g. public spending on university research*	
		Private funds *e.g. funds from private industry for research and development in educational institutions*	
	Spending on educational services other than instruction	Public and international funds *e.g. public spending on ancillary services such as meals, transport to schools, or housing on the campus*	Publicly subsidised private funds *e.g. subsidised private spending on student living costs or reduced prices for transport*
		Publicly subsidised private funds *e.g. public subsidies for lodging, meals, health services, or other welfare services furnished to students by the educational institutions*	
		Private funds *e.g. private spending on fees for ancillary services*	Private funds *e.g. private spending on student living costs or transport*

Classification of educational expenditure

According to the international framework for educational expenditure presented above, educational expenditure in this chapter is also classified into three dimensions:

- The first dimension – represented by the horizontal axis in the diagram below – relates to the location where spending occurs (within or outside educational institutions).

- The second dimension – represented by the vertical axis in the diagram below – classifies the type of goods and services that are purchased (core or peripheral goods and services).
- The third dimension – represented by the colours in the diagram below – distinguishes the sources from which funding originates. These include the funds from the public sector and international agencies (indicated by light blue), and the private funds such as funds from households and other private entities (indicated by medium blue). Where private expenditure on education is subsidised by public funds, this is indicated by grey cells. The uncoloured cells indicate the parts of the framework that are excluded from the coverage of the finance indicators in Education at a Glance.

Accounting principle

In keeping with the system used by many countries to record government expenditures and revenues, educational expenditure data are compiled on a cash accounting rather than an accrual accounting basis. That is to say that expenditure (both capital and current) is recorded in the year in which the payments occurred. This means in particular that:

- Capital acquisitions are counted fully in the year in which the expenditure occurs.
- Depreciation of capital assets is not recorded as expenditure, although expenditure on repairs and maintenance is recorded in the year it occurs. This can result in sharp fluctuations in expenditure from year to year owing to the onset or completion of school building projects which, by their nature, are sporadic.
- Expenditure on student loans is recorded as the gross loan outlay in the year in which the loans are made, without subtracting repayments or interest payments from existing borrowers.

A notable exception to the cash accounting rules is the treatment of the retirement costs of educational personnel in situations where there are no (or only partial) ongoing employer contributions towards the future retirement benefits of the personnel. In these cases, countries are asked to impute these expenditures in order to arrive at a more internationally comparable cost of employing the personnel.

International educational finance indicators

This chapter provides a comprehensive and comparative analysis on education expenditure across OECD and partner countries, focusing on six aspects of educational spending:

- Financial resources invested in educational institutions, relative to the number of students (Indicator C1), and relative to national output (Indicator C2).
- The source of funds devoted to educational institutions (Indicator C3).
- Total public resources invested in education, both inside and outside educational institutions, relative to total government spending (Indicator C4).
- Students' costs and the financial support for tertiary studies (Indicator C5).
- The distribution of educational expenditure across resource categories (Indicator C6).

Reference

Mallick, L., P. Das and K. Pradhan (2016), “Impact of educational expenditure on economic growth in major Asian countries: Evidence from econometric analysis”, *Theoretical and Applied Economics*, Vol. XXIII/2, pp. 173-186. [1]

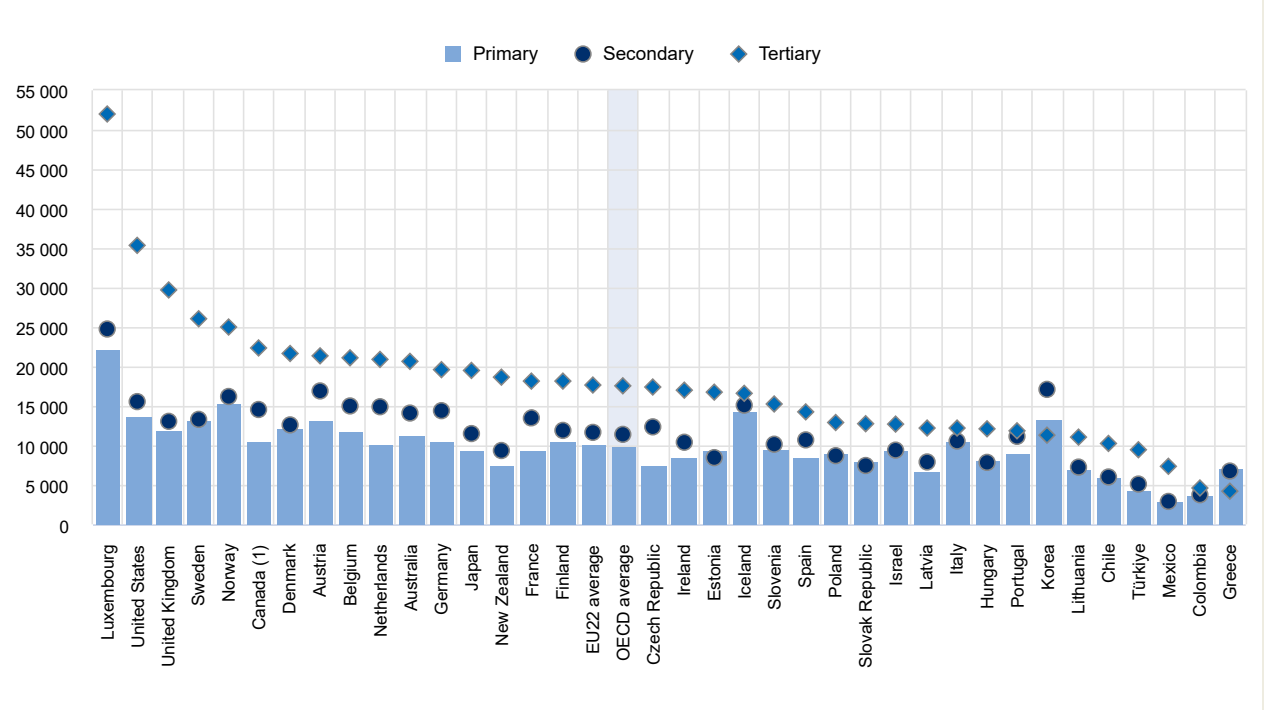
Indicator C1. How much is spent per student on educational institutions?

Highlights

- In 2019, OECD countries spent an average of USD 17 560 per student per year at the tertiary level. However, this average is driven up by high values in a few countries, reaching over USD 25 000 in Luxembourg, Norway, Sweden, the United Kingdom and the United States.
- On average across OECD countries, 63% of total expenditure on tertiary educational institutions goes to core services (e.g. teachers' salaries, school buildings, teaching materials and administration), 33% on research and development (R&D) activities, and 4% on ancillary services (e.g. meals and transport).
- Between 2012 and 2019, expenditure on tertiary educational institutions grew by an average of 1.4% per year in real terms across OECD countries, while the number of students increased only by 0.3% per year. This resulted in an average increase in expenditure per student in tertiary education of 1.0% per year.

Figure C1.1. Total expenditure per full-time equivalent student by level of education (2019)

In equivalent USD converted using PPPs for GDP; direct expenditure within educational institutions



1. Primary education includes pre-primary programmes.
Countries are ranked in descending order of total expenditure per full-time equivalent student for tertiary students.
Source: OECD/UIS/Eurostat (2022), Table C1.1. See *Source* section for more information and Annex 3 for notes https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

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Context

The willingness of policy makers to expand access to educational opportunities and to provide high-quality education can translate into higher costs and must be balanced against other demands on public expenditure and the overall tax burden. As a result, the question of whether the resources devoted to education yield adequate returns features prominently in public debate. Although it is difficult to assess the optimal resources needed to prepare each student for life and work in modern societies, international comparisons of spending on educational institutions per student can provide useful reference points.

This indicator provides an assessment of the investment in each student. Expenditure per student on educational institutions is influenced by teachers' salaries (see Indicator D3), pension systems, instructional and teaching hours (see Indicators D4), the cost of teaching materials and facilities (see Indicator C6), the programme provided (e.g. general or vocational), and the number of students enrolled in the education system (see Indicator B1). Policies to attract new teachers, reduce average class sizes or change staffing patterns have also affected per-student expenditure. In some countries expenditure for ancillary services and R&D can also have great influence on the expenditure per student.

In general, at primary and secondary levels, educational expenditure is dominated by spending on teaching. At the tertiary level, other services, particularly those related to ancillary services or R&D activities, can account for a significant proportion of educational spending.

Other findings

- On average, the expenditure per student on short-cycle tertiary programmes each year is about two-thirds that of at bachelor's, master's and doctoral levels combined.
- The total resources devoted to private educational institutions are similar to those devoted to public institutions on average across all education levels. Across OECD countries, the average total expenditure on primary to tertiary public institutions amounts to about USD 11 900 per student, compared to just under USD 12 100 in private institutions.
- Expenditure on tertiary academic programmes is higher than on professional programmes for almost all of the eight countries with available data. In Chile, the Czech Republic, Germany and Greece, expenditure per student on academic programmes is at least twice as high as on professional programmes.
- On average across the OECD, countries spend a cumulative total of USD 105 500 to educate a student from the age of 6 to the age of 15. Austria, Luxembourg, and Norway spend over USD 150 000 per student over these years, while the figure is less than USD 50 000 in Colombia and Türkiye.

Analysis

Overall expenditure per student on educational institutions

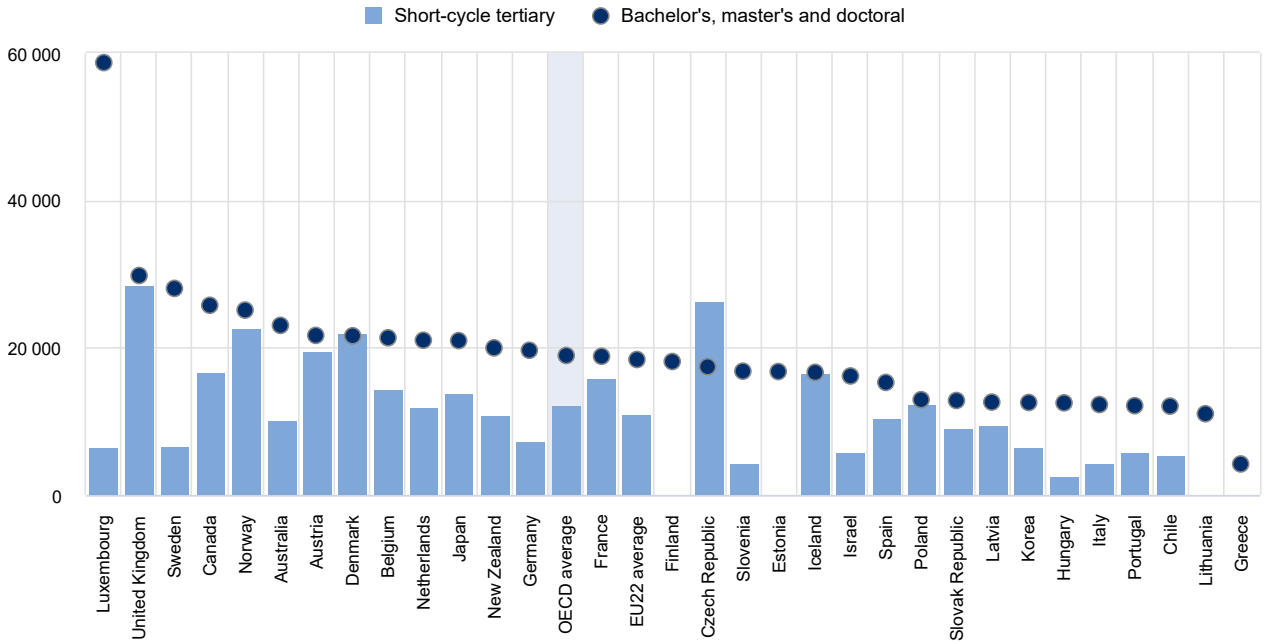
Annual expenditure per student on primary to tertiary educational institutions provides an assessment of the investment made in each student. In 2019, the average annual spending per student from primary to tertiary education in OECD countries as a whole was around USD 12 000. But this average masks a broad range of spending across OECD countries. Annual spending per student at these levels ranged from around USD 3 600 in Mexico to around USD 17 500 in Austria and Norway, around USD 19 500 in the United States and over USD 25 400 in Luxembourg (Table C1.1). The drivers of expenditure per student vary across countries and by level of education: in Luxembourg, for example high teachers' salaries at primary and secondary levels (see Indicator D3) are reflected in high levels of expenditure per student. In contrast, Colombia has one of the highest ratios of students to teaching staff (see Indicator D8 and Education at a Glance Database), which tends to drive costs down (OECD, 2021[1]).

Expenditure per student on educational institutions by level of education

The way resources are allocated across the different levels of education varies widely from level to level and largely reflects the mode of educational provision. Education still essentially takes place in settings with generally similar organisations, curricula, teaching styles and management. These shared features have tended to result in similar patterns of expenditure per student from primary to post-secondary non-tertiary levels. OECD countries as a whole spend on average around USD 9 900 per student at the primary level and USD 11 400 per student at secondary level (Figure C1.1). At the secondary level, and particularly at upper secondary, the level of expenditure is strongly influenced by the programme orientation. Vocational education and training (VET) programmes, which may require specific equipment and infrastructure, typically cost more per student than general programmes (Table C1.1).

Figure C1.2. Total expenditure per full-time equivalent student, by level of tertiary education (2019)

In equivalent USD converted using PPPs; direct expenditure within educational institutions



Countries are ranked in descending order of total expenditure per full-time equivalent student for bachelor's, master's and doctoral students.
Source: OECD/UIS/Eurostat (2022), Table C1.1. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

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In 2019, expenditure per student averaged USD 17 560 at the tertiary level across OECD countries. However, this figure is driven up by high values in a few countries, reaching over USD 25 000 in Luxembourg, Norway, Sweden, the United Kingdom and the United States (Figure C1.1 and Table C1.1). The available data also show annual expenditure per student varies widely depending on the tertiary education level. On average, expenditure on short-cycle tertiary programmes is about two-thirds of combined bachelor's, master's and doctoral or equivalent levels (or long-cycle tertiary), but again, this masks wide variation across countries. Expenditure on short-cycle tertiary programmes ranges from less than 25% of bachelor's, master's and doctoral or equivalent levels in Hungary, Luxembourg and Sweden to roughly equal levels of spending in Denmark and Iceland, and greater expenditure per student at short-cycle tertiary level in the Czech Republic where, in 2019 expenditure at this level was 52% higher (Figure C1.2).

Annual expenditure per student can also vary substantially within countries, particularly in those where a large share of education expenditure is provided by local governments (Box C1.1).

Box C1.1. Subnational variation in annual expenditure per student on educational institutions

Decentralisation of government services in OECD countries often results in subnational governments being responsible for the delivery of key government services such as education (Dougherty and Phillips, 2019[2]). Evidence shows that educational performance (Kim and Dougherty, 2018[3]) and human capital levels (Blöchliger, Égert and Bonesmo Fredriksen, 2013[4]) might increase as a result of fiscal decentralisation and increased budget devoted to education. Annual expenditure per student can be quite heterogeneous across countries with large differences between regions, due to their economic circumstances and geographic challenges. Among the eight countries with available data at subnational level, Canada and the United States have the highest variation in annual expenditure per student on educational institutions at primary and secondary levels combined: in the United States, the region with the highest value (around USD 28 200) spends over three times as much per student as the region with the lowest value (around USD 9 100). Smaller regional differences are found in Colombia and Germany, while in Belgium and Lithuania, expenditure per student on primary and secondary educational institutions is almost identical across the regions (OECD, 2022[5]).

Expenditure per student on core education services, ancillary services and R&D

On average across OECD countries, expenditure on core education services (such as teaching costs and other expenditure related to education) represents 86% of total expenditure per student from primary to tertiary educational institutions, and this share reaches the highest values in Chile, Latvia, Luxembourg and Türkiye. In less than half of OECD countries with available data, annual expenditure on R&D and ancillary services per student accounts for around 15% or more at primary to tertiary level. In Denmark, Finland, and Sweden, this reaches 20% or more (Table C1.4).

However, this overall picture masks large variations across levels of education. At non-tertiary levels (primary, secondary and post-secondary non-tertiary education), expenditure is dominated by spending on core education services. On average, OECD countries spend about 95% of their total per-student expenditure (about USD 10 360) on core educational services at these levels. However, in Finland, France, the Slovak Republic, Sweden and the United Kingdom, ancillary services account for 10% or slightly more of the total (Table C1.4).

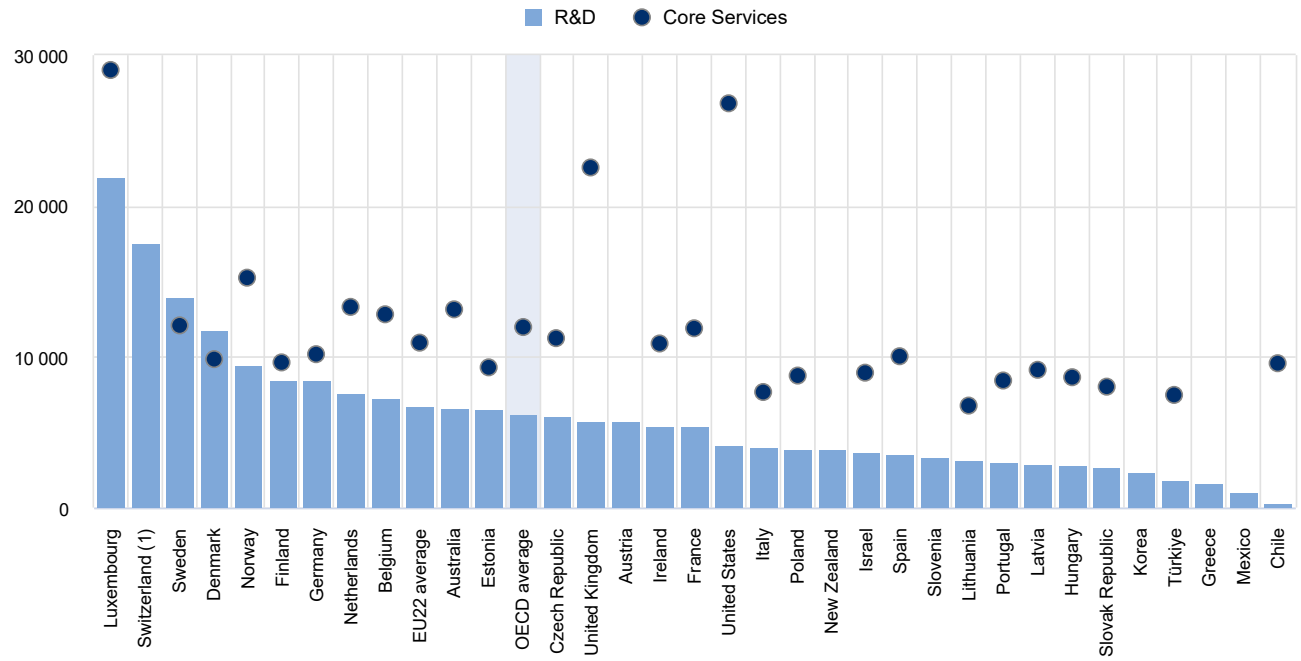
The breakdown of total expenditure on educational institutions per student devoted to core services differs more widely at tertiary level, as R&D expenditure can account for a significant proportion of educational spending. OECD countries in which R&D is mostly conducted in tertiary educational institutions tend to report higher levels of expenditure per student than those where a large proportion of R&D is performed in other public institutions or in research institutes. On average across OECD countries, 63% of total expenditure on educational institutions at tertiary level goes to core services while expenditure on R&D and ancillary services together average 37%, with ancillary services accounting for less than 5%. In six of the OECD countries for which data are available, expenditure on R&D and ancillary services in tertiary institutions is at least 40% of total expenditure on educational institutions per student, with Denmark and Sweden recording the highest shares, at 50% or more (Table C1.4).

Expenditure per student on core services across OECD countries averages about USD 12 000, ranging from less than USD 7 000 in Lithuania to over USD 26 000 in Luxembourg and the United States. Expenditure per student on R&D activities averages around USD 6 200 across the OECD and ranges from less than USD 1 000 in Chile to around USD 11 800 in Denmark, around USD 14 000 in Sweden and over USD 17 000 in Luxembourg and Switzerland (Figure C1.3). Expenditure

on ancillary services is negligible (below USD 100 per student) in the Czech Republic, Denmark, Finland, Israel and Sweden. The United States spends the most in ancillary services per student at tertiary level among OECD countries, at over USD 4 400 per student (Table C1.4).

Figure C1.3. Total expenditure per full-time equivalent student on tertiary educational institutions for R&D and core educational services (2019)

In equivalent USD converted using PPPs for GDP; direct expenditure within educational institutions



1. Year of reference differs from 2019. Refer to the source table for more details.
Countries are ranked in descending order of total expenditure per full-time equivalent student on educational institutions for R&D.
Source: OECD/UIS/Eurostat (2022), Table C1.4. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

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Expenditure per student varies less between different tertiary programme categories, but is generally higher for academic programmes than for professional programmes. This is probably due to a higher incidence of R&D funding in academic programmes. However, only a few countries collect the data needed to carry out this type of analysis (Box C1.2).

Box C1.2. Expenditure on tertiary educational institutions for academic and professional programmes

Tertiary education builds on secondary education, providing learning activities in specialised fields of education. It aims at learning at a high level of complexity and specialisation and includes programmes with very different design features and functions. Tertiary education has not just expanded over the last decades, it has also diversified. Programmes are now offered by a wider range of institutions and it is now common in many countries to have universities of applied sciences alongside more traditional universities (OECD, 2022[6]). Therefore, tertiary education is not just what is commonly understood as academic education but also includes advanced vocational or professional education (UNESCO-UIS, 2012[7]).

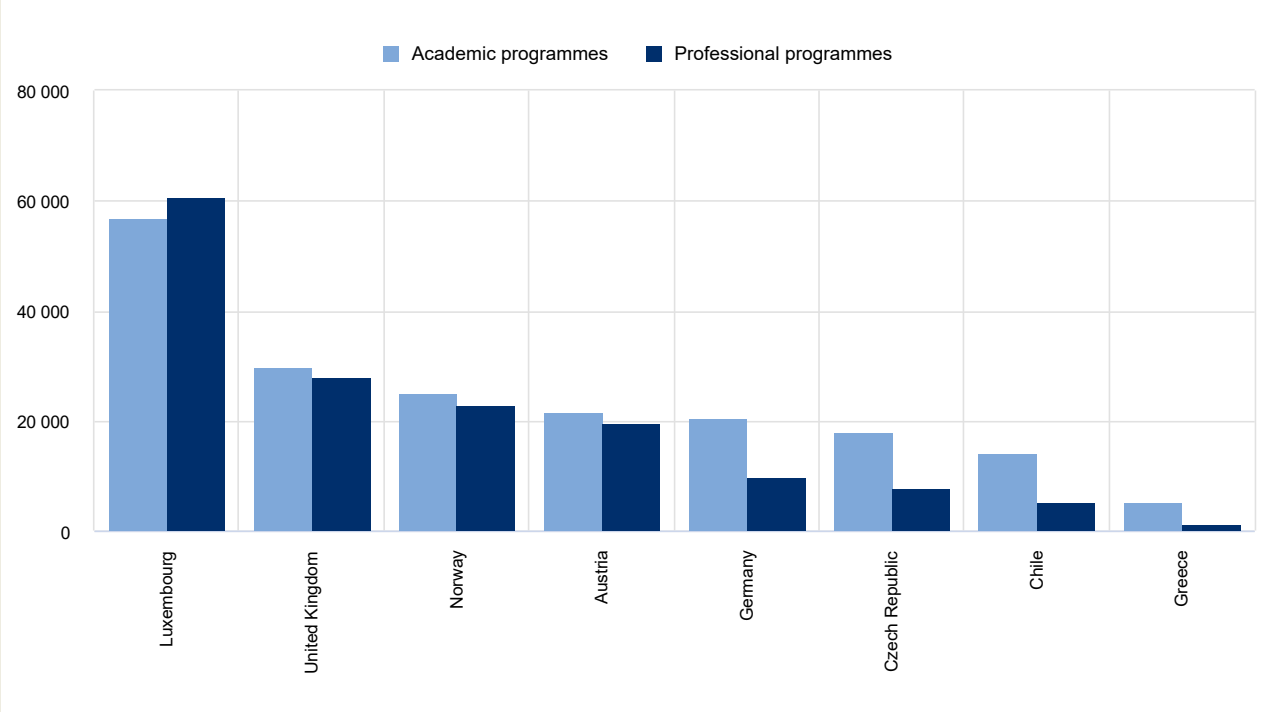
Tertiary professional programmes can range from free-standing professional examinations designed to upskill existing practitioners to full professional bachelor's degrees. In general, they are designed to give learners the knowledge, skills

and competencies specific to a particular occupation, trade, or class of occupations or trades. Programmes may have work-based components (e.g. apprenticeships, traineeship and dual-system education programmes) and their successful completion may lead to specific labour market-relevant qualifications. Academic programmes are designed to develop learners' general knowledge, skills and competencies to prepare participants for more advanced education programmes. Academic education does not normally prepare for employment in a particular occupation, trade or class of occupations or trades, nor lead directly to a labour market-relevant qualification (UNESCO-UIS, 2012[7]). In some cases the scale of enrolment in professional tertiary education rivals that of regular universities, in other cases practically oriented programmes are taught in multi-purpose institutions alongside programmes like history or physics. For example, France applies a broad definition of "professional" and includes five-year business schools and long first degree programmes in law, medicine, pharmacy and odontology in this category (OECD, 2022[6]).

At tertiary education levels, the terms "academic" and "professional" are used in place of general and vocational respectively. ISCED 2011 does not define academic and professional more precisely for higher ISCED levels, but allows programme orientations to be distinguished based on national definitions and criteria. Among the countries that report data by orientation in this way, expenditure per student on academic tertiary programmes is higher than on professional ones for almost all the countries with available data. In Chile, the Czech Republic, Germany and Greece, expenditure per student for academic programmes is at least twice as high as for professional programmes. This could generally be explained by the greater focus on research and development in traditional universities where academic programmes are delivered. However, this explanation may not hold in all instances, in particular in Austria, Norway and the United Kingdom, where the difference is relatively low, and in Luxembourg, where expenditure per student is slightly higher for professional programmes (Figure C1.4).

Figure C1.4. Total expenditure on tertiary educational institutions per full-time equivalent student, by programme orientation (2019)

In equivalent USD converted using PPPs for GDP; direct expenditure within educational institutions



Countries are ranked in descending order of total expenditure on educational institutions per full-time equivalent tertiary student in academic programmes.
Source: OECD/UIS/Eurostat (2022), Education at a Glance Database. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

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Cumulative expenditure over the expected duration of studies

Policy makers are interested in the relationship between the resources devoted to education and the outcomes of education systems (OECD, 2017[8]). In order to compare the cost of education across countries, it is important to consider not only the annual expenditure per student, but also cumulative expenditure over the total period students are expected to spend at a given educational level. High expenditure per student, for example, might be offset by short programmes or fewer students accessing education at certain levels. On the other hand, a seemingly inexpensive education system per student might prove more costly overall if enrolment is high and students spend longer in school.

Primary and secondary education are usually compulsory across the OECD, and adding up the expenditure per student for the years between 6 and 15 at these levels gives the theoretical cumulative expenditure per student for compulsory education. On average across OECD countries, the cumulative spending on each student between the age of 6 and the age of 15 adds up to a total of around USD 105 500. This total varies considerably across countries: Austria, Luxembourg and Norway spend over USD 150 000 per student over these years, while the figure is less than USD 50 000 in Colombia and Türkiye (Table C1.7, available on line).

Total and public expenditure on educational institutions per student, by type of institution

The way resources are allocated to public and private institutions varies widely across educational levels, although both types of institutions have similar average levels of expenditure per student. On average across OECD countries, total expenditure on primary to tertiary public institutions amounts to about USD 11 900 per student, compared to just under USD 12 100 in private ones. However, the differences are more substantial in countries such as Israel, the Netherlands, and Türkiye, where expenditure per student on private institutions is at least 70% higher than expenditure on public ones. In contrast, in countries such as the Czech Republic, Luxembourg, and New Zealand, expenditure on private institutions is at least 40% lower than on public institutions (Table C1.2).

Government funding for education is generally spent on public institutions but some countries spend a large part of the public budget on private educational institutions. On average across OECD countries, public expenditure per student on primary to tertiary public educational instructions (about USD 11 000) is nearly twice the public expenditure per student on private institutions (about USD 5 900). However, the gap varies at different levels of education. At non-tertiary levels, average public expenditure per student on public institutions is about USD 10 300, about 50% more than public expenditure on private institutions (about USD 6 500), whereas at tertiary level it averages about USD 14 100 on public institutions, more than three times the expenditure on private institutions (USD 4 500) (Table C1.2).

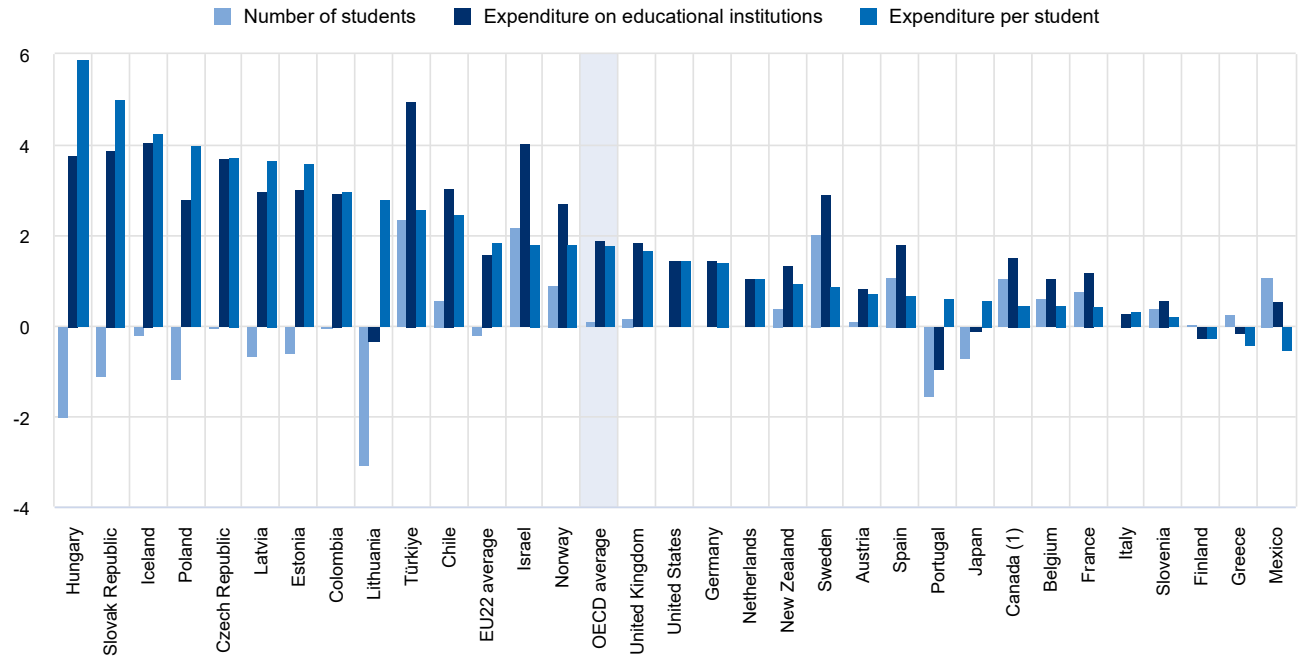
Change in expenditure per student on educational institutions between 2012 and 2019

Changes in expenditure on educational institutions largely reflect changes in the size of the school-age population and the expenditure allocated to teachers' compensation, one of the main drivers of education expenditure. The size of the school-age population influences both enrolment levels and the amount of resources and organisational effort a country must invest in its education system. The larger this population, the greater the potential demand for education services. Changes in expenditure per student over the years may also vary between levels of education within countries, as both enrolment and expenditure may follow different trends at different levels of education.

Between 2012 and 2019, expenditure on primary to tertiary educational institutions in OECD countries grew by an average of 1.6% per year in real terms, while the number of students remained relatively stable. This meant expenditure per student grew at an average annual rate of 1.7%. Spending per student grew in all countries with available data in the period 2012-19, with the exception of Finland, Greece and Mexico, where spending per student fell by 0.3-0.5% per year on average. Expenditure per student fell in Finland and Greece due to the combination of stagnating funding for educational institutions and a slight increase in the number of students, whereas in Mexico the fall was due to student numbers growing faster than educational expenditure. In some countries in the European Union, such as Estonia, Hungary, Latvia, Poland and the Slovak Republic, the strong annual growth rates in expenditure per student (over 3%) can be explained by a large increase in expenditure accompanied by a reduction in the number of students during the period under analysis. Outside the European Union, Colombia, Iceland and Türkiye also report increases in spending per student of around or above 2.5% per year in real terms since 2012 (Figure C1.5).

Figure C1.5. Average annual growth in total expenditure on primary to tertiary educational institutions per full-time equivalent student (2012 to 2019)

In per cent, constant prices



1. Primary education includes pre-primary programmes.
Countries are ranked in descending order of the average annual growth in total expenditure on primary to tertiary educational institutions per full-time equivalent student.
Source: OECD/UIS/Eurostat (2022), Table C1.3 and Education at a Glance Database. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

StatLink https://stat.link/m9f6vd

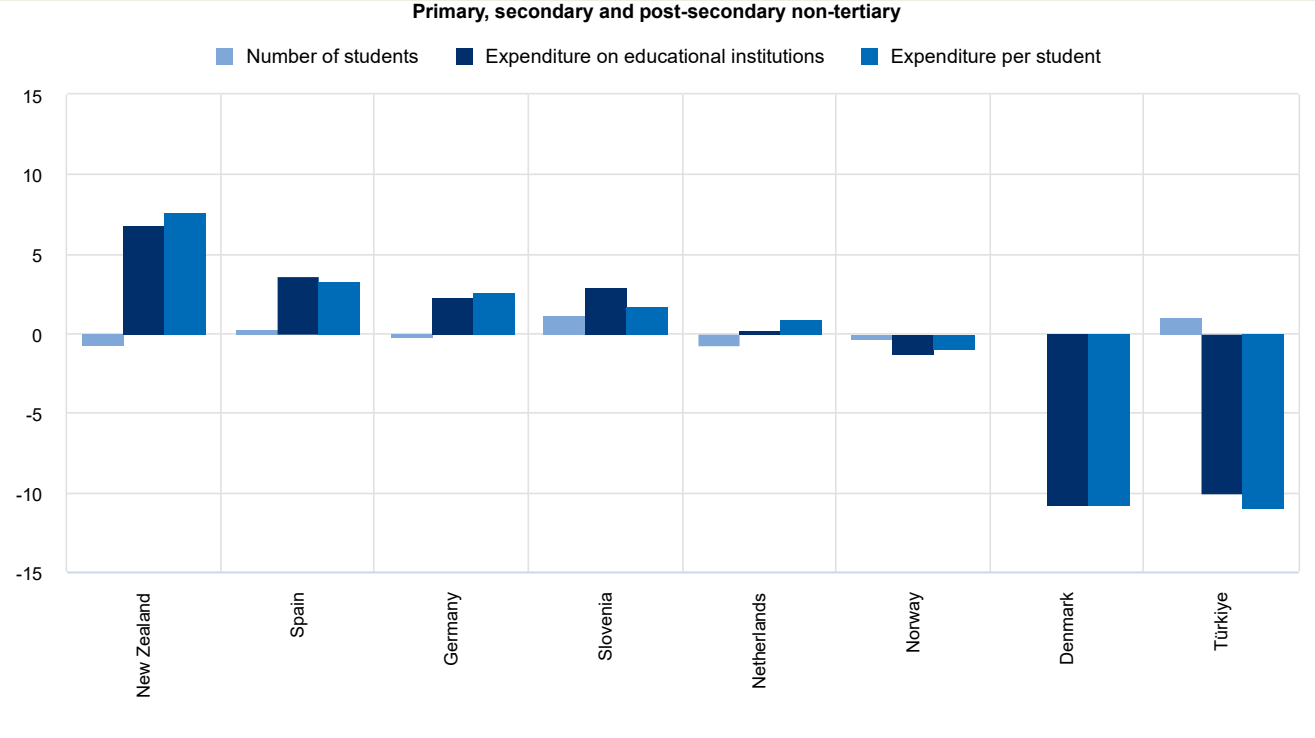
Box C1.3. Provisional data on the change in expenditure per student in 2020

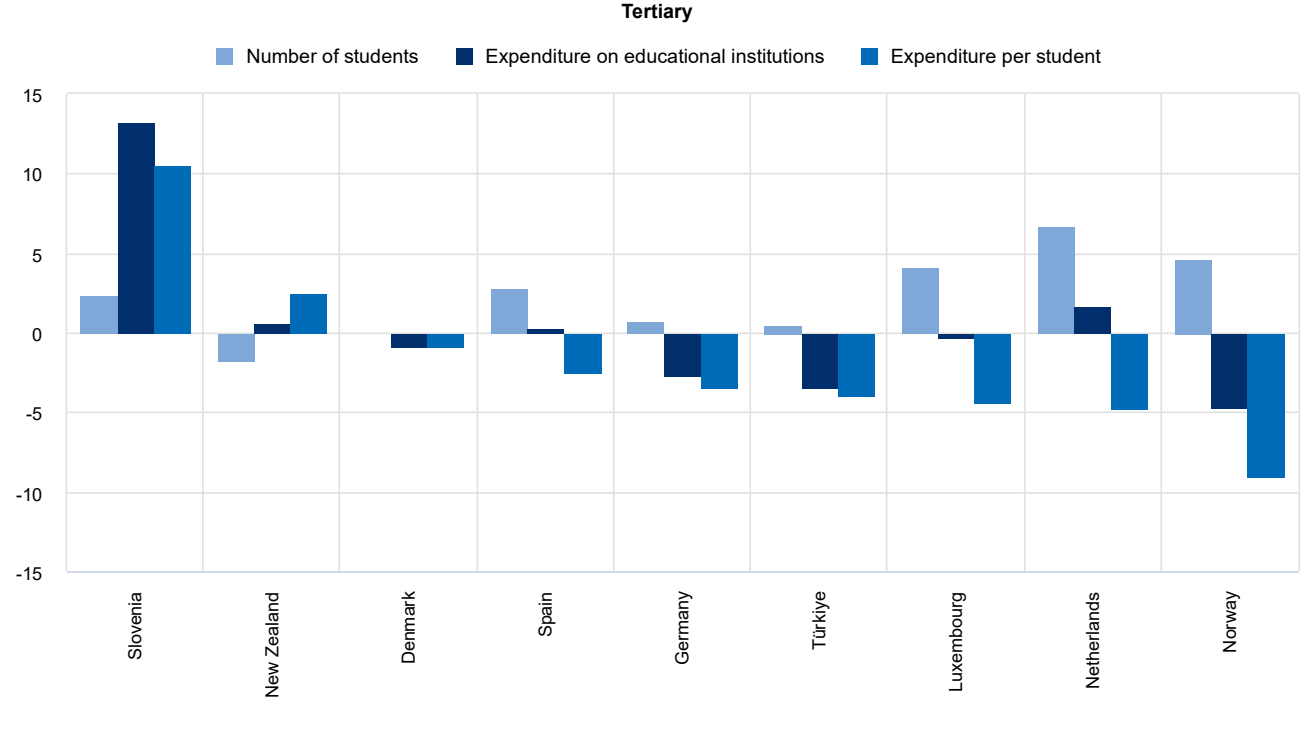
Prior to the COVID-19 pandemic, global education funding was growing steadily and low- and middle-income countries were experiencing the fastest growth rates. Since the beginning of the COVID-19 pandemic started, education budgets declined in the majority of these countries (UNESCO and World Bank, 2021[9]). In contrast, while education budgets were growing at much more moderate pace before the pandemic among high-income countries, including many OECD countries, education budgets did not decrease and their share of total government expenditure did not change very much post-COVID (see Indicator C4). As schools were closed for extended periods in 2020, it was important to ensure that adequate resources were made available for remote learning and to maintain and expand student support programs; once schools reopened, it was critical to allocate additional funding to educational institutions (Al-Samarrai, Gangwar and Gala, 2020[10]).

As the OECD reported in 2021, half of the OECD countries with available data increased funding for primary to post-secondary non-tertiary educational institutions between 2019 and 2020 (OECD, 2021[11]). In five of the eight countries with provisional data available at this level, expenditure per student grew by 1-7.6% between 2019 and 2020 despite the number of students remaining rather stable (±1.1%). In the remaining three countries, a decrease in expenditure translated into a decline in expenditure per student, regardless of the small changes in the number of students. At the tertiary level, according to provisional data on educational finance, only in New Zealand and Slovenia did expenditure per student increase in 2020, while it decreased in all other countries and reached -4.8% in the Netherlands and -8.9% in Norway. In Luxembourg, the Netherlands and Norway, the fall in expenditure per student was due also to an increase in the number of students by 4% or more (Figure C1.6).

Figure C1.6. Provisional data on the change in total expenditure on educational institutions per full-time equivalent student between 2019 and 2020

In per cent, constant prices





Countries are ranked in descending order of the average annual growth in total expenditure on educational institutions per full-time equivalent student.

Source: OECD/Eurostat (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

StatLink https://stat.link/769bsn

The number of students in non-tertiary education remained fairly stable on average across OECD countries between 2012 and 2019. During this period, expenditure on non-tertiary educational institutions grew by an annual average of 1.6%. As a result, expenditure per student at these levels increased by 1.7% per year on average between 2012 and 2019. Most OECD countries spent more per student in 2019 than they did in 2012, with the exception of Greece, Mexico, and Slovenia. Expenditure per student on non-tertiary institutions increased by at least 4% per year in Colombia, the Czech Republic, Hungary, Iceland, Lithuania, the Slovak Republic and Türkiye. This growth was due to stable or slight annual reductions in student numbers, combined with large annual increases (above 4%) in total spending (Table C1.3).

Expenditure at tertiary level increased slightly more slowly than at lower levels of education, growing by 1.4% per year on average between 2012 and 2019 in OECD countries. However, it grew faster than the number of students enrolled over this period (0.3% per year on average). This resulted in a 1.0% increase per year on average. There are stark differences across countries: among OECD countries with available data, there were reductions in expenditure per student on tertiary education in Canada, Colombia, Finland, France, Germany, Greece, Israel, Italy, Mexico, the Netherlands and Türkiye. In most of these countries, the decline was mainly the result of a rapid increase in the number of tertiary students. In contrast, expenditure per tertiary student increased by more than 4% in the Czech Republic, Estonia, Latvia, Poland and the Slovak Republic due to an increase in total expenditure and a reduction in the number of students (Table C1.3).

Provisional data on education expenditure in 2020 are available for a small number of countries. These figures are useful to take a first comparative look at the overall trends in expenditure per student during the first year of the COVID-19 health crisis (Box C1.3).

Definitions

Ancillary services are services provided by educational institutions that are peripheral to their main educational mission. The main component of ancillary services is student welfare. In primary, secondary and post-secondary non-tertiary education, student welfare services include meals, school health services, and transportation to and from school. At the tertiary level, they include residence halls (dormitories), dining halls and health care.

Core educational services include all expenditure that is directly related to instruction in educational institutions, including teachers' salaries, construction and maintenance of school buildings, teaching materials, books, and school administration.

Research and development includes research performed at universities and other tertiary educational institutions, regardless of whether the research is financed from general institutional funds or through separate grants or contracts from public or private sponsors.

Methodology

The annual average growth rate is calculated using the compound annual growth rate which shows the geometric progression ratio that provides a constant rate of return over the time period under analysis.

Expenditure per student on educational institutions at a particular level of education is calculated by dividing total expenditure on educational institutions at that level by the corresponding full-time equivalent enrolment. Only educational institutions and programmes for which both enrolment and expenditure data are available are taken into account. Expenditure in national currencies is converted into equivalent USD by dividing the national currency figure by the purchasing power parity (PPP) index for GDP. The PPP conversion factor is used because the market exchange rate is affected by many factors (interest rates, trade policies, expectations of economic growth, etc.) that have little to do with current relative domestic purchasing power in different OECD countries (see Annex 2 for further details).

Data on subnational regions on how much is spent per student are adjusted using national PPPs. Future work on the cost of living at subnational level would be required to fully adjust the expenditure per student used in this section.

Expenditure per student on educational institutions relative to GDP per capita is calculated by dividing expenditure per student on educational institutions by GDP per capita. In cases where the educational expenditure data and the GDP data pertain to different reference periods, the expenditure data are adjusted to the same reference period as the GDP data, using inflation rates for the OECD country in question (see Annex 2).

Full-time equivalent student: The ranking of OECD countries by annual expenditure on educational services per student is affected by differences in how countries define full-time, part-time and full-time equivalent enrolment. Some OECD countries count every participant at the tertiary level as a full-time student, while others determine students' intensity of participation by the credits that they obtain for the successful completion of specific course units during a specified reference period. OECD countries that can accurately account for part-time enrolment have higher apparent expenditure per full-time equivalent student on educational institutions than OECD countries that cannot differentiate between the different types of student attendance.

Vocational education and training expenditure: Expenditure on workplace training provided by private companies is only included when it is part of combined school- and work-based programmes, provided that the school-based component represents at least 10% of the study over the whole programme duration. Other types of employer-provided workplace training (e.g. entirely work-based training or employee training that takes place 95% at work) are excluded. Expenditure on VET programmes include the expenditure on training (e.g. salaries and other compensation of instructors and other personnel, as well as the cost of instructional materials and equipment). However, it excludes apprentices' wages and other compensations to students or apprentices.

For more information please see the OECD Handbook for Internationally Comparative Education Statistics 2019 (OECD, 2018[12]) and Annex 3 for country-specific notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

Source

Data refer to the financial year 2019 (unless otherwise specified) and are based on the UNESCO, OECD and Eurostat (UOE) data collection on education statistics administered by the OECD in 2021 (for details see Annex 3 at (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf). Data from Argentina, China, India, Indonesia, Saudi Arabia and South Africa are from the UNESCO Institute of Statistics (UIS).

The data on expenditure for 2012 to 2019 were updated based on a survey in 2021-22, and expenditure figures for 2012 to 2019 were adjusted to the methods and definitions used in the current UOE data collection. Provisional data on educational expenditure in 2020 are based on an ad-hoc data collection administered by the OECD and Eurostat in 2022.

Data on subnational regions are currently available for six countries: Belgium, Canada, Colombia, Germany, Lithuania and the United States. Subnational estimates were provided by countries using national data sources. Subnational data are based on a special survey administrated by the OECD in 2021.

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Indicator C1 tables

Tables Indicator C1. How much is spent per student on educational institutions?

Table C1.1	Total expenditure on educational institutions per full-time equivalent student (2019)
Table C1.2	Public and total expenditure on educational institutions per full-time equivalent student, by type of institution (2019)
Table C1.3	Average annual growth in total expenditure on educational institutions per full-time equivalent student (2012 to 2019)
Table C1.4	Total expenditure on educational institutions per full-time equivalent student for core educational services, ancillary services and R&D (2019)
WEB Table C1.5	*Total expenditure on educational institutions per full-time equivalent student relative to GDP per capita (2019)*
WEB Table C1.6	*Total expenditure on educational institutions per full-time equivalent student, by source of funds (2019)*
WEB Table C1.7	*Cumulative expenditure on educational institutions per full-time equivalent student between the age of 6 and 15 (2019)*

StatLink https://stat.link/kbzdco

Cut-off date for the data: 17 June 2022. Any updates on data can be found on line at: http://dx.doi.org/10.1787/eag-data-en. More breakdowns can also be found at: http://stats.oecd.org, *Education at a Glance Database*.

Table C1.1. Total expenditure on educational institutions per full-time equivalent student (2019)

In equivalent USD converted using PPPs for GDP, direct expenditure within educational institutions, by level of education

		Secondary							Tertiary					
			Upper secondary											
	Countries	Primary	Lower secondary	General programmes	Vocational programmes	All programmes	All secondary	Post-secondary non-tertiary	Primary, secondary and post-secondary non-tertiary	Short-cycle tertiary	Bachelor's, master's and doctoral	All tertiary	All tertiary (excluding R&D)	Primary to tertiary	Primary to tertiary (excluding R&D)
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
OECD	**Australia**	11 340	14 494	15 243	9 769	13 487	14 120	8 451	12 496	10 199	23 035	20 625	13 981	14 278	12 822
	Austria	13 299	16 594	14 513	19 111	17 248	16 883	5 164	15 375	19 534	21 653	21 329	15 533	17 167	15 423
	Belgium	11 720	15 005	14 648[d]	15 284[d]	15 007[d]	15 007[d]	x(3, 4, 5, 6)	13 567	14 328	21 316	21 082	13 760	15 024	13 605
	Canada [1, 2]	10 570[d]	x(1)	x(5)	x(5)	14 564	14 564	m	11 806	16 881	25 765	22 335	22 335	14 391	14 391
	Chile	6 018	6 509	5 208	8 362	5 749	5 997	a	6 008	5 412	12 058	10 253	9 872	7 239	7 128
	Colombia [2]	3 729	3 708	x(5)	x(5)	3 836	3 744	m	3 737	x(11)	x(11)	4 601	m	3 916	m
	Costa Rica	m	m	m	m	m	m	a	m	m	m	m	m	m	m
	Czech Republic	7 520	12 856	10 050	12 509	11 810	12 357	2 385	10 293	26 489	17 382	17 411	11 329	11 605	10 484
	Denmark	12 273	14 924	10 574	10 601	10 584	12 594	a	12 444	22 127	21 602	21 658	9 841	14 547	11 850
	Estonia	9 384	9 684	5 511	9 899	7 314	8 462	11 067	8 980	a	16 752	16 752	10 222	10 522	9 226
	Finland	10 576	16 869	8 937	9 440[d]	9 292[d]	11 894[d]	x(4, 5, 6)	11 356	a	18 129	18 129	9 635	12 732	11 006
	France	9 312	11 825	15 020	17 068	15 725	13 475	11 720	11 728	15 922	18 808	18 136	12 731	13 049	11 934
	Germany	10 622	13 096	14 462	18 648	16 624	14 390	12 938	13 227	7 459	19 636	19 608	11 148	14 632	12 770
	Greece [2]	7 279	7 179	5 604	7 923	6 296	6 728	m	6 995	a	4 192	4 192	2 538	5 992	5 399
	Hungary	8 262	7 293	8 773	7 914	8 373	7 827	10 051	8 051	2 726	12 492	12 107	9 269	8 738	8 257
	Iceland	14 304	16 502	12 397	19 216	14 004	15 091	19 130	14 734	16 610	16 610	16 610	m	15 107	m
	Ireland	8 687	10 634	x(5)	x(5)	10 145	10 383	39 283	9 942	x(11)	x(11)	16 997	11 541	11 158	10 215
	Israel	9 452	x(3, 4,5)	7 262[d]	17 629[d]	9 410[d]	9 410	721	9 369	5 893	16 127	12 683	9 008	9 972	9 303
	Italy	10 570	10 623	x(5)	x(5)	10 519[d]	10 558[d]	x(5, 6)	10 562	4 472	12 248	12 177	8 101	10 902	10 045
	Japan	9 379	11 083	x(5)	x(5)	11 878[d]	11 493[d]	x(5, 6, 9, 10, 11)	10 462	13 944[d]	20 944[d]	19 504[d]	m	12 474	m
	Korea	13 341	15 216	x(5)	x(5)	18 790	17 078	a	15 200	6 468	12 541	11 287	8 876	13 819	12 968
	Latvia	6 865	6 986	7 900	10 068	8 770	7 889	10 873	7 414	9 598	12 599	12 186	9 268	8 461	7 821
	Lithuania	7 095	7 079	6 896	9 672	7 622	7 227	9 800	7 270	a	11 039	11 039	7 851	8 135	7 403
	Luxembourg	22 203	25 141	24 232	24 474	24 381	24 736	3 238	23 516	6 602	58 665	51 978	30 063	25 433	23 957
	Mexico	2 977	2 546	3 177	3 837	3 406	2 890	a	2 933	x(11)	x(11)	7 341	6 272	3 577	3 421
	Netherlands	10 150	14 438	12 346	16 924	15 372	14 902	a	12 871	11 993	20 997	20 889	13 299	14 720	12 970
	New Zealand	7 578	8 521	10 918	8 716	10 289	9 336	6 721	8 449	10 881	19 988	18 641	14 742	10 230	9 548
	Norway	15 334	15 334	16 515	17 238	16 884	16 192	26 202	15 816	22 794	25 085	25 019	15 558	17 757	15 762
	Poland	8 949	8 856	7 610	9 224	8 519	8 689	5 695	8 733	12 463	12 912	12 912	8 978	9 611	8 784
	Portugal	8 992	11 347	x(5)	x(5)	10 991[d]	11 162[d]	x(5, 6)	10 182	5 850	12 135	11 858	8 838	10 535	9 898
	Slovak Republic	7 972	7 082	7 574	8 215	8 003	7 458	9 895	7 662	9 256	12 807	12 749	10 033	8 478	8 042
	Slovenia	9 562	12 037	10 261	8 197	8 853	10 160	a	9 867	4 360	16 815	15 267	11 873	10 829	10 224
	Spain	8 580	10 093	10 128	13 897[d]	11 334[d]	10 706[d]	x(4, 5, 6)	9 682	10 368	15 278	14 237	10 681	10 694	9 904
	Sweden	13 234	13 158	11 897	16 012	13 437	13 311	7 356	13 199	6 857	28 039	26 046	12 084	15 337	13 014
	Switzerland [3]	m	m	x(5)	x(5)	18 929[d]	m	x(5)	m	m	m	m	m	m	m
	Türkiye	4 400	4 330	5 095	7 062	5 894	5 110	a	4 884	x(11)	x(11)	9 455	7 641	5 743	5 402
	United Kingdom	11 936	12 329	14 296	12 125	13 657	13 041	a	12 516	28 667	29 766	29 688	23 884	15 453	14 460
	United States	13 780	14 798	x(5)	x(5)	16 311	15 538	16 021	14 671	x(11)	x(11)	35 347	31 254	19 382	18 450
	OECD average	9 923	11 417	10 609	12 465	11 711	11 400	m	10 722	12 154	18 949	17 559	12 486	11 990	11 087
	EU22 average	10 141	11 945	10 891	12 899	11 646	11 673	m	11 042	11 200	18 357	17 670	11 301	12 195	11 010
Partners	**Argentina**	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Brazil	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	China	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	G20 average	m	m	m	m	m	m	m	m	m	m	m	m	m	m

Note: See *Definitions and Methodology* sections for more information. Data and more breakdowns available at http://stats.oecd.org, *Education at a Glance Database*.
1. Primary education includes pre-primary programmes.
2. Post-secondary non-tertiary figures are treated as negligible.
3. Year of reference 2018.

Source: OECD/UIS/Eurostat (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/i94mw0

Table C1.2. Public and total expenditure on educational institutions per full-time equivalent student, by type of institution (2019)

In equivalent USD converted using PPPs for GDP, direct expenditure within educational institutions (final source of funds), by level of education

		Primary, secondary and post-secondary non-tertiary				Tertiary				Primary to tertiary			
		Public sources		Total expenditure (public and private sources)		Public sources		Total expenditure (public and private sources)		Public sources		Total expenditure (public and private sources)	
		Public institutions	Private institutions	Public institutions	Private institutions	Public institutions	Private institutions	Public institutions	Private institutions	Public institutions	Private institutions	Public institutions	Private institutions
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
OECD	Countries												
	Australia	11 530	8 165	12 150	13 099	8 366	282	24 297	3 383	10 685	7 227	15 394	11 943
	Austria	15 524	7 783	15 787	11 920	21 463	9 664	22 439	17 166	17 161	8 647	17 621	14 330
	Belgium	14 730	11 839	15 123	12 476	20 280	15 935	23 469	19 394	15 809	12 631	16 747	13 813
	Canada [1]	11 302 [d]	2 481 [d]	11 994 [d]	9 569 [d]	11 990	a	22 335	a	11 481 [d]	2 481 [d]	14 691 [d]	9 569 [d]
	Chile	6 693	3 755	6 693	5 595	9 715	2 891	16 406	9 073	7 143	3 449	8 139	6 828
	Colombia	3 588	445	3 593	4 306	2 923	0	7 876	1 216	3 493	272	4 204	3 105
	Costa Rica [2]	5 399	3 932	m	m	m	m	m	m	m	m	m	m
	Czech Republic	10 011	3 929	10 554	6 931	14 804	584	18 919	4 942	10 867	3 083	12 047	6 428
	Denmark	12 169	9 545	12 182	13 797	18 370	2 778	21 617	33 308	13 783	9 502	14 637	13 921
	Estonia	8 730	5 928	8 895	10 503	12 713	36	17 776	3 241	9 508	4 461	10 631	8 695
	Finland	11 361	10 480	11 427	10 711	24 189	8 766	26 927	9 514	12 937	9 511	13 331	10 035
	France	m	m	m	m	m	m	m	m	m	m	m	m
	Germany	m	m	m	m	m	m	m	m	m	m	m	m
	Greece	6 845	113	6 846	9 654	3 130	a	4 192	a	5 468	113	5 862	9 654
	Hungary	6 665	6 920	6 967	12 246	8 947	5 132	12 467	9 838	7 079	6 706	7 965	11 958
	Iceland	14 621	10 143	15 048	11 038	16 249	9 669	18 449	10 505	14 900	9 942	15 632	10 813
	Ireland	9 038	a	9 959	6 409	11 931	a	16 830	23 659	9 528	a	11 124	15 232
	Israel	8 066	9 579	8 253	13 924	2 998	7 384	3 107	14 583	7 844	8 513	8 027	14 244
	Italy	10 509	1 611	10 892	6 040	8 622	1 217	12 543	10 276	10 144	1 459	11 211	7 681
	Japan	m	m	m	m	m	m	m	m	m	m	m	m
	Korea	14 103	11 843	15 228	15 050	12 717	2 232	19 465	9 256	13 945	4 784	15 711	10 794
	Latvia	7 013	4 011	7 293	10 930	7 623	6 952	8 897	12 485	7 028	6 616	7 331	12 308
	Lithuania	6 974	4 462	7 202	8 867	8 033	1 568	11 535	6 457	7 206	3 257	8 150	7 864
	Luxembourg	24 917	8 094	24 917	16 243	47 310	a	51 978	a	26 693	8 094	27 063	16 243
	Mexico	2 693	17	2 803	3 956	6 380	0	6 911	8 117	3 100	11	3 256	5 414
	Netherlands	11 340	a	11 764	61 492	15 904	a	20 623	23 211	12 325	a	13 676	39 288
	New Zealand	7 759	3 778	8 850	5 205	10 764	3 082	19 663	9 358	8 290	3 667	10 759	5 870
	Norway	15 339	22 257	15 339	23 822	26 023	7 894	27 101	14 320	17 386	15 991	17 593	19 677
	Poland	7 816	5 673	8 572	10 294	13 065	2 233	15 301	5 977	8 756	4 222	9 777	8 473
	Portugal	10 450	1 322	10 786	6 719	8 731	109	12 117	10 734	10 101	1 016	11 057	7 731
	Slovak Republic	7 153	5 884	7 733	7 069	9 759	559	13 290	7 136	7 578	5 159	8 640	7 078
	Slovenia	8 963	5 276	9 916	7 574	13 695	4 813	16 274	6 412	9 747	5 038	10 970	6 977
	Spain	10 189	4 439	10 645	7 550	11 745	912	14 934	11 877	10 566	3 829	11 685	8 298
	Sweden	13 398	12 071	13 404	12 207	22 764	14 718	27 140	18 684	15 021	12 419	15 784	13 057
	Switzerland [3]	16 350	16 771	m	m	30 085	9 727	m	m	18 960	15 286	m	m
	Türkiye	3 914	223	4 030	16 035	7 716	1	8 602	13 935	4 572	147	4 821	15 316
	United Kingdom	11 261	9 921	11 932	13 015	a	7 035	a	29 688	11 261	9 122	11 932	17 630
	United States	14 664	1 539	14 902	12 411	15 392	5 747	31 094	45 850	14 801	3 552	17 946	28 413
	OECD average	10 316	6 492	10 657	12 020	14 073	4 549	17 955	13 453	11 034	5 944	11 922	12 081
	EU22 average	10 690	6 077	11 043	12 482	15 154	4 748	18 463	13 017	11 365	5 876	12 265	11 953
Partners	Argentina	4 192	1 667	m	m	x(9)	x(10)	m	m	5 583	1 798	m	m
	Brazil	3 873	a	m	m	15 365	a	m	m	4 647	a	m	m
	China	m	m	m	m	m	m	m	m	m	m	m	m
	India [2]	1 554	450	m	m	m	m	m	m	m	m	m	m
	Indonesia [3]	m	m	m	m	1 811	105	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa [3]	2 548	m	m	m	x(9)	m	m	m	2 946	m	m	m
	G20 average	7 910	m	m	m	m	m	m	m	m	m	m	m

Note: See *Definitions and Methodology* sections for more information. Data and more breakdowns available at http://stats.oecd.org, *Education at a Glance Database*.
1. Primary education includes pre-primary programmes. Post-secondary non-tertiary figures are treated as negligible.
2. Year of reference 2020.
3. Year of reference 2018.

Source: OECD/UIS/Eurostat (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

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Table C1.3. Average annual growth in total expenditure on educational institutions per full-time equivalent student (2012 to 2019)

GDP deflator 2015 = 100, 2015 constant prices and constant PPPs, by level of education

		Primary, secondary and post-secondary non-tertiary					Tertiary					Primary to tertiary				
		Total expenditure per student in constant prices and constant PPPs		Average annual growth between 2012 and 2019 (%)			Total expenditure per student in constant prices and constant PPPs		Average annual growth between 2012 and 2019 (%)			Total expenditure per student in constant prices and constant PPPs		Average annual growth between 2012 and 2019 (%)		
		2012	2019	Number of students	Total expenditure	Total expenditure per student	2012	2019	Number of students	Total expenditure	Total expenditure per student	2012	2019	Number of students	Total expenditure	Total expenditure per student
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
OECD	**Countries**															
	Australia	m	11 306	0.9	m	m	m	18 660	3.3	m	m	m	12 917	1.4	m	m
	Austria	13 504	13 940	0.0	0.5	0.5	17 826	19 339	0.3	1.4	1.2	14 790	15 565	0.1	0.8	0.7
	Belgium	11 924	12 131	0.5	0.7	0.2	17 779	18 850	1.2	2.1	0.8	13 013	13 433	0.6	1.1	0.5
	Canada [1]	10.470[d]	11.032[d]	0.8[d]	1.5[d]	0.8[d]	21 430	20 871	1.9	1.5	-0.4	13.006[d]	13.447[d]	1.0[d]	1.5[d]	0.5[d]
	Chile	4 562	5 486	0.0	2.7	2.7	8 406	9 362	2.0	3.6	1.6	5 570	6 610	0.6	3.1	2.5
	Colombia	2.257	3 237	-0.7	4.5	5.3	5 244	3 986	2.9	-1.0	-3.8	2.761	3 392	0.0	2.9	3.0
	Costa Rica	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Czech Republic	6 997	9 227	1.1	5.2	4.0	11 248	15 608	-4.0	0.6	4.8	8 040	10 404	0.0	3.7	3.8
	Denmark	m	11 236	-0.5	m	m	m	19 556	0.6	m	m	m	13 135	-0.3	m	m
	Estonia	6 851	8 118	0.9	3.4	2.5	8 902	15 143	-5.3	2.2	7.9	7 421	9 512	-0.6	3.0	3.6
	Finland	10 015	10 337	-0.1	0.4	0.5	19 129	16 502	0.5	-1.6	-2.1	11 812	11 590	0.0	-0.2	-0.3
	France	9 967	10 364	0.4	1.0	0.6	16 474	16 028	2.2	1.8	-0.4	11 185	11 532	0.8	1.2	0.4
	Germany	10 531	11 928	-0.7	1.2	1.8	18 351	17 683	2.8	2.2	-0.5	11 958	13 195	0.0	1.5	1.4
	Greece	6 498	6 480	-0.3	-0.4	0.0	4 103	3 884	1.3	0.5	-0.8	5 703	5 551	0.3	-0.1	-0.4
	Hungary	4 623	7 614	-1.6	5.6	7.4	9 388	11 450	-3.7	-0.9	2.9	5 534	8 264	-2.0	3.8	5.9
	Iceland	10 055	13 580	-0.2	4.2	4.4	11 858	15 309	-0.1	3.6	3.7	10 413	13 924	-0.2	4.1	4.2
	Ireland	m	9 517	1.5	m	m	m	16 270	1.7	m	m	m	10 681	1.5	m	m
	Israel	7 484	9 046	2.0	4.8	2.7	13 311	12 246	3.1	1.8	-1.2	8 482	9 629	2.2	4.0	1.8
	Italy	8 978	9 328	-0.1	0.4	0.5	11 126	10 754	0.4	0.0	-0.5	9 416	9 628	0.0	0.3	0.3
	Japan	9 972	10 444	-0.9	-0.2	0.7	19.452[d]	19.470[d]	0.1[d]	0.1[d]	0.0[d]	11.969	12 452	-0.7	-0.1	0.6
	Korea	m	14 754	-2.9	m	m	m	10 957	-1.5	m	m	m	13 414	-2.4	m	m
	Latvia	5 383	6 763	-0.1	3.2	3.3	7 825	11 116	-2.4	2.6	5.1	5 990	7 718	-0.7	3.0	3.7
	Lithuania	4 983	6 574	-2.7	1.3	4.0	9 300	9 983	-4.3	-3.3	1.0	6 066	7 357	-3.0	-0.3	2.8
	Luxembourg	22 054	22 253	1.4	1.6	0.1	m	49 186	m	5.0	m	m	24 067	m	2.0	m
	Mexico	2 908	2 760	0.4	-0.3	-0.7	8 426	6 907	5.9	2.9	-2.8	3 491	3 365	1.1	0.5	-0.5
	Netherlands	10 767	11 758	-0.6	0.7	1.3	19 535	19 083	2.2	1.9	-0.3	12 505	13 448	0.0	1.0	1.0
	New Zealand	7 168	7 455	0.5	1.1	0.6	14 232	16 449	-0.2	1.9	2.1	8 453	9 027	0.4	1.4	0.9
	Norway	13 208	14 546	0.5	1.9	1.4	19 608	23 010	2.6	5.0	2.3	14 409	16 331	0.9	2.7	1.8
	Poland	6 591	8 286	-0.6	2.7	3.3	8 010	12 251	-3.0	3.1	6.3	6 931	9 119	-1.1	2.8	4.0
	Portugal	8 950	9 376	-1.7	-1.1	0.7	10 653	10 919	-0.8	-0.5	0.4	9 291	9 701	-1.5	-0.9	0.6
	Slovak Republic	5 529	7 984	-0.7	4.6	5.4	9 536	13 286	-3.0	1.7	4.9	6 264	8 835	-1.1	3.9	5.0
	Slovenia	9 287	8 841	1.2	0.5	-0.7	10 523	13 680	-2.9	0.8	3.8	9 565	9 703	0.4	0.6	0.2
	Spain	8 385	8 848	0.9	1.7	0.8	12 724	13 010	1.8	2.2	0.3	9 301	9 772	1.1	1.8	0.7
	Sweden	11 263	12 319	2.2	3.6	1.3	23 721	24 308	1.1	1.4	0.4	13 475	14 313	2.0	2.9	0.9
	Switzerland	18 142	m	m	m	m	26 734	m	m	m	m	19 680	m	m	m	m
	Türkiye	3 762	5 085	1.7	6.1	4.4	12 124	9 845	5.9	2.8	-2.9	5 002	5 980	2.4	5.0	2.6
	United Kingdom	10 541	11 518	-0.3	1.0	1.3	25 502	27 320	2.9	3.9	1.0	12 665	14 220	0.2	1.8	1.7
	United States	12 281	13 678	0.3	1.9	1.6	28 818	32 954	-1.0	0.9	1.9	16 332	18 070	0.0	1.5	1.5
	OECD average	8 966	9 921	0.1	2.1	1.9	14 416	16 257	0.4	1.6	1.2	9 703	11 092	0.1	1.9	1.8
	OECD average for countries with data available for the reference years	9 330	10 126	-0.1	1.6	1.7	15 265	17 013	0.3	1.4	1.0	10 291	11 579	-0.1	1.6	1.7
	OECD average	9 154	10 147	0.0	1.8	1.9	12 955	16 268	-0.6	1.2	1.8	9 382	11 206	-0.2	1.6	1.8
Partners	Argentina	m	m	0.3	m	m	m	m	2.9	m	m	m	m	1.0	m	m
	Brazil	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	China	m	m	m	m	m	m	m	5.4	m	m	m	m	m	m	m
	India	m	m	-0.4	m	m	m	m	3.0	m	m	m	m	-0.1	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	4.6	m	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	G20 average	m	m	0.0	m	m	m	m	2.4	m	m	m	m	0.3	m	m

Note: See *Definitions and Methodology* sections for more information. Data and more breakdowns available at http://stats.oecd.org, *Education at a Glance Database*.

1. Primary education includes pre-primary programmes. Post-secondary non-tertiary figures are treated as negligible.

Source: OECD/UIS/Eurostat (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

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Table C1.4. Total expenditure on educational institutions per full-time equivalent student for core educational services, ancillary services and R&D (2019)

In equivalent USD converted using PPPs for GDP, direct expenditure within educational institutions, by level of education

		Primary, secondary and post-secondary non-tertiary			Tertiary					Primary to tertiary				
		Core services	Ancillary services	All services	Core services	Ancillary services	R&D	All services	All services excluding R&D	Core services	Ancillary services	R&D	All services	All services excluding R&D
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
OECD	Countries													
	Australia	12 348	148	12 496	13 158	823	6 644	20 625	13 981	12 526	296	1 456	14 278	12 822
	Austria	m	m	15 375	x(7)	x(7)	5 796	21 329	15 533	x(12)	x(12)	1 744	17 167	15 423
	Belgium	13 119	448	13 567	12 811	949	7 322	21 082	13 760	13 060	545	1 419	15 024	13 605
	Canada [1]	11.279[d]	527[d]	11.806[d]	x(7)	x(7)	x(7)	22 335	m	x(12)	x(12)	x(12)	14.391[d]	m
	Chile	5 578	430	6 008	9 567	304	382	10 253	9 872	6 734	394	111	7 239	7 128
	Colombia	3 600	137	3 737	x(7)	x(7)	m	4 601	m	x(12)	x(12)	m	3 916	m
	Costa Rica	m	m	m	m	m	m	m	m	m	m	m	m	m
	Czech Republic	9 682	611	10 293	11 230	99	6 082	17 411	11 329	9 967	517	1 121	11 605	10 484
	Denmark	12 259	185	12 444	9 839	2	11 817	21 658	9 841	11 707	143	2 697	14 547	11 850
	Estonia	8 881	99	8 980	9 289	933	6 530	16 752	10 222	8 962	264	1 296	10 522	9 226
	Finland	10 222	1 134	11 356	9 635	0	8 493	18 129	9 635	10 102	904	1 726	12 732	11 006
	France	10 299	1 429	11 728	11 889	842	5 405	18 136	12 731	10 627	1 308	1 114	13 049	11 934
	Germany	12.895[d]	332[d]	13.227[d]	10 166	982	8 460	19 608	11 148	12.294[d]	475[d]	1.862[d]	14.632[d]	12.770[d]
	Greece	x(3)	x(3)	6 995	x(7)	x(7)	1 655	4 192	2 538	x(12)	x(12)	592	5 992	5 399
	Hungary	7 334	717	8 051	8 643	626	2 839	12 107	9 269	7 556	702	481	8 738	8 257
	Iceland	x(3)	x(3)	14 734	x(7)	x(7)	x(7)	16 610	m	x(12)	x(12)	x(12)	15 107	m
	Ireland	x(3)	x(3)	9 942	10 885	656	5 455	16 997	11 541	x(12)	x(12)	943	11 158	10 215
	Israel	8 839	530	9 369	8 945	63	3 675	12 683	9 008	8 859	444	669	9 972	9 303
	Italy	10 120	443	10 562	7 654	447	4 076	12 177	8 101	9 601	444	858	10 902	10 045
	Japan	x(3.7)	x(3.7)	10 462	x(7)	x(7)	x(7)	19.504[d]	m	x(12)	x(12)	x(12)	12 474	m
	Korea	13 862	1 337	15 200	x(7)	x(7)	2 411	11 287	8 876	x(12)	x(12)	851	13 819	12 968
	Latvia	7 299	115	7 414	9 132	136	2 918	12 186	9 268	7 701	119	640	8 461	7 821
	Lithuania	6 937	333	7 270	6 775	1 076	3 188	11 039	7 851	6 900	503	732	8 135	7 403
	Luxembourg	22 463	1 053	23 516	29 013	1 050	21 916	51 978	30 063	22 904	1 053	1 476	25 433	23 957
	Mexico	x(3)	x(3)	2 933	x(7)	x(7)	1 069	7 341	6 272	x(12)	x(12)	156	3 577	3 421
	Netherlands	12 871	a	12 871	13 299	a	7 589	20 889	13 299	12 970	a	1 751	14 720	12 970
	New Zealand	x(3)	x(3)	8 449	x(7)	x(7)	3 899	18 641	14 742	x(12)	x(12)	681	10 230	9 548
	Norway	15 297	519	15 816	15 239	318	9 462	25 019	15 558	15 285	477	1 995	17 757	15 762
	Poland	8 479	253	8 733	8 747	231	3 934	12 912	8 978	8 536	249	827	9 611	8 784
	Portugal	9 532	650	10 182	8 432	405	3 020	11 858	8 838	9 300	599	637	10 535	9 898
	Slovak Republic	6 700	962	7 662	8 013	2 020	2 716	12 749	10 033	6 910	1 132	436	8 478	8 042
	Slovenia	x(3)	x(3)	9 867	x(7)	x(7)	3 393	15 267	11 873	x(12)	x(12)	605	10 829	10 224
	Spain	8 991	691	9 682	10 037	644	3 556	14 237	10 681	9 224	680	790	10 694	9 904
	Sweden	11 844	1 355	13 199	12 084	0	13 962	26 046	12 084	11 884	1 130	2 323	15 337	13 014
	Switzerland [2]	m	m	m	m	m	17 528	m	m	m	m	3 366	m	m
	Türkiye	4 678	206	4 884	7 479	162	1 814	9 455	7 641	5 204	198	341	5 743	5 402
	United Kingdom	11 178	1 337	12 516	22 565	1 319	5 804	29 688	23 884	13 126	1 334	993	15 453	14 460
	United States	13 572	1 099	14 671	26 809	4 445	4 093	35 347	31 254	16 588	1 861	933	19 382	18 450
	OECD average	10 363	610	10 973	11 975	713	6 198	18 885	12 687	10 741	631	1 147	12 519	11 372
	EU22 average	10 551	601	11 152	10 925	584	6 804	18 313	11 509	10 567	598	1 233	12 397	11 165
Partners	Argentina	m	m	m	m	m	m	m	m	m	m	m	m	m
	Brazil	m	m	m	m	m	m	m	m	m	m	m	m	m
	China	m	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m	m	m	m	m	m	m	m
	G20 average	m	m	m	m	m	m	m	m	m	m	m	m	m

Note: The average expenditure per student on all services and on all services excluding R&D only includes countries with a full breakdown by service and might differ from the values reported in Table C1.1. Some levels of education are included with others. Refer to "x" code in Table C1.1 for details. The average expenditure per student on all services and on all services excluding R&D only includes countries with a full breakdown by service and might differ from the values reported in Table C1.1. See *Definitions and Methodology* sections for more information. Data and more breakdowns available at http://stats.oecd.org, *Education at a Glance Database*.

1. Primary education includes pre-primary programmes. Post-secondary non-tertiary figures are treated as negligible.
2. Year of reference 2018.

Source: OECD/UIS/Eurostat (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

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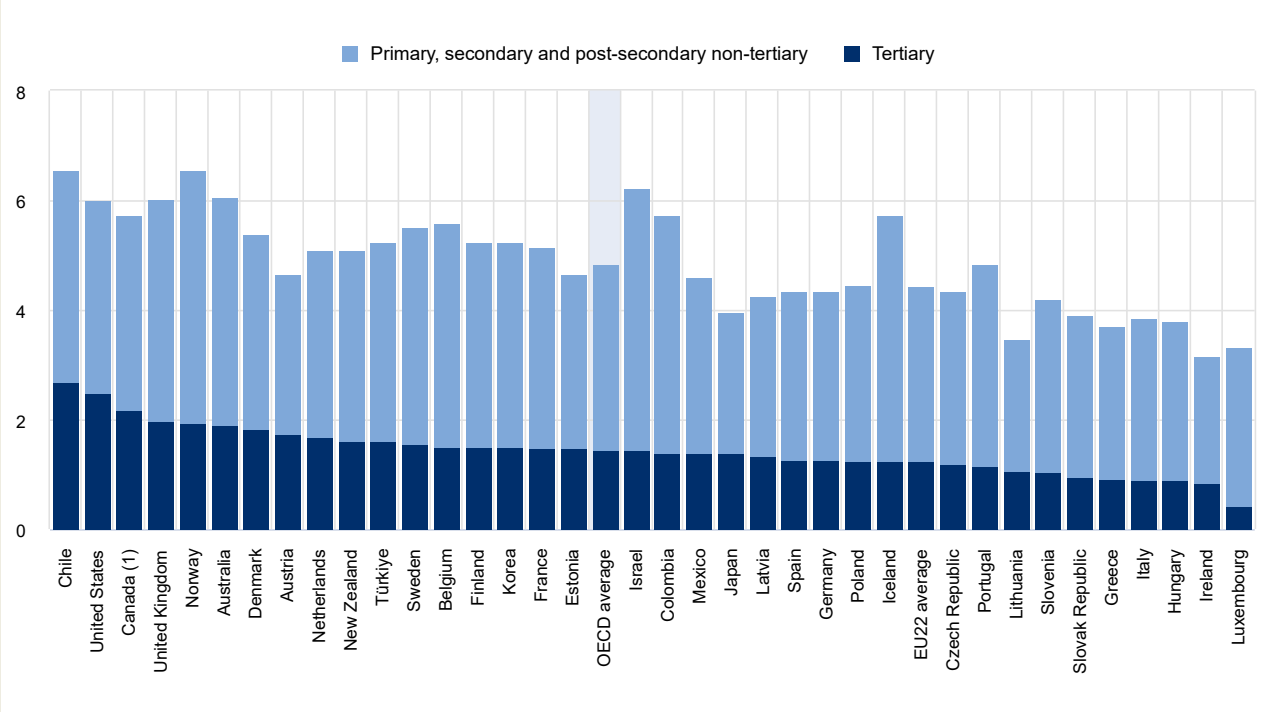
Indicator C2. What proportion of national output is spent on educational institutions?

Highlights

- Expenditure on tertiary education accounts for 1.5% of gross domestic product (GDP) on average across OECD countries or 30% of all education funding allocated to educational institutions.
- Education funding does not respond strongly to short-term fluctuations in GDP, but is influenced by long-term trends in GDP growth. Declines in GDP in 2008-09 only affected education budgets to a limited extent and only in some countries. The same might be expected for 2020, when most countries experienced a drop in GDP.
- Wealthier countries can afford to invest more resources on education than less wealthy ones. A USD 1 000 increase in GDP per capita is on average associated with a USD 200 increase in expenditure per student.

Figure C2.1. Total expenditure on educational institutions as a share of GDP (2019)

From all sources, by level of education, in per cent



1. Primary, secondary and post-secondary non-tertiary education includes pre-primary programmes.

Countries are ranked in descending order of total expenditure on tertiary educational institutions as a percentage of GDP.

Source: OECD/UIS/Eurostat (2022), Table C2.1. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

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Context

Countries invest in education to help foster economic growth, enhance productivity, contribute to personal and social development, and reduce social inequality, among other reasons. The level of expenditure on educational institutions is affected by the size of a country's school-age population, enrolment rates, the levels of teachers' salaries, and the organisation of education systems. At primary and lower secondary levels (which correspond broadly to the population aged 6 to 14), enrolment rates are close to 100% in most OECD countries. Changes in the number of students are therefore closely related to demographic changes. This is less the case in upper secondary and tertiary education, when part of the relevant population will have left the education system (see Indicator B1).

In order to account for these issues, this indicator measures the proportion of a nation's output that is invested in educational institutions. This measure demonstrates the priority given to educational institutions relative to a country's overall resources. National output is based on GDP, while expenditure on educational institutions includes spending by governments, enterprises, and individual students and their families. This indicator covers expenditure on schools, universities (including on research and development), and other public and private institutions involved in delivering or supporting educational services.

Public budgets are heavily scrutinised by governments and during economic downturns even core sectors like education can be subject to budget cuts. This indicator provides a point of reference, by showing how the volume of spending on educational institutions, relative to national GDP, has evolved over time in OECD countries. In deciding how much to allocate to educational institutions, governments must balance demands for increased spending in areas such as teachers' salaries and educational facilities with other areas of investment.

Other findings

- On average across OECD countries, expenditure on primary education amounts to 30% of the funding for educational institutions, while secondary education accounts for 39%. However, the share of expenditure on educational institutions is strongly influenced by the demographic composition in each country, as well as the duration of each level of education.
- In OECD countries, average expenditure per student on educational institutions from primary to tertiary levels is equivalent to 26% of GDP per capita. The relationship between GDP per capita and expenditure per student on educational institutions is clearly positive and reflects the fact that countries with low levels of expenditure per student may still be investing relatively large amounts relative to GDP per capita.

Analysis

Overall investment relative to GDP

All OECD countries devote a substantial share of national output to educational institutions. In 2019, OECD countries spent on average of 4.9% of their GDP on educational institutions from primary to tertiary levels (Table C2.1).

Expenditure on primary to tertiary educational institutions as a share of GDP varies from 6% or more in Australia, Chile, Israel, Norway, the United Kingdom and the United States to 3.5% or less in Ireland, Lithuania and Luxembourg (Figure C2.1 and Table C2.1). Many factors influence the relative expenditure of countries on this measure, including the number of students enrolled, the duration of studies and the effective allocation of funds. At the tertiary level, spending may be influenced by the criteria for accessing higher levels of education, the number of students enrolled across sectors and fields of study, and the scale of investment in research activities.

Expenditure on educational institutions by level of education

Funding for tertiary education accounts for 1.5% of GDP on average or 30% of all expenditure on educational institutions (Figure C2.1 and Figure C2.2). At this level, the various pathways and programmes available to students, the duration of programmes, the organisation of teaching, and research and development (R&D) activity all influence the level of expenditure. In 2019, among OECD countries, Austria, Canada, Chile, Japan, and the United States had the highest percentage of tertiary education spending (35% or more), with Canada, Chile, and the United States allocating the largest share of education funding to tertiary educational institutions. Some of these countries also have some of the highest levels of expenditure from private sources after public-to-private transfers have been accounted for (Table C2.3).

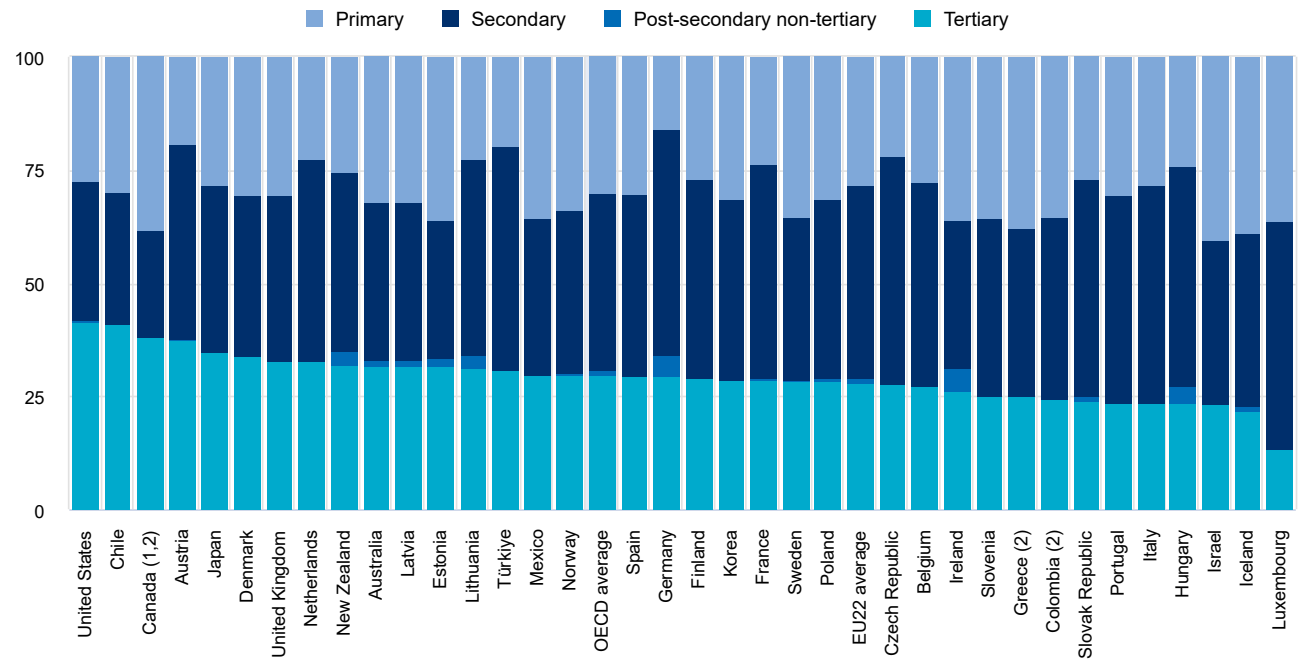
R&D spending in tertiary educational institutions can represent a substantial share of the total spending at this level and depends on the organisation of publicly funded research as well as the infrastructure and facilities available. Expenditure levels tend to be higher in Denmark, Sweden and other OECD countries where most publicly funded R&D is performed by tertiary educational institutions compared to those countries where R&D is mostly performed in other institutions. If R&D activities are excluded, expenditure on tertiary educational institutions as a share of GDP falls by 0.5 percentage points on average across OECD countries, although the difference is at least 0.7 percentage points in Denmark, Finland, Norway and Sweden (Table C2.1).

In all OECD countries with available data, the share of national resources devoted to educational institutions in non-tertiary education (primary, secondary and post-secondary non-tertiary levels) is much larger than the share devoted to tertiary education (Table C2.1). This is partly because tertiary education has lower enrolment rates (see Indicator B1) and require fewer years of studies. On average across OECD countries, 3.4% of GDP or 70% of total expenditure on educational institutions is directed to non-tertiary levels. The share of resources devoted to non-tertiary educational institutions ranges from 58% in the United States to 86% in Luxembourg (Figure C2.2).

On average across OECD countries, expenditure on primary education amounts to 30% of the funding for educational institutions, while secondary education accounts for 39%. The share of funding devoted to primary educational institutions ranges from less than 20% in Austria and Germany (due to the short duration of primary education) to 40% in Israel. At secondary level, it ranges from less than 25% in Canada to 50% in the Czech Republic, Germany and Luxembourg. These figures vary widely between countries and depend on the demographic structure of the population (see Indicator C1 for the analysis of expenditure per student by level of education) as well as on the relative size of primary, secondary and tertiary education (Figure C2.2). One factor that influences demographic structure is the fertility rate, with research showing that countries with relatively low fertility rates are more likely to spend a smaller share of their wealth on primary and lower secondary education (OECD, 2020[1]).

Figure C2.2. Total expenditure on educational institutions by level of education (2019)

Primary to tertiary education, after transfers, in per cent



1. Primary education includes pre-primary programmes.
2. Post-secondary non-tertiary figures are treated as negligible.
Countries are ranked in descending order of their share of total expenditure on tertiary educational institutions.
Source: OECD/UIS/Eurostat (2022), Table C2.1. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

StatLink https://stat.link/75hotw

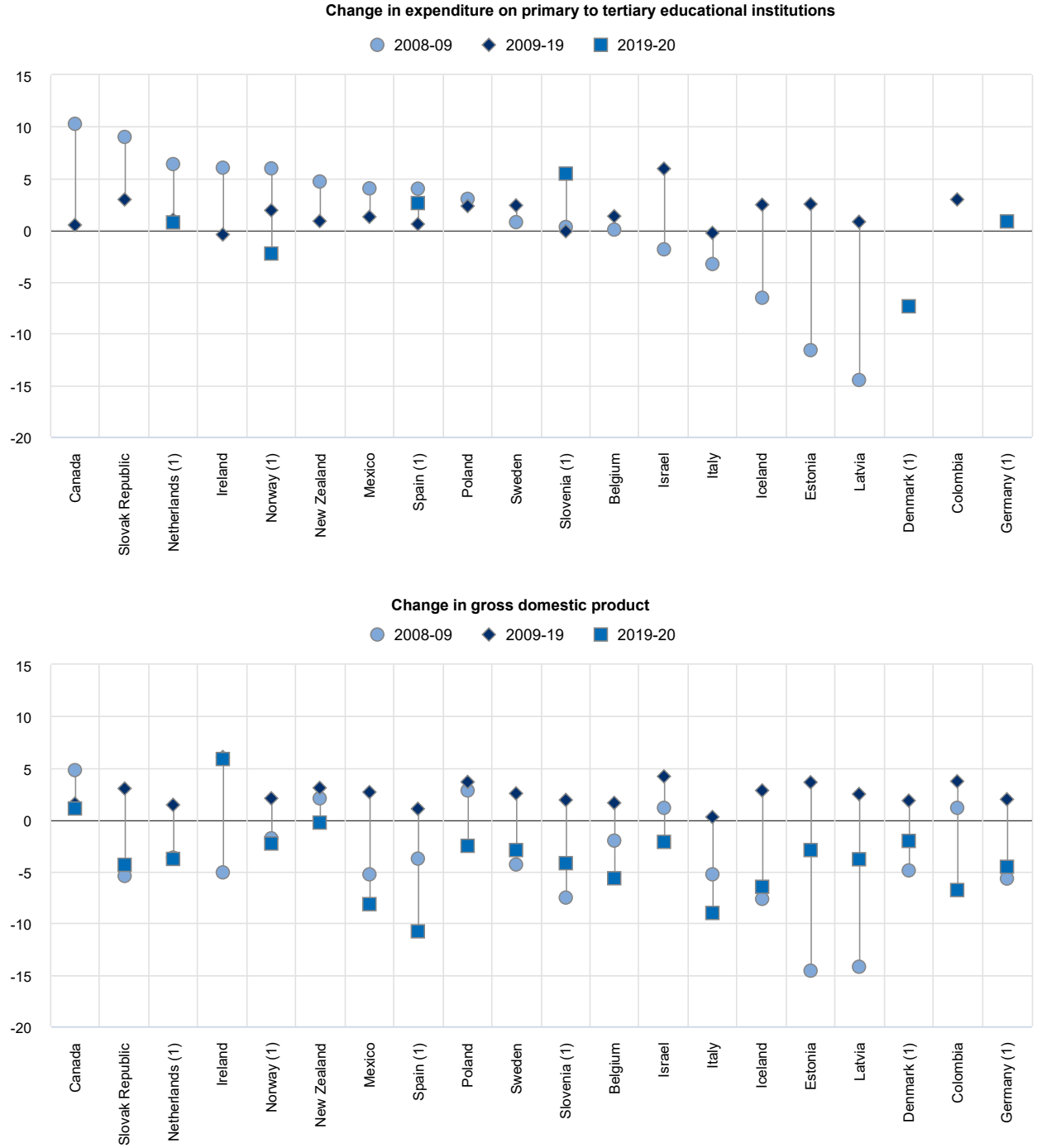
Changes in educational expenditure in the last decade

In 2019, the OECD average expenditure on primary to tertiary educational institutions as a share of GDP was only 0.2 percentage points lower than in 2008 and at the same level as that of 2015 (4.9%) (OECD, 2022[2]), although the variation over time differs across education levels and countries. This slight decline reflects the variation of this share at the primary, secondary and post-secondary non-tertiary levels, while it remained rather stable at the tertiary level. Between 2008 and 2009, education expenditure on primary to post-secondary non-tertiary educational institutions as a share of GDP increased by 0.3 percentage points, while it declined by 0.5 percentage points between 2009 and 2015 and remained constant in the period 2015-19. This is also due to the general trend that saw GDP values declining in the period 2008-09 and recovering in the years after, while education expenditure remained relatively stable. Over the whole period between 2008 and 2019, Chile, the Czech Republic and Israel experienced the largest increase, of 0.8 percentage points or more. While the increase in Chile's education expenditure as a share of GDP was mostly observed at the tertiary level, those in the Czech Republic and Israel occurred mostly at the non-tertiary levels. On the other hand, Ireland and New Zealand experienced the largest declines in the period considered, of more than 1 percentage point (OECD, 2022[2]).

On average, total expenditure from all sources on primary to tertiary educational institutions increased by 18% between 2008 and 2019, slightly below the increase in GDP (21%). Almost all countries with data available experienced an increase in the total expenditure on primary to tertiary institutions during this period, reaching 60% or more in Chile and Israel. Only Italy, Latvia and Slovenia experienced slight decreases in total expenditure on primary to tertiary institutions between 2008 and 2019 (Table C2.2). In a number of countries, GDP grew much faster than education expenditure, resulting in education expenditure falling as a share of GDP; this was particularly evident in New Zealand and Poland where the growth rate of GDP was at least 18 percentage points higher than the growth rate of total expenditure on primary to tertiary educational institutions.

Figure C2.3. Average annual change in total expenditure on primary to tertiary educational institutions and in GDP (2008 to 2020)

Compound annual growth rate, constant prices, in per cent



Please note that this chart compares the average annual growth rate over periods of different lengths. Overall, a positive growth rate has a higher impact over a longer time period.
1. Provisional data on the 2019-20 change in expenditure on educational institutions.
Countries are ranked in descending order of the percentage change in total expenditure on educational institutions over the period 2008 to 2009.
Source: OECD/UIS/Eurostat (2022), Table C2.4, available on line. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

StatLink https://stat.link/bd20mu

In most countries, the increase in education expenditure was rather similar across educational levels, but Chile, Estonia, Mexico and Norway experienced a much larger increase at tertiary level, at least 30 percentage points more, while Israel and Portugal witnessed a much larger increase in funding for primary to post-secondary non-tertiary institutions (Table C2.2).

Expenditure on primary to tertiary educational institutions and GDP growth rates seem to be correlated only to a limited extent in the short run. Education budgets did not grow steadily between 2008 and 2019 in most countries, but alternated between periods of increased and decreased funding. For example, in Estonia, education expenditure fell by more than 10% in the period 2008-09 but grew after that, while falls in Iceland and Latvia took place over the period 2008-2011. In comparison, GDP growth rates seem to be steadier over time with the exceptions of the 2008-09 financial crisis and the 2019-20 health crisis (Table C2.2 and Figure C2.3).

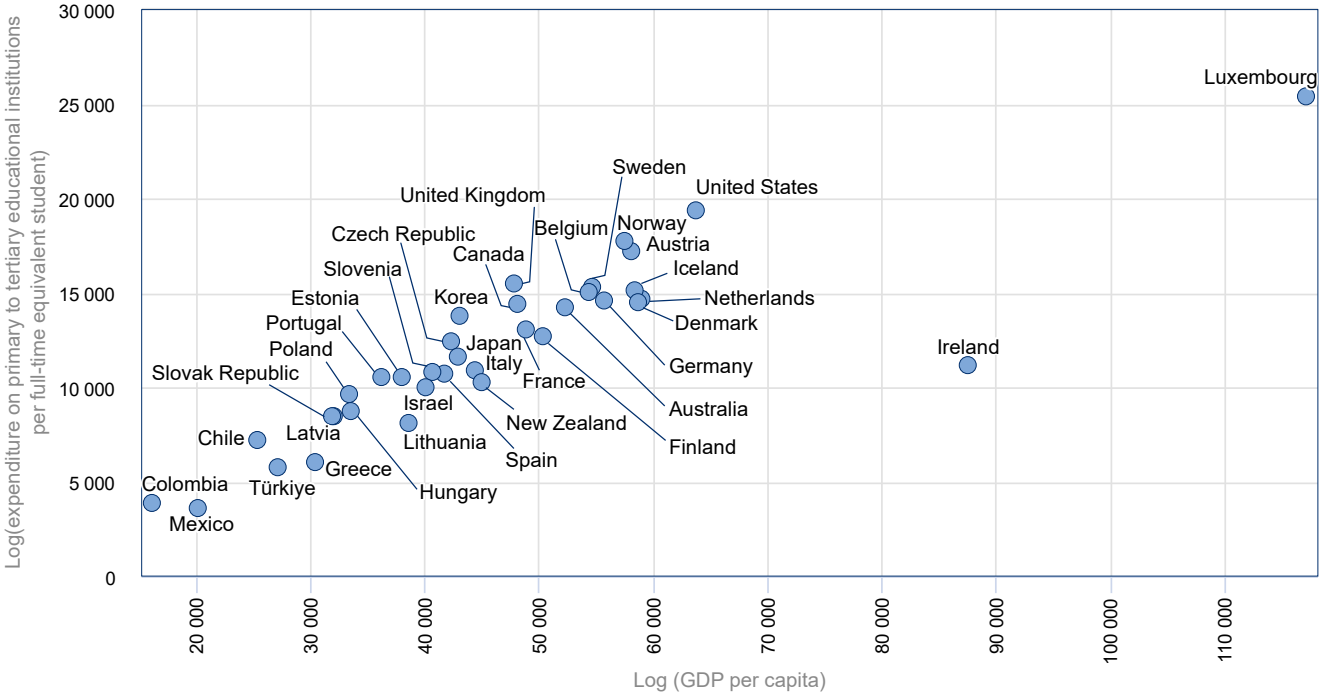
Education funding does not respond strongly to short-term fluctuations in GDP, but is more influenced by long-term trends in GDP growth. In 2009, GDP figures fell in the large majority of OECD countries, reaching troughs of 14-15% in Estonia and Latvia compared to the previous year and, similarly, most countries' GDP dropped in 2020 in the aftermath of the COVID-19 health crisis, by -9% in Italy and -11% in Spain. However, the 2009 falls in GDP only affected education budgets to a limited extent and only in some countries can the same might be expected for 2020, although education expenditure data are mostly provisional and only available for a limited number of countries (Figure C2.3).

Expenditure per student on educational institutions relative to GDP per capita

Expenditure on educational institutions per student relative to GDP per capita is a measure of spending that takes income levels into account. Since access to education in most OECD countries is universal (and usually compulsory) at lower levels of schooling, the amount spent per student as a share of GDP per capita can indicate whether the resources spent per student are proportionate to a country's ability to pay.

Figure C2.4. Total expenditure on primary to tertiary educational institutions per student relative to GDP per capita (2019)

In equivalent USD converted using PPPs, log scales



Source: OECD/UIS/Eurostat (2022), Table C1.1 and Annex 2 (Chapter C). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

StatLink https://stat.link/ocl6vn

In OECD countries, total expenditure per student on educational institutions from primary to tertiary levels averages 26% of annual GDP per capita. Countries with low levels of expenditure per student may still be investing relatively large amounts as a share of GDP per capita. For example, Portugal's expenditure per student for most educational levels and its GDP per capita are both below the OECD average, but it spends a more than proportionate share of its GDP per capita on education (above the OECD average) (Figure C2.4 and Indicator C1).

The relationship between GDP per capita and expenditure per student on educational institutions is clearly positive but difficult to interpret. In other words, wealthier countries can afford to invest more resources on education than less wealthy countries. According to this correlation, an increase in GDP per capita of USD 1 000 generates, on average, an increase in expenditure per student of USD 200. Although the relationship is generally positive at these levels, there are variations even between countries with similar levels of GDP per capita. Estonia and Lithuania, for example, both have a GDP per capita of around USD 38 000, but they allocate different shares of their output to education. Per student, Estonia spends 28% of its GDP per capita on educational institutions (above the OECD average of 26%), while Lithuania spends 21% (Figure C2.4 and Indicator C1).

Expenditure on educational institutions by source of funds

Public spending remains the main source of educational funding in OECD countries. On average, public expenditure on educational institutions from primary to tertiary educational levels (after transfers to the private sector) accounts for 4.1% of GDP. However, large differences are observed across countries with available data. In Ireland, Japan and Lithuania, public expenditure represents 3% or less of GDP, while Norway and South Africa devote over 6% of GDP to direct public expenditure on educational institutions (Table C2.3).

Public transfers to households (such as scholarships and loans to students for tuition and other fees) and subsidies to other private entities for education (such as to firms or labour organisations operating apprenticeship programmes) comprise about 0.2% of GDP on average across OECD countries from primary to tertiary level. They account for 0.3% of GDP or more in Australia, Chile, Korea and New Zealand and reach almost 0.6% in the United Kingdom, mainly driven by public transfers at tertiary level (Table C2.3).

With public budgets tightening, many educational systems are turning increasingly to the private sector for additional investment, particularly at tertiary level. After transfers, private expenditure on primary to tertiary educational institutions accounts for 0.8% of GDP on average. Countries nevertheless differ considerably in the contribution of private expenditure on educational institutions, ranging from 0.1% of GDP or less in Finland, Luxembourg and Norway to 2% or more in Australia, Chile and the United Kingdom (Table C2.3).

At non-tertiary levels of education, private investment is low and accounts for 0.3% of GDP on average across OECD countries after public-to-private transfers. However, it amounts to at least 0.7% of GDP in Australia, Chile, Colombia, and Türkiye, the countries with the largest relative shares of private funding of non-tertiary education. At the tertiary level, private investment plays a more prominent role, accounting for an average of 0.5% of GDP after transfers. In some countries, private sources contribute a larger share of GDP even before public transfers to households are taken into account. Countries such as Australia, Chile, Korea, Mexico and the United Kingdom devote 0.6% of GDP or more in private spending before transfers. After public transfers are taken into account, private investment in tertiary education represents 1.4% of GDP or more in Chile, the United Kingdom and the United States, the highest among OECD countries (Table C2.3).

Definitions

Expenditure on educational institutions refers to public, private and international expenditure on entities that provide instructional services to individuals or education-related services to individuals and other educational institutions (schools, universities, and other public and private institutions).

Initial public spending includes both direct public expenditure on educational institutions and transfers to the private sector and excludes transfers from the international sector. **Initial private spending** includes tuition fees and other student or household payments to educational institutions, minus the portion of such payments offset by public subsidies. **Initial international spending** includes both direct international expenditure for educational institutions (for example a research grant from a foreign corporation to a public university) and international transfers to governments.

Final public spending includes direct public purchases of educational resources and payments to educational institutions. **Final private spending** includes all direct expenditure on educational institutions (tuition fees and other private payments to educational institutions), whether partially covered by public subsidies or not. Private spending also includes expenditure by private companies on the work-based element of school- and work-based training of apprentices and students. **Final international spending** includes direct international payments to educational institutions such as research grants or other funds from international sources paid directly to educational institutions.

Public transfers to households and other private entities for educational institutions include scholarships and other financial aid to students, plus certain subsidies to other private entities. Therefore, they are composed of government transfers and certain other payments to households, insofar as these translate into payments to educational institutions for educational services (for example fellowships, financial aid or student loans for tuition). They also include government transfers and some other payments (mainly subsidies) to other private entities, including subsidies to firms or labour organisations that operate apprenticeship programmes and interest subsidies to private financial institutions that provide student loans, etc.

Direct public expenditure on educational institutions can take the form of either purchases by the government agency itself of educational resources to be used by educational institutions or payments by the government agency to educational institutions that have responsibility for purchasing educational resources.

Direct private (from households and other private entities) expenditure on educational institutions includes tuition fees and other private payments to educational institutions, whether partially covered by public subsidies or not.

Methodology

Expenditure on educational institutions as a percentage of GDP at a particular level of education is calculated by dividing total expenditure on educational institutions at that level by GDP. Expenditure and GDP values in national currency are converted into equivalent USD by dividing the national currency figure by the purchasing power parity (PPP) index for GDP. The PPP conversion factor is used because the market exchange rate is affected by many factors (interest rates, trade policies, expectations of economic growth, etc.) that have little to do with current relative domestic purchasing power in different OECD countries (see Annex 2 for further details).

Expenditure per student on educational institutions relative to GDP per capita is calculated by dividing expenditure per student on educational institutions (see indicator C1) by GDP per capita. In cases where the educational expenditure data and the GDP data pertain to different reference periods, the expenditure data are adjusted to the same reference period as the GDP data, using inflation rates for the OECD country in question (see Annex 2).

All entities that provide funds for education are classified as either governmental (public) sources, non-governmental (private) sources or international sources, such as international agencies and other foreign sources. The figures presented here group together public and international expenditure for display purposes. As the share of international expenditure is relatively small compared to other sources, its integration into public sources does not affect the analysis of the share of public spending.

Not all spending on instructional goods and services occurs within educational institutions. For example, families may purchase commercial textbooks and materials or seek private tutoring for their children outside educational institutions. At the tertiary level, students' living expenses and foregone earnings can also account for a significant proportion of the costs of education. All expenditure outside educational institutions, even if publicly subsidised, is excluded from this indicator. Public subsidies for educational expenditure outside institutions are discussed in Indicators C4 and C5.

A portion of educational institutions' budgets is related to ancillary services offered to students, including student welfare services (student meals, housing and transport). Part of the cost of these services is covered by fees collected from students and is included in the indicator.

Expenditure on educational institutions is calculated on a cash-accounting basis and, as such, represents a snapshot of expenditure in the reference year. Many countries operate a loan payment/repayment system at the tertiary level. While public loan payments are taken into account, loan repayments from private individuals are not, and so the private contribution to education costs may be under-represented.

For more information please see the *OECD Handbook for Internationally Comparative Education Statistics 2018* (OECD, 2018[3]) and Annex 3 for country-specific notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

Source

Data refer to the financial year 2019 (unless otherwise specified) and are based on the UNESCO, OECD and Eurostat (UOE) data collection on education statistics administered by the OECD in 2021 (for details see Annex 3 at https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf.Data from Argentina, China, India, Indonesia, Saudi Arabia and South Africa are from the UNESCO Institute of Statistics (UIS).

The data on expenditure for 2008 to 2020 were updated based on a survey in 2021-22, and expenditure figures for 2008 to 2020 were adjusted to the methods and definitions used in the current UOE data collection.

References

OECD (2022), *Educational Finance Indicators*, https://stats.oecd.org/ (accessed on 20 July 2022). [2]

OECD (2020), *OECD Labour Force Statistics 2020*, OECD Publishing, Paris, https://doi.org/10.1787/5842cc7f-en. [1]

OECD (2018), *OECD Handbook for Internationally Comparative Education Statistics 2018*, OECD Publishing, Paris, https://doi.org/10.1787/9789264304444-en. [3]

Indicator C2 tables

Tables Indicator C2. What proportion of national wealth is spent on educational institutions?

Table C2.1	Total expenditure on educational institutions as a percentage of GDP (2019)
Table C2.2	Index of change in total expenditure on educational institutions as a percentage of GDP (2008, 2009, 2011 and 2019)
Table C2.3	Total expenditure on educational institutions as a percentage of GDP, by source of funds (2019)
WEB Table C2.4	*Index of change in public expenditure on educational institutions as a percentage of GDP (2008, 2009, 2011 and 2019)*

StatLink https://stat.link/1d5fmn

Cut-off date for the data: 17 June 2022. Any updates on data can be found on line at: http://dx.doi.org/10.1787/eag-data-en. More breakdowns can also be found at: http://stats.oecd.org, *Education at a Glance Database*.

Table C2.1. Total expenditure on educational institutions as a percentage of GDP (2019)

Direct expenditure within educational institutions, by level of education

		Secondary							Tertiary					
			Upper secondary											
	Primary	Lower secondary	General programmes	Vocational programmes	All programmes	All secondary	Post-secondary non-tertiary	Primary, secondary and post-secondary non-tertiary	Short-cycle tertiary	Long-cycle tertiary	All tertiary	All tertiary (excluding R&D)	Primary to tertiary	Primary to tertiary (excluding R&D)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
OECD Countries														
Australia	1.9	1.4	0.6	0.2	0.8	2.1	0.1	4.1	0.2	1.7	1.9	1.3	6.1	5.5
Austria	0.9	1.1	0.3	0.6	0.9	2.0	0.0	2.9	0.2	1.5	1.7	1.3	4.7	4.2
Belgium	1.5	0.9	0.7[d]	0.9[d]	1.6[d]	2.5[d]	x(3, 4, 5, 6)	4.1	0.0	1.5	1.5	1.0	5.6	5.1
Canada [1, 2]	2.2[d]	x(1)	x(5)	x(5)	1.4	1.4	m	3.5[d]	0.6	1.6	2.2	m	5.7[d]	m
Chile	1.9	0.7	0.9	0.3	1.2	1.9	a	3.9	0.4	2.3	2.7	2.6	6.5	6.4
Colombia [2]	2.0	1.7	x(5)	x(5)	0.7	2.3	m	4.3	x(11)	x(11)	1.4	m	5.7	m
Costa Rica	m	m	m	m	m	m	a	m	m	m	m	m	m	m
Czech Republic	1.0	1.2	0.2	0.8	1.0	2.2	0.0	3.1	0.0	1.2	1.2	0.8	4.3	3.9
Denmark	1.6	1.1	0.5	0.3	0.9	1.9	a	3.6	0.2	1.6	1.8	0.8	5.4	4.4
Estonia	1.7	0.8	0.3	0.4	0.6	1.4	0.1	3.2	a	1.5	1.5	0.9	4.7	4.1
Finland	1.4	1.1	0.3	0.8[d]	1.2[d]	2.3[d]	x(4, 5, 6)	3.7	a	1.5	1.5	0.8	5.2	4.5
France	1.2	1.2	0.8	0.5	1.2	2.4	0.0	3.7	0.3	1.2	1.5	1.0	5.2	4.7
Germany	0.7	1.2	0.4	0.5	0.9	2.2	0.2	3.1	0.0	1.3	1.3	0.7	4.3	3.8
Greece [2]	1.4	0.7	0.4	0.2	0.7	1.4	m	2.8	a	0.9	0.9	0.6	3.7	3.4
Hungary	0.9	0.9	0.5	0.4	1.0	1.9	0.1	2.9	0.0	0.9	0.9	0.7	3.8	3.6
Iceland	2.2	1.0	0.8	0.4	1.1	2.2	0.1	4.5	0.0	1.2	1.3	m	5.7	5.7
Ireland	1.1	0.5	x(5)	x(5)	0.5	1.0	0.2	2.3	x(11)	x(11)	0.8	0.6	3.2	2.9
Israel	2.5	x(3, 4, 5)	1.4[d]	0.9[d]	2.3[d]	2.3	0.0	4.8	0.2	1.2	1.4	1.0	6.2	5.8
Italy	1.1	0.7	x(5)	x(5)	1.1[d]	1.8[d]	x(5, 6)	2.9	0.0	0.9	0.9	0.6	3.8	3.5
Japan [3]	1.1	0.7	x(5)	x(5)	0.8[d]	1.5[d]	x(5, 6, 9, 10, 11)	2.6	0.2[d]	1.2[d]	1.4[d]	m	4.0	m
Korea	1.7	0.9	x(5)	x(5)	1.2	2.1	a	3.7	0.2	1.3	1.5	1.2	5.3	4.9
Latvia	1.4	0.7	0.5	0.4	0.8	1.5	0.1	2.9	0.1	1.2	1.3	1.0	4.3	3.9
Lithuania	0.8	1.1	0.3	0.1	0.4	1.5	0.1	2.4	a	1.1	1.1	0.8	3.5	3.2
Luxembourg	1.2	0.8	0.3	0.5	0.9	1.7	0.0	2.9	0.0	0.5	0.5	0.3	3.3	3.1
Mexico	1.6	0.8	0.5	0.3	0.8	1.6	a	3.2	x(11)	x(11)	1.4	1.2	4.6	4.4
Netherlands	1.2	1.1	0.3	0.8	1.2	2.3	a	3.4	0.0	1.7	1.7	1.1	5.1	4.5
New Zealand	1.3	1.0	0.8	0.2	1.0	2.0	0.2	3.5	0.1	1.5	1.6	1.3	5.1	4.8
Norway	2.2	1.0	0.6	0.7	1.4	2.3	0.0	4.6	0.1	1.9	1.9	1.2	6.6	5.8
Poland	1.4	0.9	0.3	0.5	0.9	1.8	0.0	3.2	0.0	1.3	1.3	0.9	4.5	4.1
Portugal	1.5	1.1	x(5)	x(5)	1.1[d]	2.2[d]	x(5, 6)	3.7	0.0	1.1	1.1	0.9	4.8	4.5
Slovak Republic	1.1	1.1	0.3	0.6	0.8	1.9	0.0	3.0	0.0	0.9	0.9	0.7	3.9	3.7
Slovenia	1.5	0.8	0.3	0.5	0.8	1.7	a	3.1	0.0	1.0	1.1	0.8	4.2	4.0
Spain	1.3	0.8	0.6	0.4[d]	0.9[d]	1.7[d]	x(4, 5, 6)	3.1	0.2	1.1	1.3	1.0	4.3	4.0
Sweden	1.9	0.9	0.6	0.5	1.1	2.0	0.0	3.9	0.0	1.5	1.6	0.7	5.5	4.7
Switzerland [4]	m	m	x(5)	x(5)	1.2[d]	m	x(5)	m	m	m	m	m	m	m
Türkiye	1.0	1.1	0.8	0.7	1.5	2.6	a	3.6	x(11)	x(11)	1.6	1.3	5.2	4.9
United Kingdom	1.8	1.0	0.9	0.3	1.2	2.2	a	4.1	0.1	1.8	2.0	1.6	6.0	5.6
United States	1.6	0.9	1.0	a	1.0	1.9	0.0	3.5	x(11)	x(11)	2.5	2.2	6.0	5.7
OECD average	1.5	1.0	0.6	0.5	1.0	1.9	m	3.4	0.1	1.3	1.5	1.0	4.9	4.5
EU22 average	1.3	0.9	0.4	0.5	0.9	1.9	m	3.2	0.1	1.2	1.2	0.8	4.4	4.0
Partners Argentina	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Brazil	m	m	m	m	m	m	m	m	m	m	m	m	m	m
China	m	m	m	m	m	m	m	m	m	m	m	m	m	m
India	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Indonesia	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m	m	m
South Africa	m	m	m	m	m	m	m	m	m	m	m	m	m	m
G20 average	m	m	m	m	m	m	m	m	m	m	m	m	m	m

Note: Data on early childhood education and care and all ISCED levels combined are available on line (see StatLink below). See *Definitions and Methodology* sections for more information. Data and more breakdowns available at: http://stats.oecd.org, *Education at a Glance Database*.

1. Primary education includes pre-primary programmes.
2. Post-secondary non-tertiary figures are treated as negligible.
3. Data do not cover day care centres and integrated centres for early childhood education.
4. Year of reference 2018.

Source: OECD/UIS/Eurostat (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/abpk3s

Table C2.2. Change in total expenditure on educational institutions and change in GDP (2008, 2009, 2011 and 2019)

Final source of funds, index of change (2015=100, constant prices), by level of education

		Change in total expenditure on educational institutions												Change in gross domestic product			
		Primary, secondary and post-secondary non-tertiary				Tertiary				Primary to tertiary							
		2008	2009	2011	2019	2008	2009	2011	2019	2008	2009	2011	2019	2008	2009	2011	2019
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
OECD	Countries																
	Australia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Austria	m	m	m	101.7	m	m	m	108.8	m	m	m	104.2	96.8	93.2	97.7	108.5
	Belgium	96.7	94.9	97.7	104.1	81.7	87.0	90.6	111.3	92.8	92.9	95.9	106.0	93.0	91.1	95.3	107.0
	Canada [1]	89.2[d]	96.6[d]	94.9[d]	107.2[d]	99.3	112.3	108.7	108.7	93.0[d]	102.6[d]	100.1[d]	107.8[d]	86.5	90.6	88.4	105.6
	Chile	91.1	95.0	92.6	131.6	73.3	77.5	103.4	143.7	84.2	88.2	96.8	136.3	79.3	78.0	87.7	107.7
	Colombia	m	82.0	82.4	117.1	m	79.2	85.4	88.9	m	81.1	83.3	108.7	75.3	76.1	85.1	109.6
	Costa Rica	m	m	m	m	m	m	m	m	m	m	m	m	79.5	78.8	86.7	113.2
	Czech Republic	89.9	93.5	96.0	137.2	88.8	93.3	109.8	120.0	89.6	93.4	100.2	132.0	94.1	89.8	93.6	114.7
	Denmark	m	m	m	m	m	m	m	m	m	m	m	m	96.8	92.1	95.0	110.6
	Estonia	125.2	115.9	102.4	129.5	70.4	53.5	86.3	99.7	104.7	92.5	96.4	118.3	97.0	82.8	91.0	118.3
	Finland	95.1	95.0	100.0	102.0	98.9	101.8	110.6	96.3	96.2	97.1	103.2	100.3	105.0	96.5	102.2	108.6
	France	97.3	99.7	99.0	105.7	91.3	93.9	96.5	108.5	95.6	98.0	98.3	106.5	96.0	93.2	97.1	107.3
	Germany	96.2	m	101.5	108.6	82.8	m	94.1	111.4	92.3	m	99.3	109.4	93.6	88.3	95.6	107.2
	Greece	m	m	m	102.6	m	m	m	98.2	m	m	m	101.5	135.5	129.6	110.1	104.1
	Hungary	m	m	m	121.1	m	m	m	121.2	m	m	m	121.1	95.7	89.4	92.0	117.4
	Iceland	104.6	97.4	92.3	121.5	91.9	87.0	77.3	120.7	101.8	95.1	89.0	121.3	97.5	90.1	89.1	119.0
	Ireland	m	m	m	115.1	m	m	m	104.1	m	m	m	112.0	74.4	70.6	72.6	127.2
	Israel	67.6	66.0	81.3	125.7	81.6	81.0	98.5	118.0	71.0	69.7	85.5	123.8	77.3	78.1	87.2	117.7
	Italy	109.1	105.1	97.3	102.4	107.7	105.7	108.6	102.5	108.8	105.2	99.9	102.4	107.4	101.7	104.2	104.5
	Japan	m	m	100.2	99.5	m	m	100.6[d]	102.7[d]	m	m	100.3	100.6	101.0	98.4	98.7	105.3
	Korea	m	m	m	118.0	m	m	m	98.9	m	m	m	111.8	79.9	80.6	89.2	111.7
	Latvia	111.7	101.1	81.6	99.0	99.0	72.2	88.9	101.5	107.8	92.1	83.9	99.8	103.0	88.3	86.5	112.7
	Lithuania	m	m	107.6	113.6	85.8	82.4	106.4	83.5	m	m	107.1	102.1	95.9	81.7	88.0	116.3
	Luxembourg	90.8	97.5	101.2	113.8	m	m	m	101.6	m	m	m	111.9	89.6	86.7	90.9	112.1
	Mexico	81.6	83.3	90.5	89.8	73.9	81.2	79.7	104.9	79.6	82.8	87.6	93.9	86.8	82.2	m	106.9
	Netherlands	93.5	99.8	100.3	104.7	82.6	87.2	93.3	107.3	90.0	95.7	98.1	105.5	98.7	95.1	97.8	109.8
	New Zealand	96.8	101.2	97.8	107.1	84.4	88.7	89.0	103.5	92.8	97.1	95.0	105.9	83.4	85.1	88.2	115.2
	Norway	88.6	94.2	92.7	106.5	79.6	83.4	84.1	120.0	86.1	91.2	90.4	110.2	89.2	87.6	91.0	107.3
	Poland	89.9	92.1	94.3	118.0	87.2	91.0	85.4	109.3	89.1	91.7	91.6	115.4	81.0	83.3	90.6	119.3
	Portugal	87.7	99.5	92.6	104.4	106.1	104.0	105.9	99.4	92.2	100.6	95.9	103.1	105.8	102.5	102.5	111.5
	Slovak Republic	79.3	88.6	86.0	117.6	49.1	49.6	56.1	68.0	68.6	74.8	75.4	100.0	87.9	83.1	90.7	111.8
	Slovenia	115.3	113.9	112.0	112.1	112.5	118.6	122.7	119.0	114.6	115.0	114.6	113.7	104.5	96.7	98.8	116.6
	Spain	101.5	105.6	102.5	109.8	96.7	100.3	100.5	110.7	100.1	104.1	101.9	110.1	103.9	100.0	99.3	110.8
	Sweden	93.6	92.5	93.2	119.5	82.9	87.6	94.2	105.9	90.3	91.0	93.5	115.3	88.6	84.8	92.7	108.9
	Switzerland	m	m	m	m	m	m	m	m	m	m	m	m	90.4	88.5	93.2	108.0
	Türkiye	m	m	74.5	126.7	m	m	78.4	104.6	m	m	75.8	118.9	68.9	65.5	79.0	115.4
	United Kingdom	80.2	85.3	89.8	99.0	m	m	m	113.2	m	m	m	103.3	92.3	92.2	91.2	107.5
	United States	101.6	101.7	98.3	109.7	89.9	93.5	97.3	106.4	96.7	98.2	97.9	108.3	90.7	90.1	91.4	109.2
	OECD average	95.0	95.9	94.9	111.8	87.4	88.0	94.5	106.5	92.9	93.5	94.7	110.0	92.5	88.7	92.5	111.5
	EU22 average	98.3	99.6	98.0	111.5	89.0	88.5	96.9	104.2	95.5	96.0	97.2	109.1	97.5	91.8	94.7	112.0
Partners	Argentina	m	m	m	m	m	m	m	m	m	m	m	m	89.7	84.4	98.5	96.0
	Brazil	m	m	m	m	m	m	m	m	m	m	m	m	88.0	87.9	98.3	100.9
	China	m	m	m	m	m	m	m	m	m	m	m	m	56.4	61.7	74.8	129.4
	India	m	m	m	m	m	m	m	m	m	m	m	m	60.2	65.4	76.8	128.1
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m	68.6	71.8	81.1	121.9
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m	75.6	74.1	85.6	103.7
	South Africa	m	m	m	m	m	m	m	m	m	m	m	m	88.4	87.0	92.6	102.8
	G20 average	m	m	m	m	m	m	m	m	m	m	m	m	84.9	83.7	90.4	109.8

Note: See Definitions and Methodology sections for more information. Data and more breakdowns available at http://stats.oecd.org, Education at a Glance Database.
1. Primary education includes pre-primary programmes.
Source: OECD/UIS/Eurostat (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/rit1k2

Table C2.3. Total expenditure on educational institutions as a percentage of GDP, by source of funds (2019)

By level of education

		Primary, secondary and post-secondary non-tertiary						Tertiary						Primary to tertiary					
		Initial funds (before transfers between public and private sectors)			Final funds (after transfers between public and private sectors)			Initial funds (before transfers between public and private sectors)			Final funds (after transfers between public and private sectors)			Initial funds (before transfers between public and private sectors)			Final funds (after transfers between public and private sectors)		
		Public	Private	International	Public	Private	International	Public	Private	International	Public	Private	International	Public	Private	International	Public	Private	International
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
OECD	**Countries**																		
	Australia	3.5	0.7	0.0	3.4	0.7	0.0	1.0	0.9[d]	x(8)	0.6	1.3[d]	x(11)	4.5	1.6[d]	x(14)	4.1	2.0[d]	x(17)
	Austria	2.8	0.1	a	2.8	0.1	a	1.6	0.2	a	1.6	0.2	a	4.4	0.3	a	4.4	0.3	a
	Belgium	3.9	0.1	0.0	3.9	0.1	0.0	1.3	0.1	0.1	1.3	0.2	0.1	5.3	0.2	0.1	5.2	0.3	0.1
	Canada [1]	m	m	m	3.2[d]	0.4[d]	x(5)	m	m	m	1.2	1.0[d]	x(11)	m	m	m	4.4[d]	1.4[d]	x(17)
	Chile	3.1	0.7	a	3.1	0.7	a	1.3	1.4	a	1.0	1.6	a	4.4	2.1	a	4.2	2.4	a
	Colombia	3.4	0.9	0.0	3.4	0.9	0.0	m	m	0.0	0.5	0.9	0.0	m	m	0.0	3.9	1.9	0.0
	Costa Rica	m	m	m	4.4	m	m	m	m	m	1.4	m	m	m	m	m	5.9	m	m
	Czech Republic	2.9	0.2	0.0	2.9	0.2	0.0	0.9	0.2	0.1	0.9	0.2	0.1	3.8	0.4	0.1	3.8	0.4	0.1
	Denmark	3.4	0.2	0.0	3.4	0.2	0.0	1.6	0.2	0.1	1.6	0.2	0.1	4.9	0.4	0.1	4.9	0.4	0.1
	Estonia	2.9	0.1	0.2	3.1	0.1	0.0	0.9	0.2	0.4	1.0	0.2	0.2	3.8	0.4	0.5	4.1	0.4	0.2
	Finland	3.7	0.0	0.0	3.7	0.0	0.0	1.4	0.1	0.1	1.4	0.1	0.1	5.1	0.1	0.1	5.1	0.1	0.1
	France	3.4	0.3	0.0	3.3	0.3	0.0	1.2	0.3	0.0	1.1	0.3	0.0	4.6	0.5	0.0	4.5	0.7	0.0
	Germany	m	m	m	2.7	0.4	0.0	m	m	m	1.0	0.2	0.0	m	m	m	3.7	0.6	0.0
	Greece	m	m	0.0	2.6	0.2	0.0	0.7	0.1	0.1	0.7	0.1	0.1	m	m	0.2	3.3	0.3	0.1
	Hungary	m	m	0.0	2.4	0.5	0.0	m	m	0.0	0.6	0.3	0.0	m	m	0.0	3.1	0.7	0.0
	Iceland	4.3	0.1	0.0	4.3	0.1	0.0	1.1	0.1	0.0	1.1	0.1	0.0	5.5	0.2	0.0	5.5	0.2	0.0
	Ireland	2.1	0.2	0.0	2.1	0.2	0.0	0.7	0.0	0.0	0.6	0.2	0.0	2.9	0.3	0.0	2.7	0.4	0.0
	Israel	4.3	0.5	0.0	4.3	0.5	0.0	m	m	0.0	0.8	0.7	0.0	m	m	0.0	5.0	1.2	0.0
	Italy	2.8	0.2	0.0	2.8	0.2	0.0	0.7	0.2	0.0	0.6	0.3	0.0	3.4	0.4	0.0	3.3	0.5	0.0
	Japan	m	m	0.0	2.4	0.2	0.0	m	m	0.0[d]	0.5[d]	0.9[d]	0.0[d]	m	m	0.0	2.8	1.1	0.0
	Korea	3.4	0.3[d]	x(2)	3.4	0.4[d]	x(5)	0.8	0.7[d]	x(8)	0.6	0.9[d]	x(11)	4.2	1.0[d]	x(14)	4.0	1.3[d]	x(17)
	Latvia	m	m	0.1	2.7	0.2	0.0	m	m	0.3	0.8	0.5	0.1	m	m	0.4	3.5	0.6	0.1
	Lithuania	2.1	0.1	0.2	2.3	0.1	0.0	0.6	0.3	0.2	0.7	0.3	0.1	2.7	0.4	0.3	3.0	0.4	0.1
	Luxembourg	2.7	0.1	0.1	2.7	0.1	0.1	0.4	0.0	0.0	0.4	0.0	0.0	3.1	0.1	0.1	3.1	0.1	0.1
	Mexico	2.7	0.6	0.0	2.6	0.6	0.0	0.8	0.6[d]	x(8)	0.8	0.6	0.0	3.5	1.2	0.0	3.4	1.2	0.0
	Netherlands	m	m	0.0	3.0	0.5	0.0	m	m	0.1	1.1	0.5	0.1	m	m	0.1	4.1	0.9	0.1
	New Zealand	3.1	0.4	0.0	3.0	0.5	0.0	1.1	0.5	0.0	0.9	0.8	0.0	4.2	0.9	0.0	3.9	1.2	0.0
	Norway	4.7	-0.1	0.0	4.6	0.0	0.0	1.8	0.1	0.0	1.8	0.1	0.0	6.6	0.0	0.0	6.4	0.1	0.0
	Poland	2.7	0.3	0.2	2.8	0.3	0.1	1.1	0.1	0.0	1.0	0.2	0.0	3.8	0.5	0.2	3.8	0.6	0.1
	Portugal	3.3	0.4	0.0	3.3	0.4	0.0	0.7	0.4	0.1	0.7	0.4	0.1	4.0	0.7	0.1	4.0	0.7	0.1
	Slovak Republic	2.7	0.2	0.1	2.7	0.3	0.0	0.7	0.2	0.0	0.7	0.3	0.0	3.4	0.4	0.2	3.4	0.5	0.0
	Slovenia	2.8	0.3	0.1	2.8	0.3	0.0	0.8	0.1	0.1	0.9	0.1	0.1	3.6	0.4	0.2	3.7	0.4	0.1
	Spain	2.6	0.4	0.0	2.6	0.4	0.0	0.9	0.4	0.0	0.8	0.4	0.0	3.5	0.8	0.0	3.5	0.8	0.0
	Sweden	3.9	0.0	0.0	3.9	0.0	0.0	1.3	0.2	0.1	1.3	0.2	0.1	5.2	0.2	0.1	5.2	0.2	0.1
	Switzerland [2]	m	m	m	m	m	m	1.3	m	0.0	1.2	m	0.0	m	m	m	m	m	m
	Türkiye	2.7	0.9	0.0	2.7	0.9	0.0	1.1	0.5	0.0	1.1	0.5	0.0	3.8	1.4	0.0	3.8	1.4	0.0
	United Kingdom	3.5	0.6	0.0	3.4	0.6	0.0	1.0	0.9	0.1	0.5	1.4	0.1	4.5	1.5	0.1	3.9	2.1	0.1
	United States [3]	m	m	a	3.2	0.3	a	m	m	a	0.9	1.6	a	m	m	a	4.1	1.9	a
	OECD average	3.2	0.3	0.0	3.1	0.3	0.0	1.0	0.3	0.1	0.9	0.5	0.0	4.2	0.6	0.1	4.1	0.8	0.1
	EU22 average	3.0	0.2	0.0	2.9	0.2	0.0	1.0	0.2	0.1	0.9	0.2	0.1	4.0	0.4	0.1	3.9	0.5	0.1
Partners	Argentina	3.3	m	a	3.3	a	a	1.0	0.0	0.0	1.0	a	a	4.2	0.0	0.0	4.3	a	a
	Brazil	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	China	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	India [4]	m	m	m	2.9	m	m	m	m	m	1.5	m	m	m	m	m	4.5	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa [4]	m	m	m	5.3	m	m	m	m	m	0.9	m	m	m	m	m	6.2	m	m
	G20 average	m	m	m	3.2	m	m	m	m	m	0.9	m	m	m	m	m	4.0	m	m

Note: See *Definitions and Methodology* sections for more information. Data and more breakdowns available at http://stats.oecd.org, *Education at a Glance Database*.
1. Primary education includes pre-primary programmes.
2. Year of reference 2018.
3. Figures are for net student loans rather than gross, thereby underestimating public transfers.
4. Year of reference 2020.
Source: OECD/UIS/Eurostat (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/nxywc5

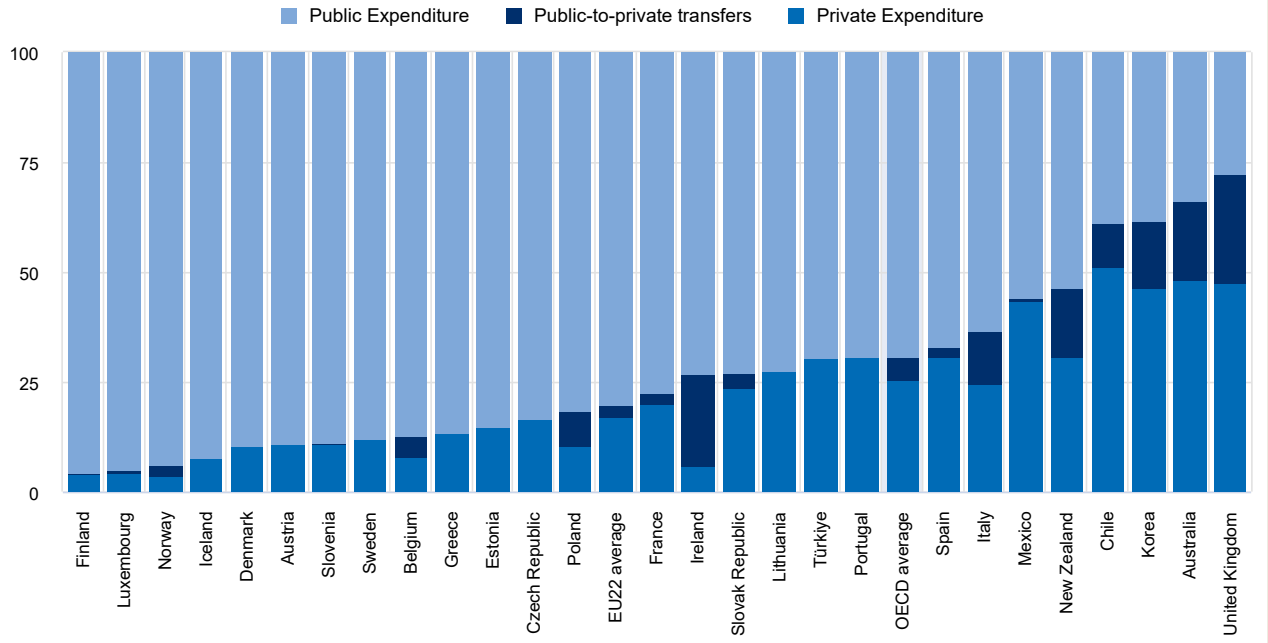
Indicator C3. How much public and private investment in educational institutions is there?

Highlights

- On average across OECD countries, public funds account for 83% of total spending on educational institutions. Private sources are more important at the tertiary level, where they make up 31% of all expenditure compared to just 10% at the non-tertiary levels (primary, secondary and post-secondary non-tertiary).
- The share of private spending on tertiary educational institutions depends largely on the tuition fees charged to students. More than half of total expenditure comes from private sources in Australia, Chile, Colombia, Japan, Korea, the United Kingdom and the United States, which are mostly countries with comparatively high tuition fees.
- Between 2011 and 2019, the average share of private spending on educational institutions remained stable on average across OECD countries. However, the variation over time differs widely across countries, especially at the tertiary level. The largest increases in the share of private expenditure in this period were observed in Poland and Spain at the non-tertiary levels (4 percentage points) and in Colombia at the tertiary levels (14 percentage points).

Figure C3.1. Distribution of public and private expenditure on tertiary educational institutions (2019)

In per cent



Note: International expenditure is aggregated with public expenditure for display purposes.
Countries are ranked in descending order of the share of expenditure on tertiary educational institutions from public sources.
Source: OECD/UIS/Eurostat (2022), Table C3.2. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

StatLink https://stat.link/q4s51u

Context

Today, more people than ever before are participating in a wide range of educational programmes offered by an increasing number of providers. In the current economic environment, many governments are finding it difficult to provide the necessary resources to support this increased demand for education through public funds alone. In addition, some policy makers argue that those who benefit the most from education – the individuals who receive it – should bear at least some of the costs. While public funding still represents a large part of countries' investment in education, private sources play an increasingly prominent role at some levels of education.

Public sources dominate much of the funding of primary and secondary education, which is compulsory in most countries. Across OECD countries, the balance between public and private financing varies the most at the pre-primary (see Indicator C2) and tertiary levels of education, where full or nearly full public funding is less common. At these levels, private funding comes mainly from households, raising concerns about equity in access to education. The debate is particularly intense over funding for tertiary education. Some stakeholders are concerned that the balance between public and private funding might discourage potential students from entering tertiary education. Others believe that countries should significantly increase public support such as student loans or grants to students, while others support efforts to increase the funding provided by private enterprises. By shifting the cost of education to a time when students typically start earning more, student loans help alleviate the burden of private spending and reduce the cost to taxpayers of direct government spending.

This indicator examines the proportion of public, private and international funding allocated to educational institutions at different levels of education. It also breaks down private funding into funding from households and other private entities. It sheds some light on the widely debated issue of how the financing of educational institutions should be shared between public and private entities, particularly at the tertiary level. Finally, it looks at the relative share of public transfers provided to private institutions and individual students and their families to meet the costs of tertiary education.

Other findings

- While the share of private spending on primary to post-secondary non-tertiary educational institutions is low across the OECD, it can reach high levels in countries such as Colombia and Türkiye (20%), with comparatively low per-capita income levels.
- Household spending makes up more than two-thirds of private expenditure on tertiary educational institutions on average across the OECD. However, in Denmark, Finland and Sweden, other sources of private expenditure make up 90% or more of all private spending.
- Public-to-private transfers account for 3% or less of education expenditure at the primary, secondary and post-secondary non-tertiary levels in all OECD countries. They are considered to be more important at the tertiary level, where they constitute 5% of all expenditure on average across the OECD and make up more than 15% of all expenditure in Australia, Ireland, Korea, New Zealand and the United Kingdom.

Analysis

Share of public and private expenditure on educational institutions

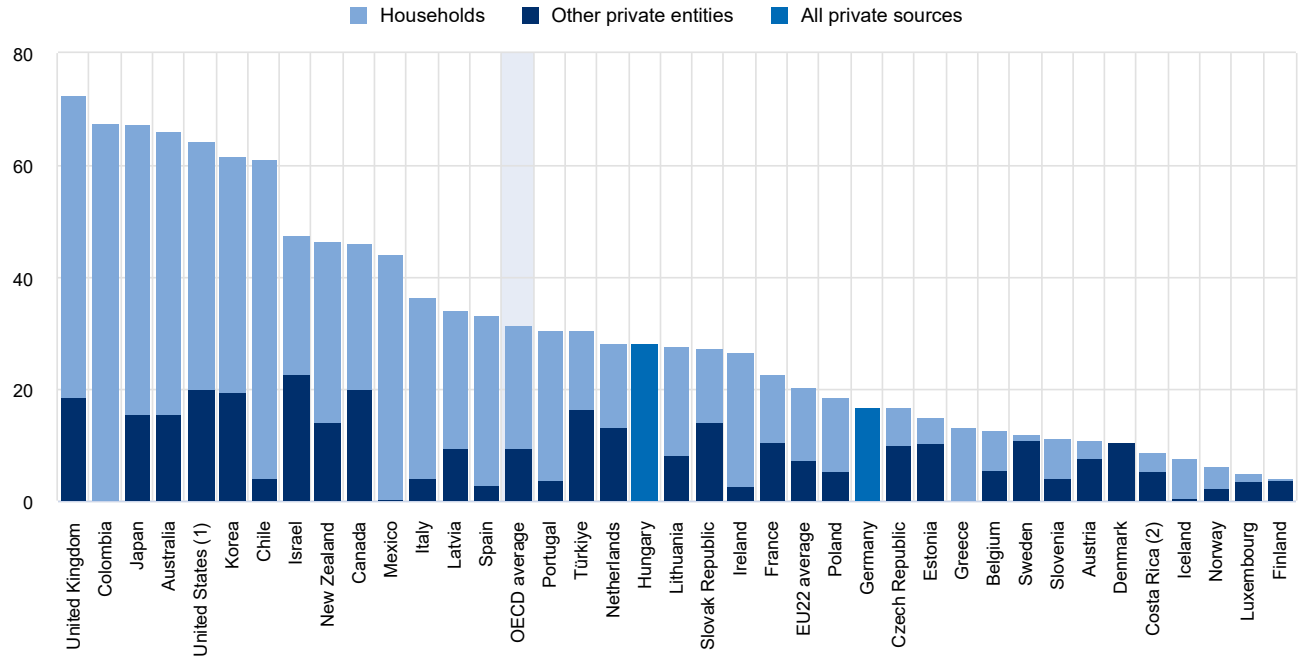
The largest share of funding on primary to tertiary educational institutions in OECD countries comes from public sources, although private funding at the tertiary level is substantial. Within this overall OECD average, however, the share of public, private and international funding varies widely across countries. In 2019, on average across OECD countries, 83% of the funding for primary to tertiary educational institutions came directly from public sources and 16% from private sources (Table C3.1). However, in Finland, Iceland, Luxembourg, Norway and Sweden, private sources contribute to less than 5% of expenditure on educational institutions. In contrast, they make up around one-third of educational expenditure in Australia, Chile, Colombia, the United Kingdom and the United States. International sources provide a very small share of total expenditure on educational institutions. On average across OECD countries, they account for 1% of total expenditure, reaching 5% in Estonia (Table C3.1).

Tertiary educational institutions

The high private returns to tertiary education have led a number of countries to ask individuals to make a greater financial contribution to their education at the tertiary level, primarily through tuition fees. Some countries have implemented public financial support mechanisms to ease the burden of these contributions on individuals, although this is not always the case (see Indicator C5). In all OECD countries, the proportion of private expenditure on education after public-to-private transfers is far higher at tertiary level than at lower levels of education. In 2019, on average across OECD countries, 31% of total expenditure on tertiary institutions was sourced from the private sector after transfers (Table C3.1 and Figure C3.2).

Figure C3.2. Proportion of expenditure on tertiary educational institutions from private sources, by source of funding (2019)

Before transfers, in per cent



1. Figures are for net student loans rather than gross, thereby underestimating public transfers.
2. Year of reference differ from 2019. Refer to the source table for more details.

Countries are ranked in descending order of the proportion of private expenditure on tertiary educational institutions.

Source: OECD/UIS/Eurostat (2022), Table C3.1. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

StatLink https://stat.link/xgvwr7

The share of private funding is strongly related to the level of tuition fees charged by tertiary institutions (see also Indicator C5). In countries where tuition fees tend to be low or negligible, such as Finland, Iceland, Luxembourg and Norway, the share of expenditure on tertiary institutions sourced through the private sector (including subsidised private payments such as tuition fee loans) is less than 10%. In contrast, over 60% of funding on tertiary institutions comes from private sources in Australia, Chile, Colombia, Japan, Korea, the United Kingdom and the United States, which also tend to charge higher tuition fees (Table C3.1).

On average across OECD countries, households account for 72% of private expenditure on tertiary institutions. While household expenditure is the biggest source of private funds in the majority of OECD countries, almost all private funding comes from other private entities in Denmark, Finland and Sweden (Figure C3.2). This private funding mainly consists of spending by businesses for research and development.

Non-tertiary educational institutions

Public funding dominates non-tertiary education in all countries. In 2019, private funding accounted for only 10% of expenditure at primary, secondary and post-secondary non-tertiary levels on average across OECD countries, although it exceeded 20% in Colombia and Türkiye. In most countries, the largest share of private expenditure at these levels comes from households and goes mainly towards tuition fees (Table C3.1 and Figure C3.3).

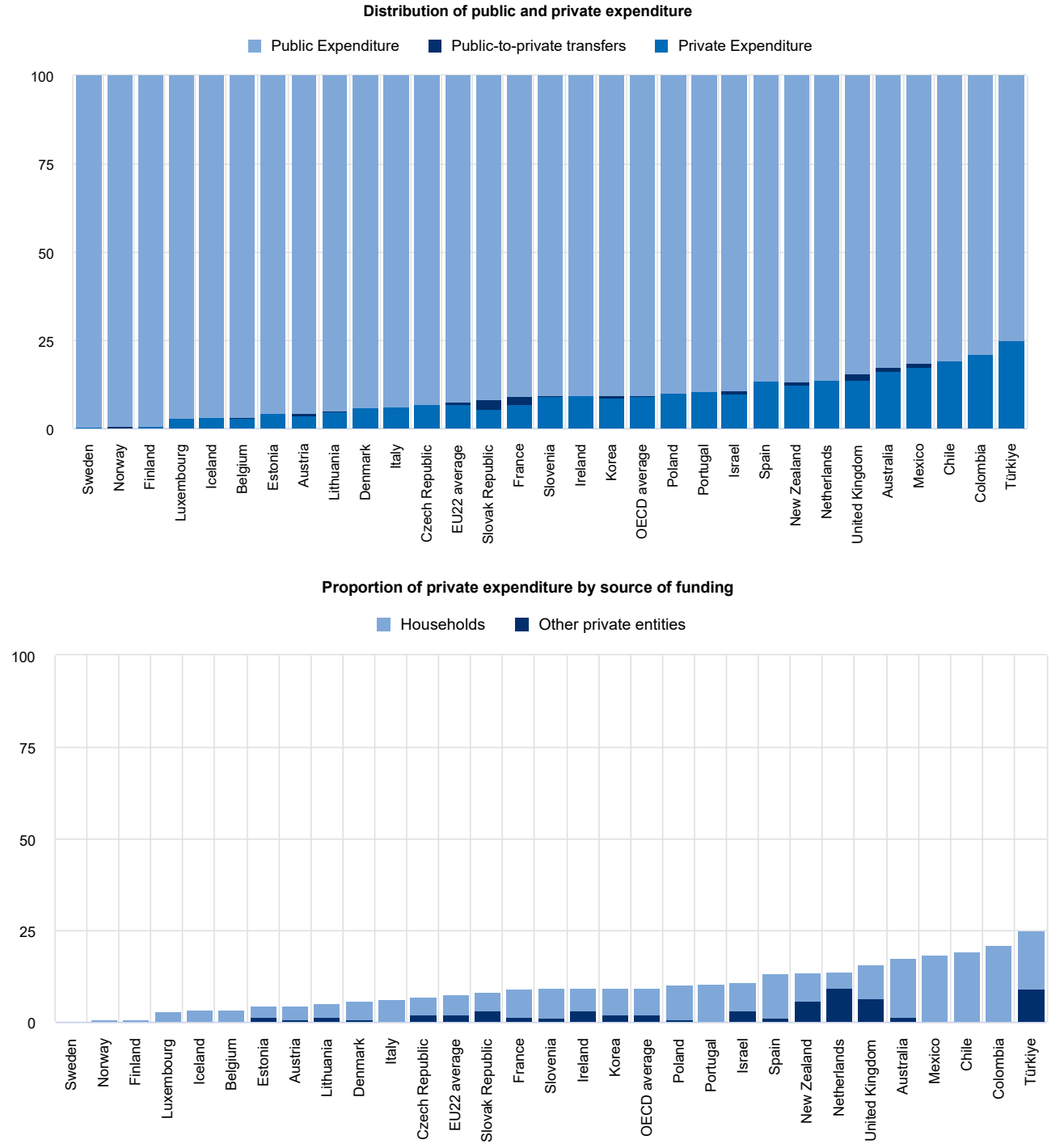
The share of private expenditure on educational institutions varies across countries and according to the level of education. At the primary level, 7% of expenditure on educational institutions comes from private sources on average across OECD countries. However, primary institutions are entirely publicly funded in Norway and Sweden, while 15% or more of funds come from private sources in Chile, Colombia Hungary, Mexico, Spain and Türkiye (OECD, 2022[1]).The share of private funding at lower secondary level is similar to the share at primary level, with around 9% of educational expenditure privately sourced on average across OECD countries. In around two-thirds of OECD countries for which data are available, private expenditure accounts for less than 10% of total expenditure at this level compared to more than 20% in Australia and Türkiye (OECD, 2022[1]).

Upper secondary education relies more on private funding compared to primary and lower secondary levels, reaching an average of 13% across OECD countries. Private sources contribute a similar share to the spending on vocational and general programmes. However, in Germany and the Netherlands, the share of private funding in vocational upper secondary education is at least 30 percentage points higher than in general education. In Germany, private companies have a long tradition of being involved in the provision of dual training (combined work- and school-based programmes), helping to improve the availability of skilled individuals needed in the labour market. On the other hand, in Chile and Türkiye, the share of private funding of general programmes exceeds that of vocational programmes by at least 20 percentage points. In several countries, the share of public funds currently devoted to vocational programmes is the result of various national policy developments on vocational education designed to improve the transition from school to work. For example, in the 1990s, France, the Netherlands, Norway and Spain introduced financial incentives to employers offering apprenticeships to secondary students. As a result, programmes combining work and learning were introduced more widely in a number of OECD countries (OECD, 1999[2]).

Most private expenditure on primary to post-secondary non-tertiary levels of education comes from households. Other private entities, such as businesses, provide only 2% of all education expenditure at these levels of education (corresponding to about 20% of all private education expenditure). The only notable exception in this respect is the Netherlands, where private spending by other private entities is 9% of all educational expenditure, which is more than twice as high as private spending by households. In Türkiye, other private entities also spend 9% of all educational expenditure, but the share of private household spending is even higher, at 16% (Figure C3.3).

Figure C3.3. Distribution of public and private expenditure on primary to post-secondary non-tertiary educational institutions (2019)

In per cent



Note: International expenditure is aggregated with public expenditure for display purposes.
Countries are ranked in descending order of the proportion of public expenditure.
Source: OECD/UIS/Eurostat (2022), Tables C3.1 and C3.2. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

StatLink https://stat.link/fvmlwh

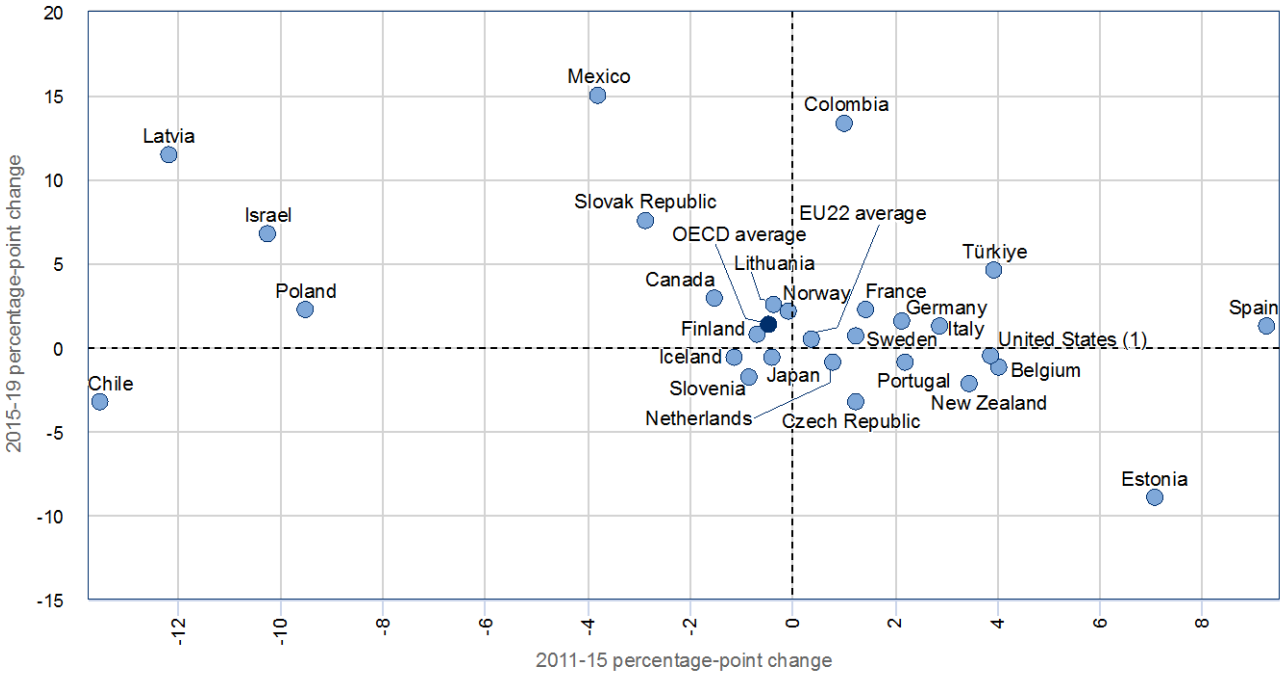
Trends in the share of public and private expenditure on educational institutions

The average shares of public and private expenditure on educational institutions have tended to be relatively stable over time across the OECD. While the importance of private funding is growing, it is at a slow pace (Table C3.3). Increases in the share of private funding were observed in almost half of OECD countries, with Spain showing the largest rise (6 percentage points, mostly between 2011 and 2015 and remaining stable between 2015 and 2019). In contrast, Chile experienced the largest decline in the share of private spending (9 percentage points) between 2011 and 2019, balanced by an equivalent increase from public sources (Table C3.3).

At the non-tertiary levels, Poland and Spain experienced the largest increases in the share of private expenditure, with a gain of 4 percentage points between 2011 and 2019. Data for 2011 are missing for Hungary, but between 2015 and 2019, the share of private spending increased by 9 percentage points. In other countries, there was a moderate decline in the share of private funds during the same period, notably in the Slovak Republic, where the share of private spending fell by 3 percentage points (Table C3.3). At the tertiary level, the increase was greatest in Colombia, where private funding rose from an already high 53% in 2011 to 68% in 2019. In contrast, Chile saw the largest fall in the share of private spending between 2015 and 2019, by 17 percentage points (Table C3.3). However, this might also be due to the statistical effect of the reclassification of some institutions from private to public.

Figure C3.4. Change in the relative share of private expenditure on tertiary educational institutions (2011 to 2019)

Final source of funds, by education level, in percentage points



1. Figures are for net student loans rather than gross, thereby underestimating public transfers.
Source: OECD/UIS/Eurostat (2022), Table C3.3. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

StatLink https://stat.link/taxo80

While the average share of private spending on tertiary educational institutions grew slightly over the whole period since 2011, individual countries experienced greater fluctuations within that time frame. Figure C3.4 shows the percentage point change in the share of private expenditure from 2011 to 2015 and from 2015 to 2019. Only in seven countries (those in the upper-

right quadrant of the figure), did the share increase in both periods. For example, in Spain, the share of private expenditure increased by 9 percentage points between 2011 and 2015, while the increase was only 1 percentage point between 2015 and 2019. In contrast, in 16 countries (in the top-left and bottom-right quadrants), the share of private expenditure increased in one of the two periods and decreased in the other. In Latvia, for example, the share of private expenditure dropped sharply between 2011 and 2015, but increased by nearly the same amount between 2015 and 2019. Finally, in four countries (in the bottom-left quadrant), the share fell in both periods, although at a low rate (Figure C3.4).

Public transfers to the private sector

A large share of government spending goes directly to educational institutions, but governments also transfer funds to educational institutions through various other allocation mechanisms (tuition subsidies or direct public funding of institutions based on student enrolments or credit hours) or by subsidising students, households and other private entities through scholarships, grants or loans. Transfers are classified as transfers to the private sector if the direct recipients are students, households or other private entities. Channelling funding for institutions through students increases competition among institutions for students, which may improve their effectiveness.

At the non-tertiary levels of education, the share of public-to-private transfers is very small, which is partly due to the overall low share of private expenditure at these levels. In 2019, on average across OECD countries, public-to-private transfers represented 1% of the total funds devoted to primary to post-secondary non-tertiary educational levels. The highest share was in the Slovak Republic, where it reached 3% of total educational expenditure (Table C3.2, available on line).

At the tertiary level, however, public transfers to the private sector play an important role in financing tertiary education in some countries (Figure C3.1). In countries where tertiary education is expanding, and particularly in those with high tuition fees, public-to-private transfers are often seen as a means of expanding access for lower income students. However, there is no single allocation model across OECD countries (OECD, 2017[3]). While private spending is largely covered by public transfers in some countries, such as Ireland, government and international support cover a relatively small share of private costs in others. Where public support to students is low, higher needs for private spending may deter some students from participating in tertiary education, even though higher future earnings would make it financially worthwhile to obtain a degree.

In 2019, on average across OECD countries, public-to-private transfers represented 5% of the total funds devoted to tertiary institutions. Countries with the highest transfers are also those that tend to have the highest tuition fees (see Indicator C5). Transfers exceeded 18% of total expenditure on tertiary institutions in Australia, Ireland and the United Kingdom, where annual tuition fees for a bachelor's programme exceed USD 5 000. In contrast, the share of public transfers was below 1% in countries with no or low fees, such as Austria, Denmark, Estonia, Finland and Sweden. However, in some countries, such as France, Lithuania, Mexico, Portugal, the Slovak Republic, Spain and Türkiye, public transfers to the private sector are low (4% or less) despite high levels of private spending (at least 20%) (Figure C3.1 and Table C3.2).

Provisional data on education expenditure in 2020 are available for a small number of countries. These figures are useful for taking a first comparative look at the overall trends in public and private education funding during the first year of the COVID-19 health crisis (Box C1.3).

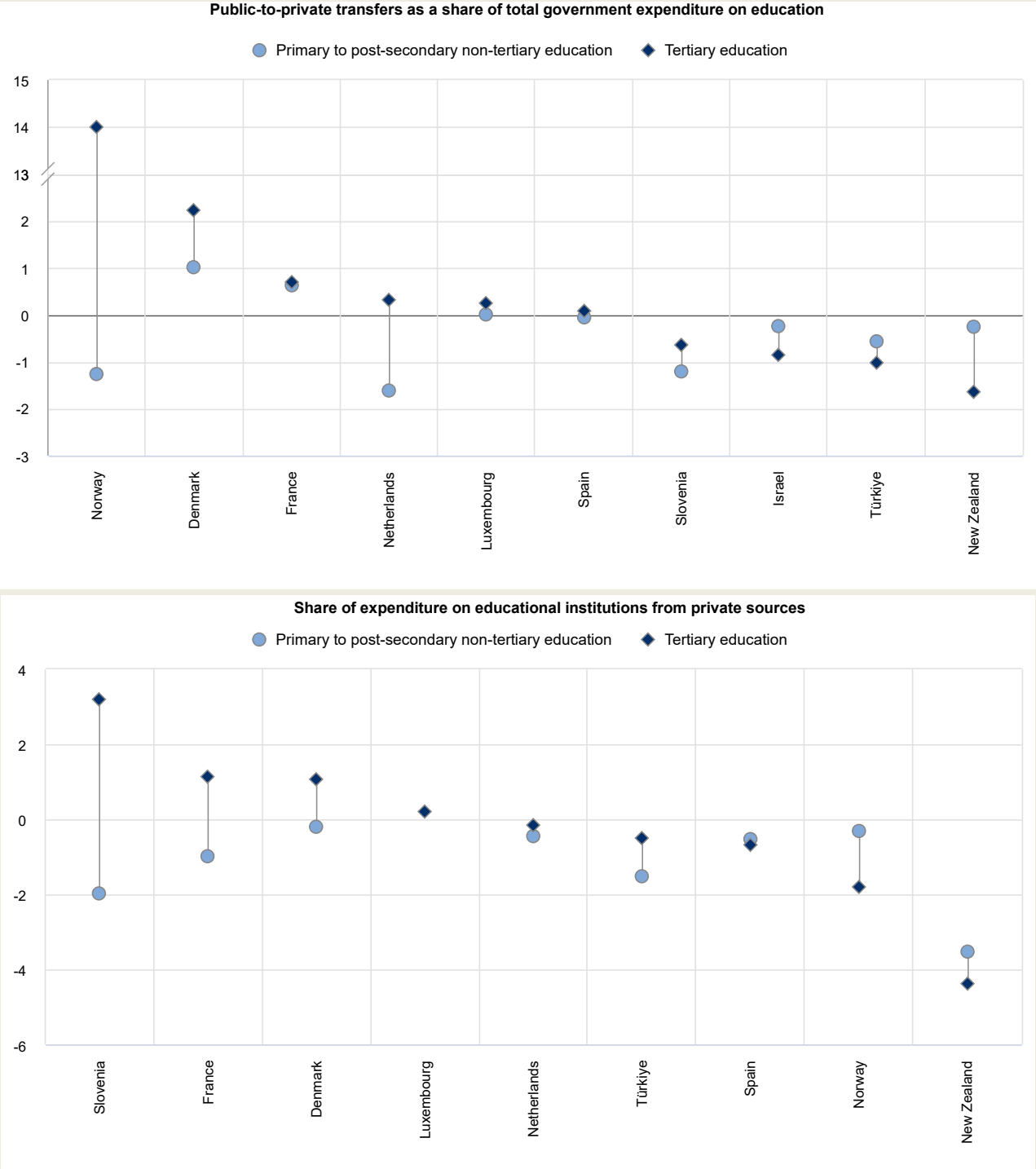
Box C3.1. Provisional data on changes in private funding for education in 2020

Policy responses to the pandemic are posing challenges to government education budgets (OECD, 2021[4]) (OECD, 2021[5]). Public education funding has not substantially changed in the last decade, but the crisis has brought increasing pressure to mobilise additional resources for education. Public funds will be needed to protect students and minimise the learning losses associated with COVID-19 (Al-Samarrai, Gangwar and Gala, 2020[6]). These funds may also need to compensate for potential drops in private education funding. However, lower government revenues are limiting the amount of additional public resources for education that can be mobilised (UNESCO and World Bank, 2021[7]).

Between 2019 and 2020, the share of private funding for primary to post-secondary non-tertiary educational institutions decreased in all countries with available data, declining by 2 percentage points or more in New Zealand and Slovenia. At the tertiary level, the picture was more mixed. Most countries recorded only small changes (whether increases or decreases) of 1 percentage point, but the share of private funding increased by 3 percentage points in Slovenia and decreased by 2 percentage points or more in New Zealand and Norway (Figure C1.6).

Figure C3.5. Provisional data on the change in public-to-private transfers and private expenditure on educational institutions between 2019 and 2020

In percentage points, constant prices



Countries are ranked in descending order of the 2019-20 variation at the tertiary level.

Source: OECD/Eurostat (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

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In some cases, the fall in the share of private funding for educational institutions in 2020 was associated with reduced government transfers to households and other private entities (Figure C1.6). This was the case in the Netherlands, Norway, Slovenia and Türkiye at primary to post-secondary non-tertiary levels and in New Zealand at both tertiary and non-tertiary levels. In contrast, in Denmark and France the share of private funding for tertiary educational institutions and of public-to-private transfers at this level both increased slightly between 2019 and 2020, while in Norway increased public transfers to the private sector at tertiary level did not lead to an increase in the share of private funding for tertiary educational institutions (Figure C1.6).

In 2020, public funding has helped make up for the drop in the relative share of private funding in all countries with available provisional data, except for Denmark, France and Slovenia, where the opposite was observed at the tertiary level. Increased public funding for education at both tertiary and non-tertiary levels for 2021 was reported by a large majority of countries, nine of which reported a significant increase. Increased public funding during the COVID-19 pandemic has mostly financed investment in infrastructure to improve sanitary conditions (e.g. installation of air filters in classrooms) and additional support for teachers and staff (masks, COVID-19 tests, health care, etc.) (see COVID-19 Chapter and Indicator C4).

Definitions

Initial public, private and international shares of educational expenditure are the percentages of total education spending originating in, or generated by, the public, private and international sectors before transfers have been taken into account. **Initial public spending** includes both direct public expenditure on educational institutions and transfers to the private sector, and excludes transfers from the international sector. **Initial private spending** includes tuition fees and other student or household payments to educational institutions, minus the portion of such payments offset by public subsidies. **Initial international spending** includes both direct international expenditure for educational institutions (for example, a research grant from a foreign corporation to a public university) and international transfers to governments.

Final public, private and international shares are the percentages of educational funds expended directly by public, private and international purchasers of educational services after the flow of transfers. **Final public spending** includes direct public purchases of educational resources and payments to educational institutions. **Final private spending** includes all direct expenditure on educational institutions (tuition fees and other private payments to educational institutions), whether partially covered by public subsidies or not. Private spending also includes expenditure by private companies on the work-based element of school- and work-based training of apprentices and students. **Final international spending** includes direct international payments to educational institutions such as research grants or other funds from international sources paid directly to educational institutions.

Households refer to students and their families.

Other private entities include private businesses and non-profit organisations (e.g. religious organisations, charitable organisations, business and labour associations, and other non-profit organisations).

Public subsidies include public and international transfers such as scholarships and other financial aid to students plus certain subsidies to other private entities.

Methodology

All entities that provide funds for education, either initially or as final payers, are classified as either government (public) sources, non-government (private) sources, or international sources such as international agencies and other foreign sources. The figures presented here group together public and international expenditures for display purposes. As the share of international expenditure is relatively small compared to other sources, its integration into public sources does not affect the analysis of the share of public spending.

Not all spending on instructional goods and services occurs within educational institutions. For example, families may purchase commercial textbooks and materials or seek private tutoring for their children outside educational institutions. At the tertiary level, students' living expenses and foregone earnings can also account for a significant proportion of the costs of

education. All expenditure outside educational institutions, even if publicly subsidised, are excluded from this indicator. Public subsidies for educational expenditure outside institutions are discussed in Indicators C4 and C5.

A portion of educational institutions' budgets is related to ancillary services offered to students, including student welfare services (student meals, housing and transport). Part of the cost of these services is covered by fees collected from students and is included in the indicator.

Expenditure on educational institutions is calculated on a cash-accounting basis and, as such, represents a snapshot of expenditure in the reference year. Many countries operate a loan payment/repayment system at the tertiary level. While public loan payments are taken into account, loan repayments from private individuals are not, and so the private contribution to education costs may be under-represented.

Student loans provided by private financial institutions (rather than directly by a government) are counted as private expenditure, although any interest rate subsidies or government payments on account of loan defaults are captured as public funding.

For more information, please see the *OECD Handbook for Internationally Comparative Education Statistics 2018* (OECD, 2018[8]) and Annex 3 for country-specific notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

Source

Data refer to the financial year 2019 (unless otherwise specified) and are based on the UNESCO, OECD and Eurostat (UOE) data collection on education statistics administered by the OECD in 2021 (for details see Annex 3 at https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf). Data from Argentina, the People's Republic of China, India, Indonesia, Saudi Arabia and South Africa are from the UNESCO Institute of Statistics (UIS).

The data on expenditure for 2011 to 2019 were updated based on a survey in 2021-22, and expenditure figures for 2011 to 2019 were adjusted to the methods and definitions used in the current UOE data collection. Provisional data on educational expenditure in 2020 are based on an ad-hoc data collection administered by the OECD and Eurostat in 2022.

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Indicator C3 tables

Tables Indicator C3. How much public and private investment in educational institutions is there?

Table C3.1	Relative share of public, private and international expenditure on educational institutions, by final source of funds (2019)
Table C3.2	Relative share of public, private and international expenditure on educational institutions, by source of funds and public-to-private transfers (2019)
Table C3.3	Trends in the share of public, private and international expenditure on educational institutions (2011, 2015 and 2019)

StatLink https://stat.link/15q7iy

Cut-off date for the data: 17 June 2022. Any updates on data can be found on line at: http://dx.doi.org/10.1787/eag-data-en. More breakdowns can also be found at http://stats.oecd.org, *Education at a Glance Database*.

Table C3.1. Relative share of public, private and international expenditure on educational institutions, by final source of funds (2019)

After transfers between public and private sectors, by level of education

		Primary, secondary and post-secondary non-tertiary					Tertiary					Primary to tertiary				
			Private sources					Private sources					Private sources			
		Public sources	Household expenditure	Expenditure by other private entities	All private sources	International sources	Public sources	Household expenditure	Expenditure by other private entities	All private sources	International sources	Public sources	Household expenditure	Expenditure by other private entities	All private sources	International sources
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
OECD	**Countries**															
	Australia	82	16	2	18	0	34	51	15[d]	66[d]	x(8, 9)	67	27	6[d]	33[d]	x(13, 14)
	Austria	96	4	1	4	a	89	3	8	11	a	93	4	3	7	a
	Belgium	96	3	0	3	1	84	7	6	13	3	93	4	2	6	1
	Canada [1]	90[d]	4[d]	6[d]	10[d]	x(3, 4)	54	26	20[d]	46[d]	x(8, 9)	76[d]	13[d]	11[d]	24[d]	x(13, 14)
	Chile	81	19	0	19	a	39	57	4	61	a	64	35	2	36	a
	Colombia	79	21	0	21	0	32	68	0	68	0	68	32	0	32	0
	Costa Rica [2]	m	m	m	m	m	91	4	5	9	0	m	m	m	m	m
	Czech Republic	93	5	2	7	0	76	7	10	17	7	88	5	4	10	2
	Denmark	94	5	1	6	0	85	0	10	11	5	91	3	4	7	2
	Estonia	96	3	1	4	0	71	5	10	15	15	88	3	4	8	5
	Finland	99	1	0	1	0	90	0	4	4	5	97	1	1	2	2
	France	91	8	1	9	0	75	12	11	23	2	86	9	4	13	1
	Germany	88	x(4)	x(4)	12	0	81	x(9)	x(9)	17	2	86	x(14)	x(14)	13	1
	Greece	93	7	0	7	0	75	13	a	13	12	88	9	0	9	3
	Hungary	83	x(4)	x(4)	17	0	70	x(9)	x(9)	28	2	80	x(14)	x(14)	19	0
	Iceland	97	3	0	3	0	89	7	1	8	4	95	4	0	4	1
	Ireland	90	6	3	10	0	68	24	3	27	5	85	11	3	14	1
	Israel	89	7	3	11	0	52	25	23	48	0	81	11	8	19	0
	Italy	94	6	0	6	0	61	32	4	37	2	86	12	1	13	1
	Japan	93	6	2	7	0	33[d]	52[d]	16[d]	67[d]	0[d]	72	22	7	28	0
	Korea	90	8	2[d]	10[d]	x(3, 4)	38	42	19[d]	62[d]	x(8, 9)	75	18	7[d]	25[d]	x(13, 14)
	Latvia	93	4	2	6	1	58	25	10	34	8	82	11	4	15	3
	Lithuania	95	4	2	5	0	67	19	8	28	5	86	8	4	12	2
	Luxembourg	94	3	0	3	3	91	2	4	5	4	94	3	1	3	3
	Mexico	81	18	0	19	0	56	44	0	44	0	74	26	0	26	0
	Netherlands	86	4	9	14	0	68	15	13	28	3	80	8	11	19	1
	New Zealand	87	7	6	13	0	54	32	14	46	0	76	15	8	24	0
	Norway	99	1	0	1	0	92	4	2	6	2	97	2	1	2	0
	Poland	87	10	1	10	3	80	13	5	18	2	85	11	2	13	2
	Portugal	89	11	0	11	0	60	27	4	31	9	82	14	1	15	2
	Slovak Republic	92	5	3	8	0	70	13	14	27	2	86	7	6	13	1
	Slovenia	90	8	1	9	1	84	7	4	11	5	88	8	2	10	2
	Spain	87	12	1	13	0	65	30	3	33	2	80	18	1	19	1
	Sweden	100	0	0	0	0	83	1	11	12	5	95	0	3	4	1
	Switzerland	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Türkiye	75	16	9	25	0	69	14	16	31	1	73	15	11	27	0
	United Kingdom	84	9	7	16	0	24	54	19	73	4	64	24	11	34	1
	United States [3]	92	8	0	8	a	36	44	20	64	a	68	23	8	32	a
	OECD average	90	7	2	10	0	66	22	9	31	3	83	12	4	16	1
	EU22 average	92	5	1	8	0	75	13	7	20	5	87	7	3	11	2
Partners	**Argentina**	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Brazil	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	China	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	G20 average	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m

Note: Some levels of education are included with others. Refer to "x" code in Table C1.1 for details. Private expenditure figures include tuition fee loans and scholarships (subsidies attributable to payments to educational institutions received from public sources). Loan repayments from private individuals are not taken into account, and so the private contribution to education costs may be under-represented. Public expenditure figures presented here exclude undistributed programmes. See *Definitions and Methodology* sections for more information. Data and more breakdowns available at: http://stats.oecd.org, *Education at a Glance Database.*

1. Primary education includes pre-primary programmes.
2. Year of reference 2020.
3. Figures are for net student loans rather than gross, thereby underestimating public transfers.

Source: OECD/UIS/Eurostat (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/8e6y0g

Table C3.2. Relative share of public, private and international expenditure on educational institutions, by source of funds and public-to-private transfers (2019)

By level of education and source of funding

		Primary, secondary and post-secondary non-tertiary						Tertiary						Primary to tertiary					
		Initial funds (before transfers between public and private sectors)			Final funds (after transfers between public and private sectors)			Initial funds (before transfers between public and private sectors)			Final funds (after transfers between public and private sectors)			Initial funds (before transfers between public and private sectors)			Final funds (after transfers between public and private sectors)		
		Public	Private	International	Public	Private	International	Public	Private	International	Public	Private	International	Public	Private	International	Public	Private	International
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
OECD	**Countries**																		
	Australia	84	16	0	82	18	0	52	48[d]	x(8)	34	66[d]	x(11)	74	26[d]	x(14)	67	33[d]	x(17)
	Austria	97	3	a	96	4	a	89	11	a	89	11	a	94	6	a	93	7	a
	Belgium	96	3	1	96	3	1	88	8	4	84	13	3	94	4	2	93	6	1
	Canada [1]	m	m	m	90[d]	10[d]	x(5)	m	m	m	54	46[d]	x(11)	m	m	m	76[d]	24[d]	x(17)
	Chile	81	19	a	81	19	a	49	51	a	39	61	a	68	32	a	64	36	a
	Colombia	79	21	0	79	21	0	m	m	0	32	68	0	m	m	0	68	32	0
	Costa Rica [2]	m	m	m	m	m	m	m	m	m	91	9	0	m	m	m	m	m	m
	Czech Republic	93	7	0	93	7	0	76	17	7	76	17	7	88	10	2	88	10	2
	Denmark	94	6	0	94	6	0	85	11	5	85	11	5	91	7	2	91	7	2
	Estonia	91	4	5	96	4	0	60	15	25	71	15	15	81	8	11	88	8	5
	Finland	99	1	0	99	1	0	91	4	5	90	4	5	97	2	2	97	2	2
	France	93	7	0	91	9	0	78	20	2	75	23	2	89	11	1	86	13	1
	Germany	m	m	m	88	12	0	m	m	m	81	17	2	m	m	m	86	13	1
	Greece	m	m	2	93	7	0	71	13	16	75	13	12	m	m	5	88	9	3
	Hungary	m	m	0	83	17	0	m	m	2	70	28	2	m	m	0	80	19	0
	Iceland	97	3	0	97	3	0	89	8	4	89	8	4	95	4	1	95	4	1
	Ireland	90	10	0	90	10	0	89	6	5	68	27	5	90	9	1	85	14	1
	Israel	90	10	0	89	11	0	m	m	0	52	48	0	m	m	0	81	19	0
	Italy	94	6	0	94	6	0	73	25	2	61	37	2	89	10	1	86	13	1
	Japan	m	m	0	93	7	0	m	m	0[d]	33[d]	67[d]	0[d]	m	m	0	72	28	0
	Korea	91	9[d]	x(2)	90	10[d]	x(5)	54	46[d]	x(8)	38	62[d]	x(11)	80	20[d]	x(14)	75	25[d]	x(17)
	Latvia	m	m	4	93	6	1	m	m	21	58	34	8	m	m	9	82	15	3
	Lithuania	89	5	6	95	5	0	56	27	17	67	28	5	79	12	10	86	12	2
	Luxembourg	94	3	3	94	3	3	92	4	4	91	5	4	94	3	3	94	3	3
	Mexico	82	17	0	81	19	0	57	43[d]	x(8)	56	44	0	75	25[d]	x(14)	74	26	0
	Netherlands	m	m	0	86	14	0	m	m	3	68	28	3	m	m	1	80	19	1
	New Zealand	88	12	0	87	13	0	69	31	0	54	46	0	82	18	0	76	24	0
	Norway	100	0	0	99	1	0	95	4	2	92	6	2	100	0	0	97	2	0
	Poland	85	10	5	87	10	3	87	11	2	80	18	2	86	10	4	85	13	2
	Portugal	89	11	0	89	11	0	58	31	11	60	31	9	82	15	3	82	15	2
	Slovak Republic	90	6	4	92	8	0	72	24	4	70	27	2	86	10	4	86	13	1
	Slovenia	89	9	2	90	9	1	80	11	9	84	11	5	87	10	4	88	10	2
	Spain	87	13	0	87	13	0	68	31	2	65	33	2	81	18	1	80	19	1
	Sweden	100	0	0	100	0	0	84	12	5	83	12	5	95	3	1	95	4	1
	Switzerland	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Türkiye	75	25	0	75	25	0	69	31	1	69	31	1	73	27	1	73	27	0
	United Kingdom	86	14	0	84	16	0	49	47	4	24	73	4	74	25	1	64	34	1
	United States [3]	m	m	a	92	8	a	m	m	a	36	64	a	m	m	a	68	32	a
	OECD average	90	9	1	90	10	0	73	22	6	66	31	3	85	12	2	83	16	1
	EU22 average	92	6	2	92	8	0	78	15	8	75	20	5	88	9	3	87	11	2
Partners	**Argentina**	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Brazil	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	China	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	G20 average	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m

Note: See *Definitions and Methodology* sections for more information. Public-to-private transfers at primary to post-secondary non-tertiary levels as well as at tertiary levels are available for consultation on line (see StatLink below). Data and more breakdowns available at http://stats.oecd.org, *Education at a Glance Database*.

1. Primary education includes pre-primary programmes.
2. Year of reference 2020.
3. Figures are for net student loans rather than gross, thereby underestimating public transfers.

Source: OECD/UIS/Eurostat (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/hrtb05

Table C3.3. Trends in the share of public, private and international expenditure on educational institutions (2011, 2015 and 2019)

Final source of funds

		Primary, secondary and post-secondary non-tertiary Share of private expenditure on educational institutions (%)					Tertiary Share of private expenditure on educational institutions (%)					Primary to tertiary Share of private expenditure on educational institutions (%)				
		2011	2015	2019	Percentage point difference between 2011 and 2015	Percentage point difference between 2015 and 2019	2011	2015	2019	Percentage point difference between 2011 and 2015	Percentage point difference between 2015 and 2019	2011	2015	2019	Percentage point difference between 2011 and 2015	Percentage point difference between 2015 and 2019
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
OECD	Countries															
	Australia [1]	m	m	18	m	m	m	m	66[d]	m	m	m	m	33[d]	m	m
	Austria	m	5	4	m	0	m	6	11	m	5	m	5	7	m	2
	Belgium	4	3	3	-1	0	10	14	13	4	-1	5	6	6	1	0
	Canada [1, 2]	9[d]	9[d]	10[d]	0[d]	1[d]	45	43	46	-2	3	24[d]	22[d]	24[d]	-2[d]	2[d]
	Chile	21	17	19	-4	2	78	64	61	-14	-3	45	36	36	-9	1
	Colombia	21	23	21	2	-2	53	54	68	1	13	31	32	32	2	0
	Costa Rica	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Czech Republic	9	8	7	-1	-1	19	20	17	1	-3	12	12	10	0	-2
	Denmark	3	m	6	m	m	5	m	11	m	m	4	m	7	m	m
	Estonia	1	7	4	6	-3	17	24	15	7	-9	6	13	8	7	-6
	Finland	1	1	1	0	0	4	3	4	-1	1	2	2	2	0	0
	France	9	9	9	0	0	19	20	23	1	2	12	12	13	1	1
	Germany	13	13	12	0	-1	13	15	17	2	2	13	14	13	1	0
	Greece	m	7	7	m	0	m	12	13	m	2	m	8	9	m	1
	Hungary	m	7	17	m	9	m	37	28	m	-9	m	14	19	m	5
	Iceland	4	4	3	0	-1	9	8	8	-1	-1	5	5	4	0	-1
	Ireland	m	10	10	m	-1	m	29	27	m	-3	m	16	14	m	-2
	Israel	11	10	11	0	0	51	41	48	-10	7	22	18	19	-4	2
	Italy	4	5	6	1	1	33	35	37	3	1	11	12	13	1	1
	Japan	7	8	7	1	0	68[d]	68[d]	67[d]	0[d]	-1[d]	28	28	28	0	0
	Korea [1]	m	14[d]	10[d]	m	-5[d]	m	64[d]	62[d]	m	-2[d]	m	30[d]	25[d]	m	-6[d]
	Latvia	3	2	6	0	4	35	23	34	-12	11	13	9	15	-5	6
	Lithuania	3	5	5	2	1	25	25	28	0	3	11	12	12	1	0
	Luxembourg	2	3	3	1	0	m	4	5	m	1	m	3	3	m	0
	Mexico	17	17	19	0	2	33	29	44	-4	15	21	20	26	-1	6
	Netherlands	13	12	14	-1	1	28	29	28	1	-1	18	18	19	0	1
	New Zealand	15	14	13	-1	0	45	49	46	3	-2	24	25	24	1	-1
	Norway	0	1	1	1	0	4	4	6	0	2	1	1	2	0	1
	Poland	6	8	10	2	2	26	16	18	-10	2	12	11	13	-1	2
	Portugal	m	11	11	m	-1	29	32	31	2	-1	m	16	15	m	-1
	Slovak Republic	11	11	8	-1	-2	23	20	27	-3	8	14	14	13	0	-1
	Slovenia	9	10	9	1	0	14	13	11	-1	-2	10	10	10	0	-1
	Spain	9	14	13	5	0	23	32	33	9	1	13	19	19	6	0
	Sweden	0	a	0	m	m	10	11	12	1	1	3	3	4	0	0
	Switzerland	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Türkiye	23	24	25	1	1	22	26	31	4	5	23	25	27	2	2
	United Kingdom	14	13	16	-1	2	m	71	73	m	1	m	31	34	m	4
	United States [3]	9	9	8	0	0	61	65	64	4	0	31	32	32	2	-1
	OECD average	9	10	10	0	0	30	30	31	0	1	16	16	16	0	0
	EU22 average	6	8	8	1	0	20	20	20	0	1	10	11	11	1	0
Partners	Argentina	9	m	m	m	m	23	m	m	m	m	12	m	m	m	m
	Brazil	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	China	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	G20 average	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m

Note: Private expenditure figures include tuition fee loans and scholarships (subsidies attributable to payments to educational institutions received from public sources). Loan repayments from private individuals are not taken into account, and so the private contribution to education costs may be under-represented. Data on the share of public and international expenditure are available for consultation on line (see StatLink below). Public expenditure figures presented here exclude undistributed programmes. See *Definitions and Methodology* sections for more information. Data and more breakdowns available at: http://stats.oecd.org, *Education at a Glance Database*.

1. Private expenditure includes international expenditure.
2. Primary education includes pre-primary programmes.
3. Figures are for net student loans rather than gross, thereby underestimating public transfers.

Source: OECD/UIS/Eurostat (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/wpcezf

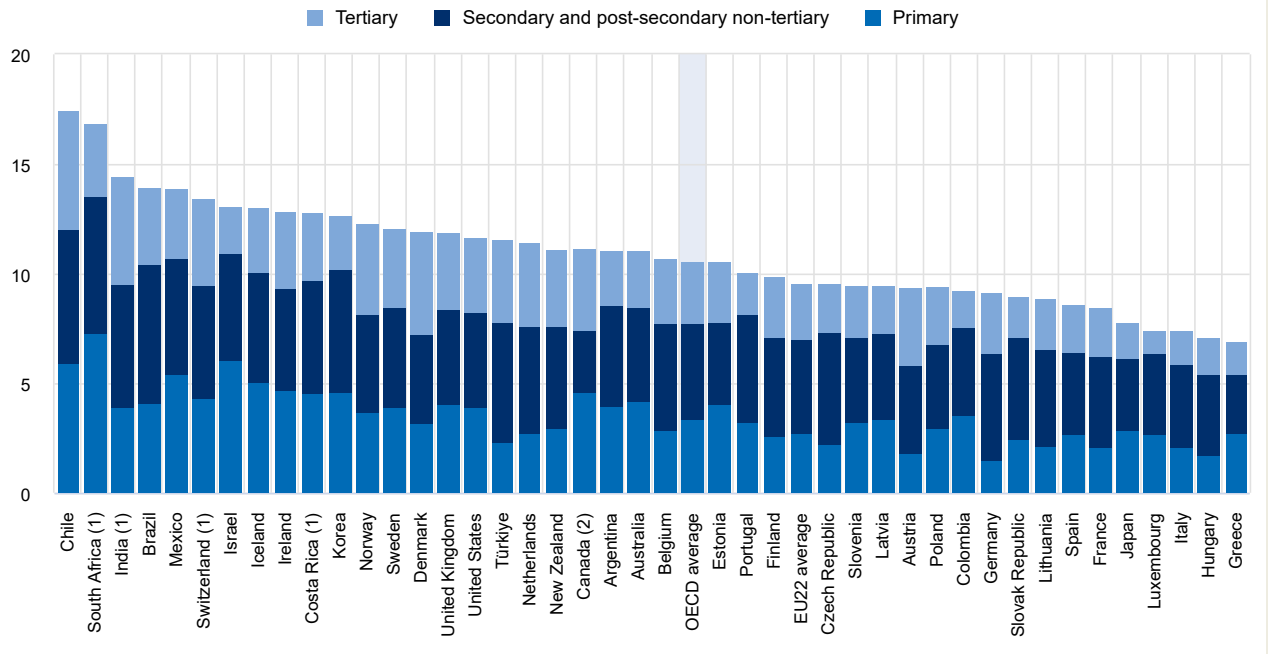
Indicator C4. What is the total public spending on education?

Highlights

- Total public spending on education (from primary to tertiary level) averages 10.6% of total government expenditure across OECD countries, from around 7% to 17%. The largest share of government funding is devoted to primary and secondary levels, explained by near-universal enrolment rates at those levels of education and the greater contribution of private sources at tertiary level.
- Between 2015 and 2019, the proportion of government expenditure devoted to education fell slightly on average across OECD countries (about 1%). This is explained by total government expenditure increasing faster (11%) than the increase in expenditure for education (9%). Data from the Classification of the Functions of Government (COFOG) suggest that the gap will widen further in 2020, with the COVID-19 pandemic pushing governments to spend more to support their economies.
- Spending on tertiary education is highly centralised, with 87% of final public funds coming from the central level on average across OECD countries. In contrast, only an average of 44% of final public expenditure devoted to non-tertiary education comes from the central level.

Figure C4.1. Composition of total public expenditure on education as a percentage of total government expenditure (2019)

Primary to tertiary education (including R&D), in per cent



1. Year of reference differs from 2019. Refer to the source table for more details.
2. Primary education includes pre-primary programmes.

Countries are ranked in descending order of total public expenditure on education as a percentage of total government expenditure.

Source: OECD/UIS/Eurostat (2022), Table C4.1. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

StatLink https://stat.link/x0g4kl

Context

Public expenditure enables governments to serve a wide range of purposes, including providing education and health care and maintaining public order and safety. Decisions concerning budget allocations to different sectors depend on countries' priorities and the options for private provision of these services. Education is one area in which all governments intervene to fund or direct the provision of services. As there is no guarantee that markets will provide equal access to educational opportunities, government funding of educational services is necessary to ensure that education is not beyond the reach of some members of society.

Policy choices or external shocks, such as demographic changes or economic trends, can have an influence on how public funds are spent. Like the financial crisis in 2008, the COVID-19 pandemic significantly affected societies economically, and education is one of the sectors hit (Box C4.1 and Box C4.2). Past economic crises have put pressure on public budgets, resulting in less public funding being allocated to education in some countries. Budget cuts can represent improved allocation of government funds and may generate gains in efficiency and economic dynamism, but they can also affect the quality of government-provided education, particularly at a time when investment in education is important to support learning acquisition and economic growth.

This indicator compares total public spending on education with total government expenditure across OECD and partner countries. This indicates the priority placed on education relative to other public areas of investment, such as health care, social security, defence and security. It also includes data on the different sources of public funding in education (central, regional and local governments) and transfers of funds between these levels of government. Finally, it also covers how public expenditure has changed over time.

Other findings

- On average across OECD countries, the tertiary level accounted for 27% of total public expenditure on education. The share is the lowest in Luxembourg (14%) due to the significant share of national tertiary students who are enrolled abroad.
- While public expenditure on education does not exceed 8% of gross domestic product (GDP) in any OECD country, about one in ten OECD countries with available data for 2019 reported that total government expenditure accounted for more than 50% of GDP.
- Among OECD countries with available COFOG data, total government expenditure increased by an unprecedented 10.9% between 2019 and 2020 on average, even after controlling for inflation. In comparison, the increase in public expenditure on education was only 1.4%, showing that governments needed to invest more heavily in other sectors, such as the economy and the health sector.

Analysis

Public resources invested in the different levels of education

In 2019, total public expenditure on primary to tertiary education as a percentage of total government expenditure for all services averaged 10.6% in OECD countries. However, this share varies across OECD and partner countries, ranging from around 7% in Greece, Hungary and Italy to over 17% in Chile (Table C4.1 and Figure C4.1).

Overall, significant government funding was devoted to non-tertiary levels of education in 2019. In most countries, and on average across OECD countries, roughly three-quarters of total public expenditure on primary to tertiary education (about 8% of total government expenditure) was devoted to non-tertiary education (i.e. primary, secondary and post-secondary non-tertiary education) (Table C4.1 and Figure C4.1). This is largely explained by the near-universal enrolment rates at non-tertiary levels of education (see Indicator B1), the shorter duration of tertiary education relative to the combined length of primary and secondary education, and the fact that in OECD countries, on average, the funding structure of tertiary education depends more on private sources than it does at non-tertiary levels.

The share of total public expenditure devoted to tertiary education varies widely among countries. On average across OECD countries, total public expenditure on tertiary education, including expenditure on research and development, amounted to 27% of total public expenditure on primary to tertiary education. Across OECD and partner countries, the share ranges from below 14% in Luxembourg to over 37% in Austria and Denmark (Table C4.1 and Figure C4.1). In Luxembourg, over three-quarters of national tertiary students are enrolled abroad (see Indicator B6), explaining the low share of public expenditure devoted to tertiary education.

Early childhood education (ECE) is generally excluded from statistics on the total public expenditure on education because of the very diverse nature of systems across OECD countries. There are variations in the targeted age groups, the governance structures, the funding of services, the type of delivery (full-day versus part-day attendance) and the location of provision, whether in centres or schools, or at home (see Indicator B2). On average across OECD countries with data, ECE represents 1.7% of total government expenditure, ranging from 0.3% in Japan to 3.8% in Chile. The varying nature of the organisation of ECE systems can help explain this wide range. In all OECD countries with data, except in Denmark and Norway, expenditure on pre-primary education exceeds the expenditure devoted to early childhood educational development (Table C4.1, available on line).

When considering public expenditure on education as a share of total government expenditure, the relative sizes of public budgets overall should also be taken into account. The share of total government expenditure as a proportion of GDP varies greatly among countries (Table C4.1, available on line). In 2019, about one in ten countries with available data reported that their total government expenditure on all services amounted to more than 50% of GDP. A large share of total government expenditure devoted to public expenditure on education does not necessarily translate into a high share relative to a country's GDP. For example, Ireland allocates 12.9% of its total government expenditure towards primary to tertiary education (more than the OECD average of 10.6%), but total public expenditure on education as a share of GDP is relatively low (3.1% compared to the OECD average of 4.4%). This can be explained by Ireland's relatively low total government expenditure as a share of GDP (24.2%) (Table C4.1, available on line).

Sources of public funding invested in education

The division of responsibility for education funding across levels of government (central, regional and local) is an important element of education policy. Decisions on education funding are taken both at the level of government where the funds originate, and at the level of government where they are ultimately spent. The originating level of government decides on funding amounts and imposes conditions on the use of funds. The ultimate spending level of government has varying amounts of discretion over how funds are spent.

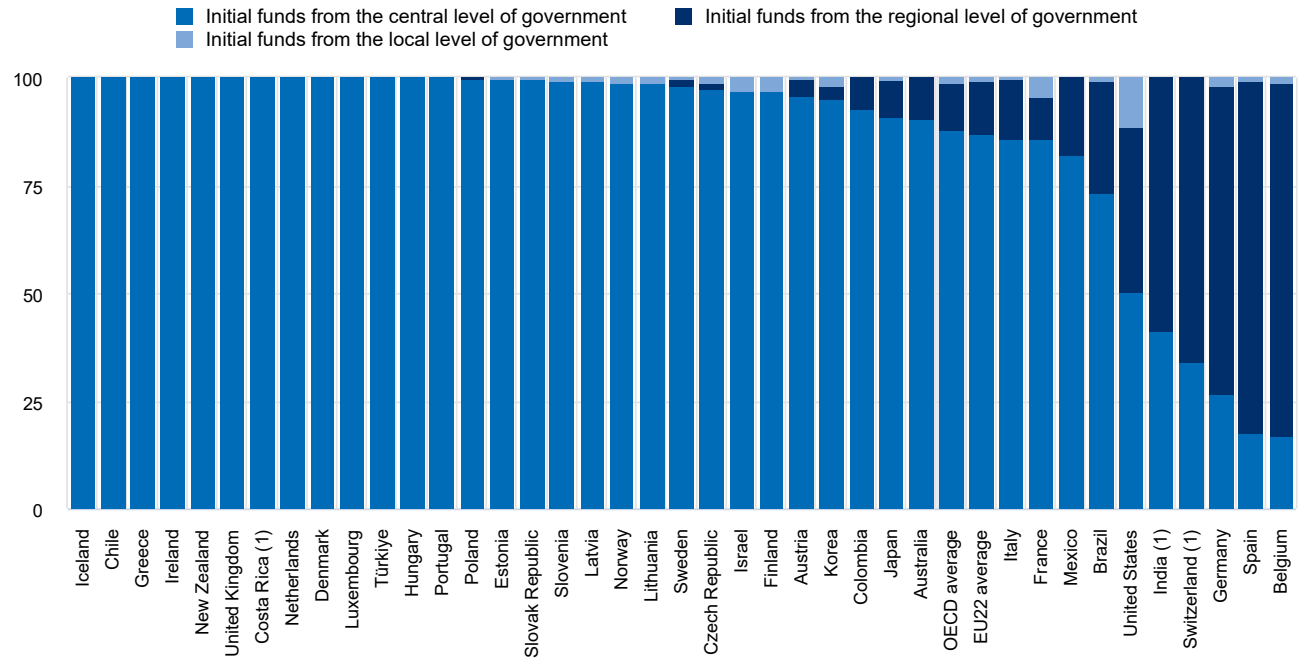
Education funding may be mostly centralised or decentralised with funds transferred between levels of government. High levels of centralisation can cause delays in decision making and decisions that are taken far from those affected can also fail to address the local needs. In highly decentralised systems, however, different units of government may differ in the level of educational resources they spend on students, either due to differences in priorities related to education or to differences in their ability to raise funding. Wide variations in educational standards and resources can also lead to unequal educational opportunities and insufficient attention being paid to long-term national requirements.

Many schools have become more autonomous and decentralised, as well as more accountable to students, parents and the wider public for their outcomes. The results of the OECD Programme for International Student Assessment (PISA) suggest that when autonomy and accountability are appropriately combined, they tend to be associated with better student performance (OECD, 2016[1]).

The government levels responsible for funding education differ at different levels of education. Typically, public funding is more centralised at the tertiary level than at lower levels of education. In 2019, on average across OECD countries, 59% of public funds for non-tertiary education came from the central government before transfers to the various levels of government, compared to 88% of public funds for tertiary education (Table C4.2 and Figure C4.2). While a large share of central government funds for primary and secondary education are transferred to lower levels of government, barely any funding for tertiary education is transferred in this way. In most OECD and partner countries with available data, central government directly provides more than 60% of public funds in tertiary education; in nine out of ten countries, the central government is the main source of both initial and final funding. In contrast, Spain, as well as federal countries such as Belgium, Germany and Switzerland source over 60% of tertiary-level funding from regional governments with little or nothing transferred down to local governments. Local authorities typically do not have an important role in financing tertiary education, representing only 1% of initial and final public funds on average, with the exception of the United States where local governments provide 12% of total expenditure to this level (Figure C4.2).

Figure C4.2. Distribution of initial sources of public funds for tertiary education, by level of government (2019)

In per cent



1. Year of reference differs from 2019. Refer to the source table for more details.
Countries are ranked in descending order of the share of initial sources of funds from the central level of government.
Source: OECD/UIS/Eurostat (2022), Table C4.2. See *Source* section for more information and Annex 3 for (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

StatLink https://stat.link/vwub1c

More funds are transferred from central to regional and local levels of government for non-tertiary education. On average across OECD countries, the share of public funds for non-tertiary education provided by the central government falls from

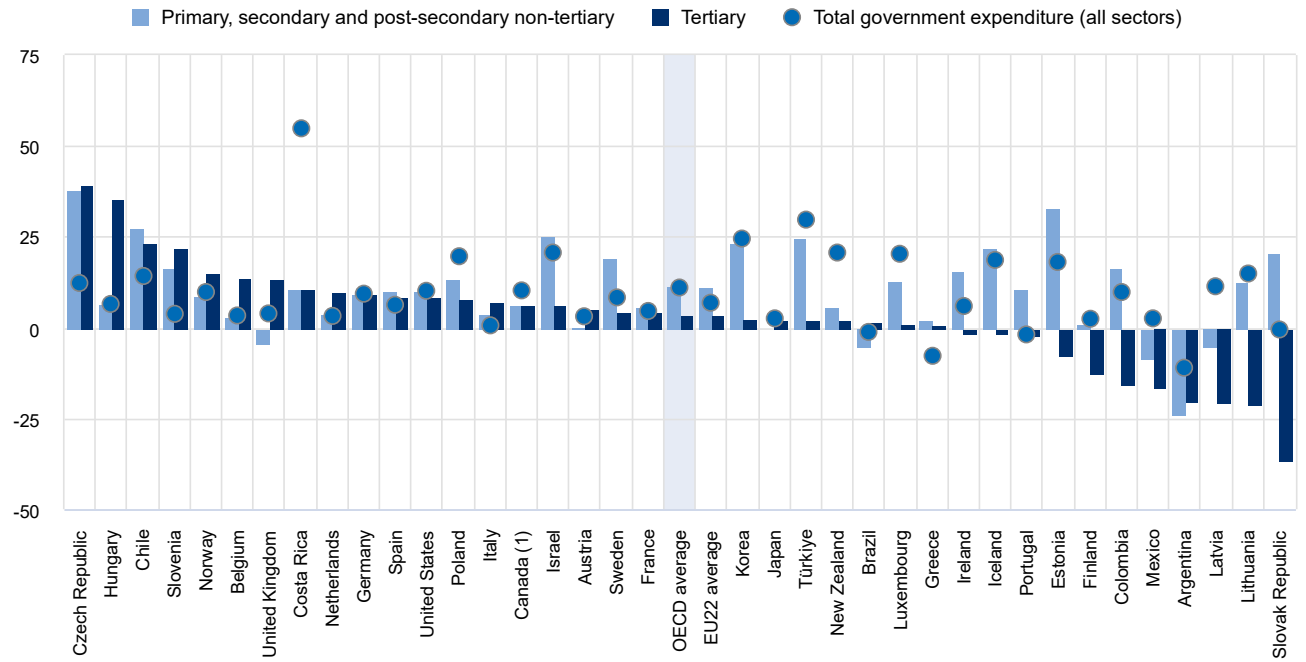
59% to 44% after transfers to other levels of government have been accounted for, while the resulting share of local funds rises from 27% to 42%. There is a great deal of variation in how much the sources of funds change before and after transfers from central to lower levels of government. In Korea, Lithuania, Mexico, Poland and the Slovak Republic, the difference is more than 50 percentage points after transfers to regional and local governments. In Australia, Austria, Chile and Latvia, the difference is more than 30 percentage points. In Canada and the United States, where the regional level is mostly responsible for transferring funds to schools, the share of regional funding falls by 40 percentage points or more after transfers to local levels of government (Table C4.2).

Trends in public expenditure on education, 2015-19

Between 2015 and 2019, total public spending on primary to tertiary education increased by 9% on average across OECD countries. In some countries, changes in expenditure were similar between non-tertiary and tertiary education levels. For example, in Canada, Costa Rica and Germany, the relative increases in expenditure for non-tertiary and tertiary levels were almost the same over that period. Although the relative increases in education expenditure mirrored changes in total government expenditure in Canada and Germany, this was not the case in Costa Rica. There, public education expenditure increased by 11% while total government expenditure increased by 55% during 2015-19. In countries such as Colombia, Lithuania and the Slovak Republic, changes in expenditure diverged by level of education, with tertiary education expenditure falling by at least 8%, while expenditure on primary to post-secondary non-tertiary education rose by at least 12%. In contrast, in Chile, the Czech Republic, Hungary and Slovenia, public expenditure on tertiary education increased by more than 20% between 2015 and 2019, the largest increase across OECD countries (Figure C4.3).

Figure C4.3. Change in total public expenditure on education and total government expenditure between 2015 and 2019

Primary to tertiary education, in per cent, constant prices



1. Primary education includes pre-primary programmes.
Countries are ranked in descending order of the change in total public expenditure on tertiary education between 2015 and 2019.
Source: OECD/UIS/Eurostat (2022), Table C4.3. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

StatLink https://stat.link/nfa7ie

It is difficult to find a simple explanation for the different changes in expenditure over time across OECD countries. For example, in Hungary and Slovenia, demographic changes leading to a falling tertiary student population might have been expected to lead to decreases in expenditure on tertiary education, rather than these continuing large increases in expenditure. On the other hand, despite these changes, spending per full-time tertiary student in Hungary and Slovenia remain below the OECD average (see Indicator C1). In Hungary, the increases in public expenditure on tertiary education might have been driven by the government's 2014 Higher Education Strategy which outlines several commitments to expand higher education infrastructure through transforming former colleges into universities and building higher education centres in remote areas (OECD, 2017[2]). Indeed, in 2019, Hungary had one of the highest shares of capital expenditure compared to current expenditure among OECD countries, and capital expenditure per student (USD 2 100) was higher than the OECD average (USD 1 600) (See Indicator C6). Divergence in expenditure by level of education may be influenced by both demographic trends leading to changes in student enrolment as well as funding structures between governments and educational institutions. For example, in the Slovak Republic, the mechanism through which the government allocates funding to tertiary education institutions plays a key role in the changes observed during this time period. Since school budget allocations rely on the number of students and graduates, public expenditure for tertiary institutions has declined with the falling tertiary student population as a result of both demographic changes as well as domestic students choosing to study abroad (OECD, 2021[3]).

Between 2015 and 2019, the proportion of government expenditure devoted to primary to tertiary education fell by 0.9% on average across OECD countries. Although public spending on education increased, it did not keep pace with the increase in total government expenditure of 11.0%. Despite this relative decline at aggregate level, in about half of the OECD and partner countries with available data for both years, public expenditure on education as a share of total government expenditure increased between 2015 and 2019, with the Czech Republic and Slovenia showing the largest increase (over 13%). In the remaining countries, the increase in public expenditure on education was smaller than the increase in government spending overall. The most notable examples are Costa Rica, Latvia, Lithuania, Mexico, New Zealand and Türkiye where the relative increase in total government expenditure was at least 10 percentage points higher than the increase in public expenditure on education (Table C4.3).

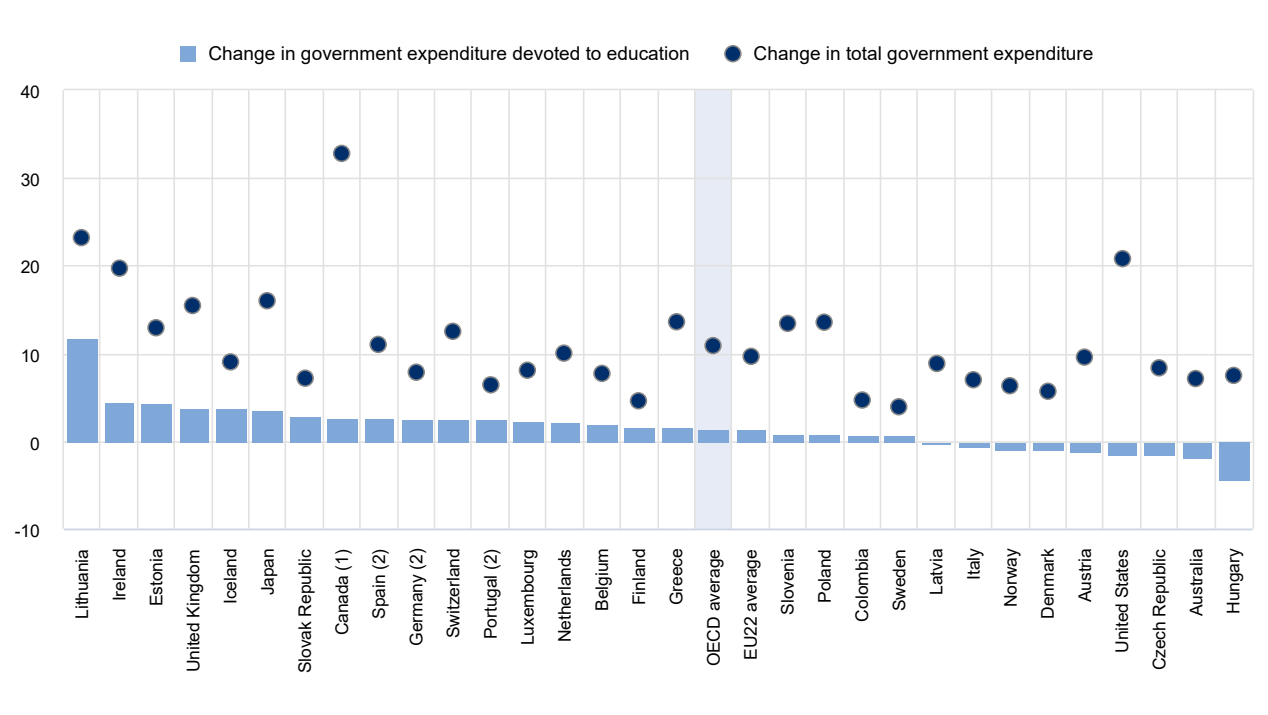
Box C4.1. Evolution of the expenditure on education during the COVID-19 pandemic

The economic crisis associated with the COVID-19 pandemic has affected the availability of public funding for education in OECD and partner countries. While the longer-term impact on education funding is still uncertain, some countries have implemented immediate financial measures to help students and education systems to cope with the disruptions and economic impact of school and university closures. The lack of preparedness for distance learning resulted in governments needing to invest in information and communication technologies (ICT) material and ICT-related teacher training to mitigate the negative impact of the pandemic on learners (OECD, 2021[4]). When schools reopened, their facilities were often ill-equipped to enable social distancing requirements to be respected, resulting in further investment to contain the epidemiological risk and improve the safety of students and teachers.

While there was a pressing need to support the transition to a new form of learning, the economy and the health sectors also needed significant governmental support. This box analyses the impact of the COVID-19 pandemic on education spending between 2019 and 2020, compared to the growth in total government expenditure over the same period. Data from COFOG are available for the reference year 2020, allowing for comparison with pre-crisis expenditure levels. Future editions of *Education at a Glance* will be able to provide evidence on this in greater detail once data from the UNESCO, OECD and Eurostat (UOE) data collections become available for the pandemic period. The COFOG data presented in this box can only provide a first impression of trends and are not fully comparable to other data in this chapter due to some differences in the underlying statistical concepts of the COFOG and UOE data collections (Eurostat, 2019[5]). For example, COFOG covers non-formal education whereas UOE collects only formal education, so some adult education or continuing education programmes are included in COFOG, but excluded from UOE.

Figure C4.4. Change in total public expenditure and public expenditure on education between 2019 and 2020

In per cent, data based on the Classification of the Functions of Government (COFOG), 2015 constant prices



1. Canadian COFOG data adjusted in 2015 constant prices: https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1010000501.
2. Provisional data.
Countries are ranked in descending order of the change in government expenditure devoted to education between 2019 and 2020.
Source: OECD (2022), Government expenditure by function (COFOG), https://stats.oecd.org/Index.aspx?DataSetCode=SNA_TABLE11.

StatLink https://stat.link/u9x4gi

On average, across OECD countries with available COFOG data, total government expenditure increased by 11% between 2019 and 2020, even after controlling for inflation (Figure C4.4). In comparison, the increase was only 3% between 2018 and 2019. The increase during the COVID-19 crisis is largely due to subsidies provided in the context of job retention schemes. During the first wave of the COVID-19 pandemic, job retention schemes supported approximately 60 million jobs across OECD countries, more than ten times as many as during the global financial crisis (OECD, 2021[6]). This explains why the increase in total government expenditure was larger than the increase in education expenditure for all OECD countries with data. For example, in Lithuania, where the increase in education expenditure was the highest (+11.7%), the increase in total government expenditure was even larger (+23.2%). Although COVID-19 dominated the public debate, changes in government expenditure between 2019 and 2020 are not solely linked to the pandemic; countries continued or even accelerated reforms in a number of sectors. The future will tell how this disruption and sudden changes in public expenditure will affect education policies and learning achievements in the long run.

Box C4.2. Education support measures affecting public budgets during the COVID-19 crisis

During the school closures and the reopening that followed, the measures taken across OECD countries to support teaching and learning varied. However, the results of the 4th wave of the Survey on Joint National Responses to COVID-19 show some common ground across many countries (see COVID chapter). The survey asked countries which of the

following six measures they had taken due to COVID-19 to support education which had a direct impact on the public education budget:

- recruitment of temporary teachers and/or other staff
- additional bonuses for teachers
- additional bonuses for other staff
- additional support for teachers/staff: funding masks, COVID-19 tests, health care, etc.
- discounts on schools meals (or free meals)
- investment into infrastructure to improve the sanitary conditions (e.g. installation of air filters in classrooms).

The possible answers were: yes, no, or schools/districts/the most local level of governance could decide at their own discretion.

Across the 29 countries and other participants with data for the school year 2020/21, only Mexico and the French Community of Belgium reported no additional funding for the provision of masks, COVID tests or other health-related expenses for primary and secondary education teachers or staff. Most countries reported that such support was provided on a systematic basis across schools, but in Canada, Finland, Sweden and United States, the support varied across schools or regions because the decisions were made at lower levels of authority. Most countries did not provide bonuses to teachers. France and Mexico are the only two countries that reported having a centralised policy of bonuses for teachers in tertiary education during the COVID-19 crisis. In the rest of the countries such bonuses were either non-existent at tertiary level or were at the discretion of lower levels of governance. At primary and secondary levels, France, the French Community of Belgium, Latvia, Lithuania, Mexico, Poland, Slovak Republic and Slovenia provided bonuses for teachers. In Austria, additional bonuses were only provided to school heads and administrative staff in upper secondary schools.

Investment in infrastructure to improve sanitary conditions was widespread at primary and secondary levels across countries participating in the survey. Only Mexico, Portugal and Slovenia reported not providing additional financial support for such measures at these levels. In France, Iceland, Lithuania, Norway, Poland and the Slovak Republic, decisions about expenditure on infrastructure to improve sanitary conditions at primary and secondary levels were at the discretion of lower levels of governance, in contrast to funding for the provision of masks, COVID-19 tests or other health-related expenses, which was provided on a systematic basis. About half of countries recruited temporary teachers and/or other staff on a systematic basis to support education during COVID-19. Only 9 out of 29 countries with data did not resort to such means to support learning at primary and secondary levels. In contrast, discounted (or free) school meals was the second least widely adopted policy measure. At primary and secondary levels, only Colombia, Latvia, Portugal and England (United Kingdom) reported having provided these at the national level, while in Canada, Estonia, France, Japan, Lithuania and Sweden, the decision to provide discounts on school meals was decentralised.

In general, measures to support education during the COVID-19 pandemic were adopted much more widely at primary and secondary level than at tertiary level. For example, 79% of countries reported providing systematic support for teachers and staff to fund masks, COVID-19 tests and other healthcare expenses at primary and secondary level, compared to 44% at tertiary level. This may suggest that the additional spending engendered by the COVID-19 crisis has weighed differently on public budgets at different levels of education.

Definitions

Intergovernmental transfers are transfers of funds designated for education from one level of government to another. They are defined as net transfers from a higher to a lower level of government. **Initial funds** refer to the funds before transfers between levels of government, while **final funds** refer to the funds after such transfers.

Public expenditure on education covers expenditure on educational institutions and expenditure outside educational institutions such as support for students' living costs and other private expenditure outside institutions, in contrast to Indicators C1, C2 and C3, which focus only on spending on educational institutions. Public expenditure on education includes expenditure by all public entities, including the education ministry and other ministries, local and regional governments, and other public agencies. OECD countries differ in the ways in which they use public money for education. Public funds may flow

directly to institutions or may be channelled to institutions via government programmes or via households. Public funds may be restricted to the purchase of educational services or may be used to support students' living costs.

All government sources of expenditure on education, apart from international sources, can be classified under three levels of government: 1) central (national) government; 2) regional government (province, state, *Bundesland*, etc.); and 3) local government (municipality, district, commune, etc.). The terms "regional" and "local" apply to governments with responsibilities exercised within certain geographical subdivisions of a country. They do not apply to government bodies with roles defined in terms of responsibility for particular services, functions or categories of students that are not geographically circumscribed.

Total government expenditure corresponds to non-repayable current and capital expenditure on all functions (including education) of all levels of government (central, regional and local), including non-market producers (e.g. providing goods and services free of charge, or at prices that are not economically significant) that are controlled by government units, and social security funds. It does not include expenditure derived from public corporations, such as publicly owned banks, harbours or airports. It includes direct public expenditure on educational institutions (as defined above), as well as public support to households (e.g. scholarships and loans to students for tuition fees and student living costs) and to other private entities for education (e.g. subsidies to companies or labour organisations that operate apprenticeship programmes).

Methodology

Figures for total government expenditure and GDP have been taken from the *OECD National Accounts Statistics Database* (see Annex 2).

Public expenditure on education is expressed as a percentage of a country's total government expenditure. The statistical concept of total government expenditure by function is defined by the National Accounts' Classification of the Functions of Government (COFOG). There are strong links between the COFOG classification and the UNESCO, OECD and Eurostat (UOE) data collection, although the underlying statistical concepts differ to some extent (Eurostat, 2019[5]).

Expenditure on debt servicing (e.g. interest payments) is included in total government expenditure, but it is excluded from public expenditure on education, because some countries cannot separate interest payments for education from those for other services. This means that public expenditure on education as a percentage of total government expenditure may be underestimated in countries in which interest payments represent a large proportion of total government expenditure on all services.

For more information, please see the *OECD Handbook for Internationally Comparative Education Statistics 2018* (OECD, 2018[7]) and Annex 3 for country-specific notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

Source

Data refer to the financial year 2019 (unless otherwise specified) and are based on the UNESCO, OECD and Eurostat (UOE) data collection on education statistics administered by the OECD in 2021 (for details see Annex 3 at: (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf). Data from Argentina, China, India, Indonesia, Saudi Arabia and South Africa are from the UNESCO Institute of Statistics (UIS).

The data on expenditure for 2012-19 were updated based on a survey in 2021-22, and expenditure figures for 2015-19 were adjusted to the methods and definitions used in the current UOE data collection.

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Indicator C4 tables

Tables Indicator C4. What is the total public spending on education?

Table C4.1	Total public expenditure on education as a percentage of total government expenditure (2019)
Table C4.2	Distribution of sources of total public funds devoted to education, by level of government (2019)
Table C4.3	Index of change in total public expenditure on education as a percentage of total government expenditure (2012 and 2019

StatLink https://stat.link/cdtu69

Cut-off date for the data: 17 June 2022. Any updates on data can be found on line at: http://dx.doi.org/10.1787/eag-data-en. More breakdowns can also be found at http://stats.oecd.org, *Education at a Glance Database*.

Table C4.1. Total public expenditure on education as a percentage of total government expenditure (2019)

Initial sources of funds, by level of education

		Primary	Secondary					Post-secondary non-tertiary	Primary, secondary and post-secondary non-tertiary	Tertiary				Primary to tertiary (including R&D)		Primary to tertiary (excluding R&D)
			Lower secondary	Upper secondary			All secondary			Short-cycle tertiary	Long-cycle tertiary	All tertiary	All tertiary (excluding R&D)	Total	Of which: public transfers and payments to the non-educational private sector	
				General programmes	Vocational programmes	All programmes										
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
OECD	**Countries**															
	Australia	4.2	2.6	1.0	0.4	1.5	4.1	0.2	8.5	0.4	2.2	2.6	1.3	11.1	1.4	9.8
	Austria	1.8	2.2	0.6	1.2	1.8	4.1	0.0	5.9	0.5	3.0	3.6	2.7	9.5	0.5	8.6
	Belgium	2.9	1.7	1.3[d]	1.9[d]	3.2[d]	4.9[d]	x(3, 4, 5, 6)	7.8	0.1	2.9	3.0	2.2	10.7	0.7	10.0
	Canada [1, 2]	4.6[d]	x(1)	x(5)	x(5)	2.9	2.9	m	7.5[d]	1.2	2.5	3.6	m	11.1 [d]	m	m
	Chile	5.9	2.2	2.7	1.2	3.9	6.1	a	12.0	0.8	4.7	5.4	5.1	17.4	1.7	17.1
	Colombia [2]	3.5	3.0	x(5)	x(5)	1.1	4.1	m	7.6	x(11)	x(11)	1.6	m	9.2	0.6	m
	Costa Rica [3]	4.6	2.3	2.0	0.8	2.9	5.1	a	9.7	m	m	3.1	m	12.8	a	m
	Czech Republic	2.2	2.8	0.6	1.7	2.3	5.0	0.0	7.3	0.0	2.3	2.3	1.5	9.5	0.2	8.7
	Denmark	3.2	2.0	1.3	0.8	2.1	4.1	a	7.3	0.5	4.2	4.7	3.2	11.9	2.0	10.5
	Estonia	4.1	2.0	0.6	0.9	1.6	3.5	0.2	7.8	a	2.8	2.8	1.7	10.6	0.2	9.5
	Finland	2.6	2.1	0.7	1.7[d]	2.3[d]	4.4[d]	x(4, 5, 6)	7.1	a	2.8	2.8	1.8	9.9	0.4	8.8
	France	2.1	2.1	1.3	0.7	2.0	4.1	0.0	6.3	0.5	1.7	2.2	1.6	8.5	0.4	7.8
	Germany	1.5	2.7	0.9	0.9	1.8	4.5	0.3	6.4	0.0	2.8	2.8	1.8	9.2	0.9	8.2
	Greece	2.7	1.4	0.8	0.5	1.3	2.7	0.0	5.4	a	1.5	1.5	1.0	6.9	0.0	6.4
	Hungary	1.7	1.6	0.9	0.9	1.8	3.4	0.3	5.4	0.0	1.6	1.6	1.2	7.1	0.4	6.7
	Iceland	5.1	2.4	1.6	0.8	2.4	4.8	0.1	10.1	0.1	2.8	2.9	m	13.0	0.4	m
	Ireland	4.7	2.0	x(5)	x(5)	2.4	4.3	0.4	9.4	x(11)	x(11)	3.5	2.6	12.9	1.8	12.0
	Israel	6.1	x(3, 4, 5)	3.1[d]	1.7[d]	4.8[d]	4.8	0.0	10.9	0.5	1.7	2.2	1.1	13.1	0.4	12.0
	Italy	2.1	1.4	x(5)	x(5)	2.3[d]	3.7[d]	x(5.6)	5.8	0.0	1.6	1.6	1.1	7.4	0.6	6.9
	Japan [4]	2.9	1.7	x(5)	x(5)	1.6[d]	3.3[d]	x(5, 6, 9, 10, 11)	6.2	0.2[d]	1.5[d]	1.6[d]	m	7.8	0.5	m
	Korea	4.6	2.6	x(5)	x(5)	3.1	5.6	a	10.2	0.3	2.1	2.4	1.7	12.7	0.9	12.0
	Latvia	3.4	1.6	1.2	1.0	2.2	3.8	0.1	7.3	0.3	1.9	2.2	1.6	9.5	0.3	8.9
	Lithuania	2.2	3.0	0.8	0.4	1.2	4.2	0.3	6.6	a	2.3	2.3	1.5	8.9	0.3	8.1
	Luxembourg	2.7	1.8	0.7	1.3	2.0	3.7	0.0	6.4	0.0	1.0	1.0	0.7	7.5	0.1	7.1
	Mexico	5.4	2.7	1.6	1.0	2.5	5.3	a	10.7	x(11)	x(11)	3.2	2.5	13.9	1.3	13.2
	Netherlands	2.7	2.5	0.7	1.6	2.3	4.9	0.0	7.6	0.0	3.8	3.8	2.7	11.4	1.7	10.3
	New Zealand	3.0	2.2	1.6	0.5	2.1	4.3	0.4	7.6	0.3	3.3	3.6	3.1	11.2	1.7	10.7
	Norway	3.7	1.7	1.2	1.5	2.7	4.4	0.1	8.2	0.1	4.1	4.2	3.1	12.4	1.7	11.2
	Poland	3.0	2.0	0.7	1.1	1.7	3.7	0.1	6.8	0.0	2.6	2.6	1.9	9.4	0.4	8.7
	Portugal	3.2	2.5	x(5)	x(5)	2.5[d]	4.9[d]	x(5, 6)	8.2	0.0	1.8	1.9	1.3	10.0	0.7	9.5
	Slovak Republic	2.4	2.5	0.6	1.4	2.1	4.5	0.1	7.1	0.0	1.9	1.9	1.5	9.0	0.7	8.5
	Slovenia	3.3	1.7	0.7	1.4	2.1	3.9	a	7.1	0.1	2.2	2.4	2.0	9.5	0.9	9.1
	Spain	2.7	1.8	1.2	0.8[d]	2.0[d]	3.8[d]	x(4, 5, 6)	6.4	0.4	1.8	2.2	1.6	8.6	0.4	8.0
	Sweden	3.9	1.8	1.4	1.1	2.6	4.4	0.1	8.5	0.2	3.4	3.6	2.4	12.1	1.4	10.9
	Switzerland [5]	4.4	2.6	1.0[d]	1.5[d]	2.5[d]	5.1[d]	x(3, 4, 5, 6)	9.5	x(11)	x(11)	4.0	2.1	13.5	0.3	11.6
	Türkiye	2.3	2.4	1.2	1.9	3.1	5.5	a	7.9	x(11)	x(11)	3.7	3.1	11.6	0.9	11.0
	United Kingdom	4.0	2.0	1.6	0.7	2.4	4.4	a	8.4	0.3	3.2	3.4	2.8	11.9	2.5	11.3
	United States	3.9	2.1	x(5)	x(5)	2.2	4.3	0.0	8.3	x(11)	x(11)	3.4	3.0	11.7	1.2	11.3
	OECD average	3.4	2.2	1.2	1.1	2.3	4.3	m	7.8	0.2	2.5	2.8	2.1	10.6	0.9	9.8
	EU22 average	2.8	2.0	0.9	1.1	2.1	4.1	0.1	7.0	0.2	2.4	2.6	1.8	9.6	0.7	8.8
Partners	**Argentina**	4.0	2.6	x(5)	x(5)	1.9	4.6	a	8.5	x(11)	x(11)	2.6	2.6	11.1	0.0	11.1
	Brazil	4.1	3.4	x(5)	x(5)	2.9[d]	6.3[d]	x(5, 6)	10.4	x(11)	x(11)	3.6	3.2	14.0	0.9	13.6
	China	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	India [3]	3.9	2.1	m	m	3.5	5.6	0.1	9.6	m	m	4.9	4.9	14.5	0.2	14.5
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa [3]	7.3	2.2	x(5)	x(5)	3.6	5.8	0.5	13.6	x(11)	x(11)	3.3	3.3	16.9	m	16.9
	G20 average	3.7	2.3	m	m	2.5	4.6	m	8.5	m	m	3.0	2.5	11.4	0.9	11.2

Note: The public expenditure presented in this table includes both public transfers and payments to the non-educational private sector which are attributable to educational institutions, and those to households for living costs, which are not spent in educational institutions. Therefore, the figures presented here (before transfers) exceed those for public spending on institutions found in Indicators C1, C2 and C3. Data on public expenditure on early childhood education (Columns 16 to 18) and on public expenditure as a share of GDP (Columns 19 to 22) are available for consultation on line (see StatLink below). See *Definitions and Methodology* sections for more information. Data and more breakdowns available at: http://stats.oecd.org, *Education at a Glance Database.*

1. Primary education includes pre-primary programmes.
2. Post-secondary non-tertiary figures are treated as negligible.
3. Year of reference 2020.
4. Data do not cover day care centres and integrated centres for early childhood education.
5. Year of reference 2018.

Source: OECD/UIS/Eurostat (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/sgm1rn

Table C4.2. Distribution of sources of total public funds devoted to education, by level of government (2019)

Percentage of total government expenditure, before and after transfers, by level of education

		Primary, secondary and post-secondary non-tertiary						Tertiary						Primary to tertiary					
		Initial funds (before transfers between levels of government)			Final funds (after transfers between levels of government)			Initial funds (before transfers between levels of government)			Final funds (after transfers between levels of government)			Initial funds (before transfers between levels of government)			Final funds (after transfers between levels of government)		
		Central	Regional	Local	Central	Regional	Local	Central	Regional	Local	Central	Regional	Local	Central	Regional	Local	Central	Regional	Local
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
OECD	Countries																		
	Australia	34	66[d]	x(2)	2	98[d]	x(5)	91	9[d]	x(8)	88	12[d]	x(11)	47	53[d]	x(14)	22	78[d]	x(17)
	Austria	74	14	11	37	51	12	96	4	0	96	3	0	82	10	7	60	33	7
	Belgium	23	74	3	23	73	4	17	82	1	16	83	1	21	76	2	21	75	4
	Canada [1]	4[d]	76[d]	21[d]	3[d]	10[d]	87[d]	m	m	m	m	m	m	m	m	m	m	m	m
	Chile	97	a	3	62	a	38	100	a	0	100	a	0	98	a	2	74	a	26
	Colombia	87	3	10	87	3	10	93	7	0	93	7	0	88	4	8	88	4	8
	Costa Rica [2]	100	a	a	100	a	a	100	a	0	100	a	0	100	a	0	100	a	0
	Czech Republic	13	60	27	11	63	27	97	1	1	97	2	1	33	46	21	31	48	21
	Denmark	27	0	73	34	0	66	100	0	0	100	0	0	55	0	45	60	0	40
	Estonia	57	a	43	27	a	73	100	a	0	100	a	0	68	a	32	46	a	54
	Finland	32	a	68	8	a	92	97	a	3	97	a	3	50	a	50	34	a	66
	France	73	16	11	73	16	12	86	10	5	86	9	5	76	14	9	76	14	10
	Germany	6	75	19	5	71	24	27	71	2	20	77	2	12	74	14	10	73	17
	Greece	100	a	0	93	a	7	100	a	a	100	a	a	100	a	0	95	a	5
	Hungary	92	a	8	92	a	8	100	a	0	100	a	0	94	a	6	94	a	6
	Iceland	26	a	74	25	a	75	100	a	0	100	a	a	43	a	57	42	a	58
	Ireland	100	a	a	100	a	a	100	a	a	100	a	a	100	a	a	100	a	a
	Israel	88	a	12	67	a	33	97	a	3	97	a	3	89	a	11	72	a	28
	Italy	88	7	5	87	6	7	86	14	0	84	16	0	87	8	4	86	8	5
	Japan [3]	17	53	29	1	29	70	91[d]	9[d]	0[d]	90[d]	9[d]	0[d]	33	44	23	20	25	55
	Korea	88	9	3	1	38	61	95	3	2	95	3	2	89	8	3	19	31	50
	Latvia	60	a	40	18	a	82	99	a	1	99	a	1	69	a	31	37	a	63
	Lithuania	73	a	27	22	a	78	99	a	1	99	a	1	80	a	20	42	a	58
	Luxembourg	90	a	10	90	a	10	100	a	0	100	a	0	91	a	9	91	a	9
	Mexico	78	22	0	27	73	0	82	18	0	79	21	0	79	21	0	39	61	0
	Netherlands	95	0	5	92	0	8	100	0	a	100	0	a	96	0	4	95	0	5
	New Zealand	100	a	a	100	a	a	100	a	a	100	a	a	100	a	a	100	a	a
	Norway	12	a	88	9	a	91	99	a	1	98	a	2	41	a	59	39	a	61
	Poland	60	1	39	4	2	95	100	0	0	100	0	0	71	1	28	30	1	68
	Portugal	83	6	11	83	6	11	100	0	0	100	0	0	86	5	9	86	5	9
	Slovak Republic	77	a	23	25	a	75	100	a	0	99	a	1	82	a	18	41	a	59
	Slovenia	89	a	11	89	a	11	99	a	1	99	a	1	92	a	8	92	a	8
	Spain	12	82	6	12	82	6	18	81	1	18	81	1	13	82	5	13	82	5
	Sweden	7	a	93	7	a	93	98	2	0	98	2	0	34	1	65	34	1	65
	Switzerland	3	61	36	0	60	40	34	66	0	17	83	0	12	62	25	5	67	28
	Türkiye	99	a	1	99	a	1	100	a	0	100	a	0	99	a	1	99	a	1
	United Kingdom	58	a	42	58	a	42	100	a	0	100	a	0	70	a	30	70	a	30
	United States	9	42	49	1	2	97	50	38	12	50	38	12	21	41	38	15	12	72
	OECD average	59	15	27	44	13	42	88	11	1	87	12	1	68	13	19	56	14	30
	EU22 average	60	14	25	47	15	38	87	12	1	87	12	1	68	14	18	58	14	28
Partners	Argentina	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Brazil	15	39	46	7	41	52	73	26	1	73	26	1	30	36	34	24	37	39
	China	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	India [2]	14	86	0	14	71	15	41	59	0	41	59	0	23	77	0	23	67	10
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	G20 average	46	42	19	30	39	39	78	m	2	77	m	2	57	m	15	43	m	26

Note: Some levels of education are included with others. Refer to "x" code in Table C4.1 for details. Data on early childhood education (Columns 19 to 36) are available for consultation on line (see StatLink below). See *Definitions and Methodology* sections for more information. Data and more breakdowns available at: http://stats.oecd.org, *Education at a Glance Database*.

1. Primary education includes pre-primary programmes.
2. Year of reference 2020.
3. Data do not cover care centres and integrated centres for early childhood education.
4. Year of reference 2018.

Source: OECD/UIS/Eurostat (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/f7bir8

Table C4.3. Index of change in total public expenditure on education as a percentage of total government expenditure (2012 and 2019)

Initial sources of funds, by level of education and year; reference year 2015 = 100, constant prices

		Primary, secondary and post-secondary non-tertiary				Tertiary				Primary to tertiary				Change in total government expenditure	
		Change in public expenditure		Change in public expenditure on education as a percentage of total government expenditure		Change in public expenditure		Change in public expenditure on education as a percentage of total government expenditure		Change in public expenditure		Change in public expenditure on education as a percentage of total government expenditure			
		2012	2019	2012	2019	2012	2019	2012	2019	2012	2019	2012	2019	2012	2019
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
OECD	Countries														
	Australia	m	m	m	m	m	m	m	m	m	m	m	m	90.0	119.4
	Austria	99.3	100.3	100.9	97.3	100.8	105.1	102.3	102.0	99.9	102.1	101.4	99.0	98.5	103.1
	Belgium	99.1	102.9	98	99.6	96.6	113.6	95.7	110.0	98.4	105.7	97.5	102.3	101.0	103.3
	Canada [1]	97.1 [d]	106.2 [d]	101 [d]	96.3 [d]	101.4	106.1	105.2	96.3	98.5 [d]	106.2 [d]	102.1 [d]	96.3 [d]	96.4	110.2
	Chile	101.5	127.3	118.4	111.4	70.7	123.4	82.5	108.0	91.7	126.1	107.0	110.3	85.7	114.2
	Colombia	84.7	116.6	110.1	106.2	88.8	84.6	115.5	77.0	85.6	109.3	111.3	99.5	76.9	109.8
	Costa Rica	89.2	110.9	101.8	71.6	77.0	110.6	87.9	71.4	86.3	110.8	98.5	71.6	87.6	154.8
	Czech Republic	96.1	138.1	97.1	123.0	119.7	139.1	121.0	123.9	101.6	138.3	102.8	123.2	98.9	112.3
	Denmark	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Estonia	110.8	132.8	118.8	112.5	69.5	92.5	74.5	78.4	97.0	119.2	103.9	101.0	93.3	118.0
	Finland	100.0	101.1	101.1	98.6	105.8	87.4	107.0	85.3	101.8	96.8	103.0	94.4	98.9	102.5
	France	98.7	105.6	100.8	101.0	96.6	104.5	98.6	100.0	98.1	105.3	100.2	100.7	97.9	104.6
	Germany	100.6	109.1	103.0	99.8	98.1	109.1	100.5	99.8	99.8	109.1	102.2	99.8	97.7	109.3
	Greece	103.6	102.2	96.5	110.8	107.2	100.7	99.9	109.1	104.4	101.9	97.2	110.4	107.3	92.2
	Hungary	83.4	106.7	94.2	100.2	111.5	135.7	125.9	127.4	88.8	112.2	100.2	105.4	88.6	106.5
	Iceland	91.2	121.9	92.3	102.8	94.0	98.3	95.1	82.9	91.9	115.6	93.0	97.5	98.9	118.6
	Ireland	m	115.8	m	109.3	m	98.4	m	92.9	m	110.5	m	104.3	106.2	105.9
	Israel	90.5	125.0	95.0	103.7	91.6	106.0	96.1	87.9	90.7	121.4	95.2	100.7	95.3	120.6
	Italy	100.8	104.1	99.2	103.5	104.2	107.2	102.6	106.5	101.5	104.8	99.9	104.1	101.6	100.6
	Japan [2]	102.0	100.0	102.3	97.6	104.8 [d]	102.3 [d]	105.2 [d]	99.8 [d]	102.6	100.5	102.9	98.0	99.7	102.5
	Korea	m	123.3	m	99.1	m	102.4	m	82.2	m	118.7	m	95.3	92.6	124.5
	Latvia	80.3	94.8	86.3	85.1	76.0	79.3	81.7	71.2	79.2	90.8	85.1	81.5	93.0	111.4
	Lithuania	106.1	112.5	112.8	97.9	107.1	79.0	113.8	68.8	106.4	101.4	113.1	88.2	94.1	114.9
	Luxembourg	102.8	113.0	107.5	95.0	77.3	101.2	80.8	85.0	98.9	111.2	103.4	93.4	93.9	120.3
	Mexico	92.4	91.5	98.3	89.2	82.1	83.4	87.4	81.3	89.8	89.5	95.6	87.2	93.9	102.6
	Netherlands	99.6	103.7	98.1	100.5	93.6	110.0	92.2	106.6	97.7	105.7	96.2	102.4	101.5	103.2
	New Zealand	99.0	105.8	100.7	87.7	99.3	101.9	101.1	84.4	99.1	104.5	100.9	86.6	98.3	120.7
	Norway	96.3	109.0	107.0	99.4	101.4	115.3	112.7	105.1	98.0	111.1	108.9	101.2	90.0	109.8
	Poland	97.9	113.4	103.0	94.8	85.2	108.0	89.7	90.3	94.2	111.8	99.2	93.5	95.0	119.6
	Portugal	102.0	110.8	102.3	113.0	91.9	98.1	92.2	100.0	99.9	108.2	100.2	110.3	99.7	98.1
	Slovak Republic	84.1	120.8	101.3	121.5	62.2	63.8	74.9	64.1	76.6	101.4	92.3	102.0	83.0	99.5
	Slovenia	107.7	116.8	110.5	112.6	117.7	122.2	120.8	117.8	110.1	118.1	113.0	113.8	97.5	103.7
	Spain	99.9	110.1	93.5	103.6	102.2	108.6	95.7	102.2	100.5	109.7	94.1	103.2	106.8	106.3
	Sweden	94.0	119.2	98.7	110.0	94.7	104.5	99.4	96.5	94.2	114.4	98.9	105.6	95.2	108.3
	Switzerland	99.1	m	107.7	m	92.9	m	101.0	m	97.3	m	105.7	m	92.0	m
	Türkiye	83.1	124.9	95.9	96.3	86.2	102.0	99.5	78.6	84.2	116.4	97.2	89.8	86.7	129.7
	United Kingdom	93.2	95.9	92.8	92.4	93.6	113.6	93.1	109.3	93.3	100.4	92.9	96.7	100.5	103.9
	United States	96.3	110.1	97.5	99.9	100.0	108.5	101.3	98.5	97.4	109.6	98.6	99.5	98.7	110.2
	OECD average	96.5	111.5	101.3	101.2	94.2	103.6	98.6	94.3	95.7	109.1	100.4	99.1	95.5	111.0
	EU22 average	98.3	111.1	101.2	104.3	95.9	103.3	98.5	97.0	97.5	108.5	100.2	101.8	97.6	106.8
Partners	Argentina	91.3	76.2	105.2	85.6	87.6	79.7	101.0	89.6	90.5	77.0	104.3	86.5	86.8	89.0
	Brazil	102.0	94.7	105.2	95.9	70.9	101.9	73.1	103.1	94.4	96.5	97.4	97.6	96.9	98.8
	China	m	m	m	m	m	m	m	m	m	m	m	m	71.6	139.0
	India	m	m	m	m	m	m	m	m	m	m	m	m	81.9	128.1
	Indonesia	79.7	m	86.0	m	88.9	m	95.9	m	81.4	m	87.8	m	92.7	114.3
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m	73.5	90.5
	South Africa	m	m	m	m	95.1	m	105.4	m	m	m	m	m	90.2	109.3
	G20 average	m	m	m	m	m	m	m	m	m	m	m	m	91.9	110.2

Note: The public expenditure presented in this table includes both public transfers and payments to the non-educational private sector which are attributable to educational institutions, and those to households for living costs, which are not spent in educational institutions. Therefore, the figures presented here (before transfers) exceed those for public spending on institutions found in Indicators C1, C2 and C3. Data on early childhood education (Columns 15 to 26) are available for consultation on line (see StatLink below). See *Definitions and Methodology* sections for more information. Data and more breakdowns available at: http://stats.oecd.org, *Education at a Glance Database*.

1. Primary education includes pre-primary programmes.

2. Data do not cover day care centres and integrated centres for early childhood education.

Source: OECD/UIS/Eurostat (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/nmold3

Indicator C5. How much do tertiary students pay and what public support do they receive?

Highlights

- OECD countries fall into three different groups when it comes to tuition fees and direct financial support to tertiary students: no tuition fees and high financial support to students, high tuition fees and high financial support, and low or moderate tuition fees and targeted financial support for a smaller share of students.
- The level of tuition fees charged by institutions for a master's programme sometimes reflects labour-market opportunities. Average tuition fees charged by public institutions are higher for a master's degree than for a bachelor's degree in 16 out of the 25 OECD countries and other participants with data.
- Annual fees charged by public institutions for master's programmes in education; arts and humanities; and natural sciences, mathematics and statistics are among the lowest of all fields of study in most countries.
- Independent private institutions are less affected by government regulation and have often more freedom to set tuition fees. As a result, they charge higher annual tuition fees than public institutions for master's programmes in all OECD countries, except in Chile and Lithuania.

Context

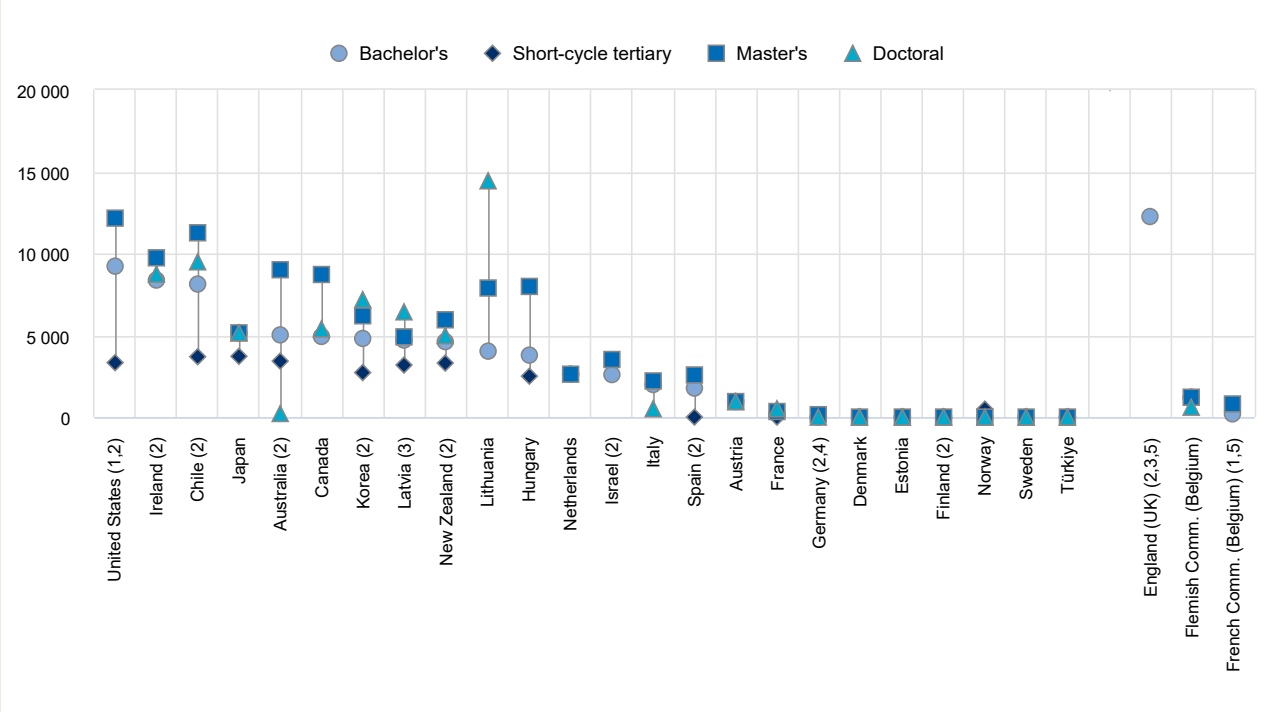
OECD and partner countries have different approaches to providing financial support to students and to sharing the costs of tertiary education among governments, students and their families, and other private entities.

Tuition fees help bridge the gap between the costs incurred by tertiary educational institutions and the revenue they receive from sources other than students and their families. Many factors may influence the costs, including teachers' and researchers' salaries, the development of digital learning and non-teaching services, changes in demand for tertiary education, investments to support internationalisation, and the amount and type of research activities undertaken by faculty and staff. Tertiary institutions may partly cover their costs through internal resources (endowments and research grant funding) or revenue from private sources other than students and their families (see Indicator C3). The remainder is covered by students' tuition fees and public sources.

Public support to students and their families can be a way to encourage participation in education, while also indirectly funding tertiary institutions. Channelling funding to institutions through students may also help to increase competition among institutions and encourage them to better respond to student needs. Support for students comes in many forms, including means-based subsidies, family allowances for students, tax allowances for students or their parents, and other household transfers. Governments strive to strike the right balance between these different subsidies, especially in periods of strained public budgets. For some types of subsidies, public support such as tax reductions may provide less support for low-income students than means-tested subsidies, as tax reductions are not targeted specifically at low-income students. However, such measures may still help to reduce the financial disparities between households with and without children in tertiary education.

Figure C5.1. Annual average tuition fees charged by public institutions to national students, by level of education (academic year 2019/20)

In USD converted using PPPs



1. Doctoral programmes combined with master's programmes.
2. Reference year: calendar year 2018 for Australia and Germany, 2019 for Chile, Israel, Korea and New Zealand; academic year 2018/19 for England (UK), Spain and the United States, 2020/21 for Finland and Ireland.
3. Government-dependent private institutions instead of public institutions.
4. Including bachelor's and doctoral programmes.
5. Short-cycle tertiary programmes combined with bachelor's programmes.

OECD countries and other participants are ranked in descending order of the amount of tuition fees charged to national students enrolled in bachelor's programmes.

Source: OECD (2022), Table C5.1. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

StatLink https://stat.link/q8r052

Other findings

- OECD governments support students' living or educational costs through various combinations of loans, grants or scholarships. In most countries with no tuition fees at the bachelor's level, students tend to receive financial support for living expenses in the form of both loans and scholarships or grants. In countries with low or moderate tuition fees, less than half of students receive financial support, and those who do mainly receive it only in the form of grants or scholarships. There is more variation among countries with high tuition fees, but one common pattern is that students tend to rely to some extent on income-contingent loans.
- Means-tested grants, awarded on the basis of financial need, are the most common type of grant and are in use in more than two-thirds of the countries with available data. About half offer merit-based scholarships (i.e. awarded on the basis of academic, athletic, or artistic merit) and more than one-third target scholarships on disadvantaged population groups. These different kinds of grants can operate simultaneously, so 10 of the 26 countries with data award both merit-based and means-tested scholarships.

  Tuition fees are higher for foreign students than for national students in half of the OECD countries. The higher tuition fees charged in some countries for foreign students do not necessarily discourage them from studying abroad. In Australia, Canada, Ireland and New Zealand, international students represent at least 15% of students enrolled in master's programmes, even though foreign students pay some of the highest tuition fees across OECD countries (see indicator B6).

Analysis

Differentiation of annual tuition fees for full-time study

Differentiation by level of study

Entering tertiary education often means costs for students and their families, in terms of tuition fees, foregone earnings and living expenses, although they may also receive financial support to help them afford it. Most national students entering tertiary programmes enrol at bachelor's or equivalent level in OECD countries (see Indicators B1 and B4). Public institutions do not charge tuition fees to national students at this level in one-quarter of countries with data, including Denmark, Estonia (only for programmes taught in Estonian), Finland, Norway, Sweden and Türkiye (Figure C5.1). In a similar number of countries, tuition fees are low or moderate, with an average cost for students of under USD 3 000. In the remaining countries, tuition fees are high or very high and range from about USD 4 000 to over USD 8 000 per year. They exceed USD 12 000 in England (United Kingdom), where there are no public institutions at tertiary level and all students enrol in government-dependent private institutions (Figure C5.1).

Continuing education after upper secondary or post secondary non-tertiary graduation has become the norm for students in most OECD countries. Short-cycle tertiary programmes are also expanding in many OECD countries, as they provide a shorter and cheaper tertiary education and, in a number of countries, a better benefit-to-cost ratio than long-cycle tertiary programmes such as bachelor's and master's programmes (OECD, 2019[1]). Tuition fees for short-cycle tertiary programmes in public institutions are generally lower than for bachelor's programmes. They are free of charge in Denmark, France, Spain, Sweden and Türkiye and amount to less than half the tuition fees for bachelor's programmes in Chile and the United States, where they cost less than USD 3 800 per year. In contrast, tuition fees for short-cycle tertiary programmes in public institutions are the same as for bachelor's programmes in the Flemish Community of Belgium and the Netherlands. In Norway, short-cycle tertiary (ISCED 5) is the only tertiary level where fees are charged, although only 22% of public institutions do so (Figure C5.1).

Continuing tertiary education after a bachelor's degree leads to better labour-market outcomes. Graduates with a master's or doctoral or equivalent degree have better employment opportunities and earnings prospects in most countries (see Indicator A4). Tuition fees are higher for a master's degree than for a bachelor's degree in 16 out of the 25 OECD countries and other participants with data. In the remaining 10 countries, despite the earnings advantage they offer, tuition fees in public institutions for full-time national students are similar to those for bachelor's programmes. In the 6 countries where tuition is free of charge at bachelor's level, there are also no fees at master's or doctoral levels. Similar tuition fees are also charged on average for bachelor's and master's programmes in Austria, the Flemish Community of Belgium, Japan and the Netherlands. In contrast, tuition fees for master's programmes in public institutions are 25-50% higher than for bachelor's programmes in Chile, France, Israel, Korea, New Zealand, Spain and the United States (data for the United States refer to master's and doctoral programmes combined), while in the French Community of Belgium, Hungary and Lithuania, they are over 95% higher (Table C5.1). In the French Community of Belgium, the tuition fees charged by public institutions are on average higher for a master's degree than for a bachelor's degree, which conceals a differentiation by institution. Indeed, the fees for bachelor's degrees are lower in some institutions ("Hautes Ecoles") while they are identical to those charged for master's degrees in the others institutions. In the other countries, these higher fees may limit participation at this level if they are not combined with financial support to students but are more reflective of the additional labour-market opportunities a master's degree provides in some countries.

Tuition fees for doctoral programmes are even less likely to be higher than bachelor's degrees than they are at master's level. Public institutions charge higher fees for doctoral programmes than bachelor's in only one-quarter of countries: Canada, Chile, France, Ireland, Korea, Latvia (government-dependent private institutions) and Lithuania. Among these countries, Lithuania is the only country where annual tuition for a doctoral programme is more than three times the tuition for a bachelor's programme (Table C5.1).

Lower overall fees at the doctoral level can be explained by the existence of government subsidies for doctoral candidates, aligned to policy objectives to boost research in higher education institutions in some countries. Attracting the best doctoral students from around the world enables countries to take a leading role in research and innovation, and some countries have implemented policies to nurture an attractive research environment for potential students. In a few OECD countries and other participants (e.g. Australia, the Flemish and French Communities of Belgium and Italy), public institutions charge lower fees for doctoral programmes than for bachelor's and master's programmes to promote enrolment in doctoral programmes and attract talent for research and innovation. In Australia, for example, the average annual tuition fees in public institutions for

doctoral programmes are about 25 times lower than for bachelor's programmes (about USD 200 compared to USD 5 000). In fact, very few national doctoral students are charged any fees in Australia (less than 5% of doctoral students in public institutions). Other countries recognise doctoral candidates as employees rather than students, such as in Norway (Table C5.1).

Trends in tuition fees

In about one-third of the OECD countries and other participants with available data, tuition fees for master's degrees charged by public institutions for national students have increased by at least 19% over the past decade, in real terms. This is the case in Australia, the Flemish Community of Belgium, Canada, New Zealand and the United States. The largest increase has been in the Flemish Community of Belgium, where tuition fees have increased in real terms by 64% since 2009/10. In contrast, tuition fees for master's programmes in public institutions fell in real terms during this period in Austria, the French Community of Belgium, France, Germany, Ireland and Latvia (for government-dependent private institutions). Among the countries with data that did not charge any tuition fees (Denmark, Finland, Norway and Sweden), the position has not changed for national students, but Finland and Sweden introduced tuition fees for foreign students over this period. In Chile, the Netherlands and Spain, tuition fees have remained fairly stable and have not increased in real terms by more than 15% between school years 2009/10 and 2019/20 (Table C5.1).

Differentiation by type of institution

Over the decades, independent private institutions have developed to meet increased demand for tertiary education. On average, about one-quarter of students are enrolled in independent private institutions, but this figure hides large differences between countries. In half of OECD countries and other participants with available data, less than 15% of all tertiary students are enrolled in independent private institutions. In contrast, in three OECD countries – Chile, Japan and Korea – the majority of students are enrolled in independent private institutions. In addition, in England (United Kingdom) and Latvia, the great majority of students are enrolled in government-dependent private institutions (Table C5.1).

In general, independent private institutions are less affected by government regulation and less reliant on public funds than public institutions, and often have more freedom to set higher tuition fees. As a result, independent private institutions charge higher annual tuition fees than public institutions for master's programmes in all OECD countries and other participants with available data, except in Chile and Lithuania (Table C5.1 and Box C5.2). In figures, in over one-third of OECD countries and other participants with available data, tuition fees for master's or equivalent programmes are at least twice as high in independent private institutions than in public ones. Their tuition fees are over four times higher in Italy and Spain; more than two times higher in Israel and the United States; and less than twice as high in Australia, Hungary, Japan, Korea, Latvia and New Zealand. In Estonia and Germany, public institutions charge no or low tuition fees for a master's degrees (in Estonia only for programmes taught in Estonian), while private institutions charge more than USD 5 200 in Germany and independent private institutions more than USD 11 100 in Estonia (Table C5.1).

Differentiation between national and foreign students

Tuition fee policies generally cover all students studying in a country's educational institutions, including foreign students, (see *Definitions* section). Education levels have risen considerably over the last two decades, leading more and more students to enter tertiary education each year. This has led institutions in some countries to seek additional resources to guarantee the same quality of teaching. Many countries allow institutions to charge different tuition fees for particular programmes or groups of students, including foreign students, in an effort to strike a balance between public and private sources for tertiary funding. Within the European Union (EU) and the European Economic Area (EEA), countries charge students from other EU and EEA countries the same tuition fees as they do national students.

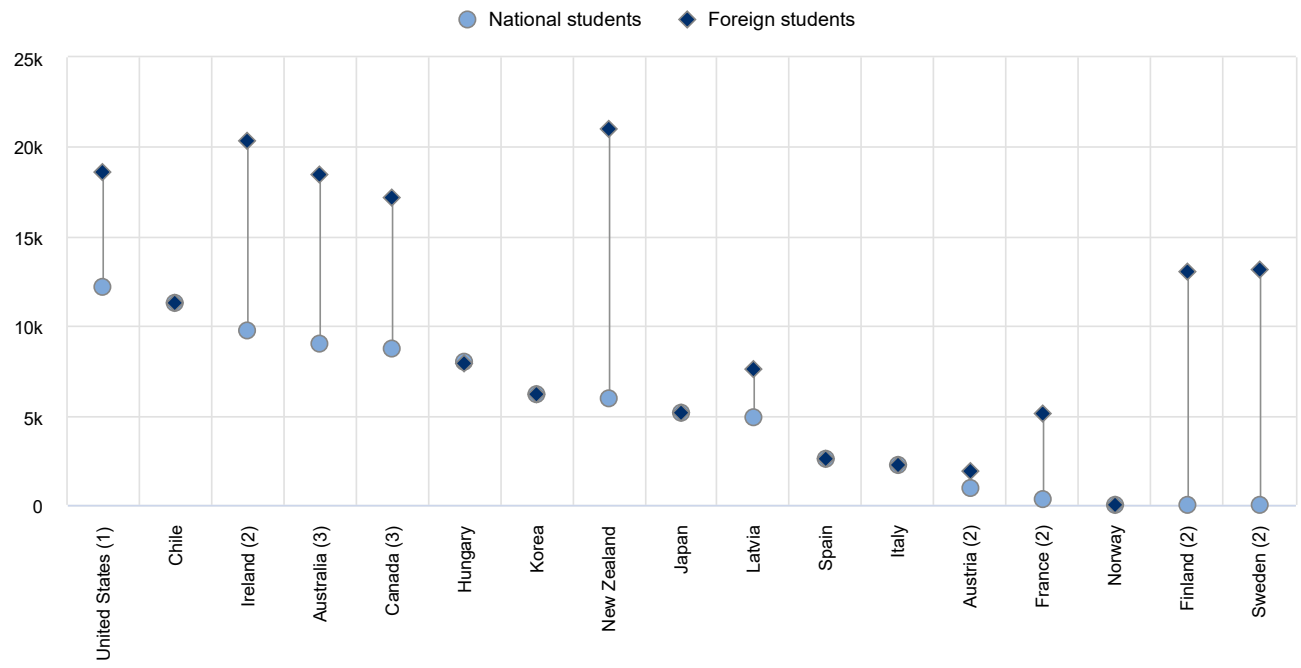
As a result, in over half of the 17 countries with available data, tuition fees are higher for foreign students than for national students, contributing significantly to the funding of tertiary educational institutions. In some of these countries, this difference can be significant. For instance, in Australia, Canada, Ireland, New Zealand and the United States, public institutions charge foreign master's students (non-EU/EEA in Ireland) on average over USD 6 000 more per year than national ones. In the United States, tuition fees for foreign students also include tuition fees for out-of-state national students, which are equivalent. In Finland and Sweden, students from outside the EU/EEA are charged about USD 13 000 per year for master's programmes in public institutions, while no tuition fees are applied to national (or EU/EEA) students. In France the difference is USD 4 800 more and in Latvia (for government-dependent private institutions) it is USD 2 700 more, while the difference is less than

USD 1 000 in Austria and Hungary. In the other countries – Chile, Hungary, Italy, Japan, Korea and Spain – public institutions charge national and foreign students enrolled in master's programmes similar tuition fees, while no tuition fees are applied to either national or foreign students in Norway (Table C5.1 and Figure C5.2).

Higher fees for foreign students can also affect international student flows (see Indicator B6), among other factors (OECD, 2017[2]). However, the data show that the higher tuition fees charged in some countries for foreign students do not necessarily discourage them from studying abroad. For example, in Australia, Canada, Ireland and New Zealand, international students represent at least 15% of students enrolled in master's programmes, compared to an average of only 13% in OECD countries, even though tuition fees for foreign students are among the highest across OECD countries (see Indicator B6 and Figure C5.2). Tertiary education in countries with higher fees for foreign students can still be attractive because of the quality and prestige of their educational institutions, the language spoken in the country, and the expected labour-market opportunities in the country after graduation, but also if, as observed in few countries, additional grants and scholarships are offered to foreign students from disadvantaged social backgrounds.

Figure C5.2. Annual average tuition fees charged by public institutions to national and foreign students for master's or equivalent programmes (2019/20)

In USD converted using PPPs



Note: Reference year: calendar year 2018 for Australia; 2019 for Chile and New Zealand; academic year 2018/19 for Spain and the United States; 2020/21 for Finland and Ireland.
1. Master's programmes includes doctoral programmes. Tuition fees for foreign students typically refer to tuition fees for out-of-state national students. However, in a minority of institutions, tuition fees can be lower for out-of-state national students.
2. Within the EU and the EEA, countries charge the same tuition fees to nationals and students from other EU and EEA countries.
3. Fees are differentiated for national, out-of-state and foreign students.
Countries are ranked in descending order of the annual average tuition fees charged by public institutions to national students.
Source: OECD (2022), Table C5.1. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

StatLink https://stat.link/pgeo1x

Variations within countries for degrees awarded at the same level

There are several reasons why tuition fees vary within countries, including whether institutions have autonomy to set their fees (either fully or within some limits), differences between fields of study (Box C5.1) or the fact that some programmes are cheaper to provide than others (e.g. law degrees are cheaper to provide than medical degrees). It explains why tuition fees vary not only across countries and educational levels, but also within countries for a given level of education. For instance, in the Netherlands, tuition fees are set by the government, but a few institutions may charge higher fees, up to five times the tuition set by the government. These fees are only allowed for certain programmes that meet specific requirements regarding small-scale and intensive education. As a result, annual average tuition fees for national students enrolled at master's level in public institutions are around USD 2 600, but range from half of this amount to five times more (nearly USD 13 100), depending on the education provider (Table C5.1).

There is no clear pattern to the range of tuition fees charged for master's programmes among the countries with the highest average tuition fees. For instance, among the countries charging high average tuition fees for a master's programme (above USD 4 000), the maximum fee charged is 3-5 times the average in Ireland, Lithuania and New Zealand. In Australia and Hungary the highest fees are 2-3 times the average, while in Korea and the United States, the maximum fee charged is only 18-70% higher than the average tuition fee for national students enrolled in master's programmes (Table C5.1)

The range of tuition fees is also wide in a few OECD countries and other participants with low or moderate average fees, such as France, Italy, the Netherlands and Spain. Tuition fees can exceed USD 3 300 in France, USD 4 000 in Italy, USD 13 000 in the Netherlands, and USD 20 000 in Spain, although the highest tuition fees in these countries only apply to a small number of students. In contrast, the range is relatively small in the Flemish and French Communities of Belgium, Israel (Table C5.1).

Tuition fee waivers are another reason why tuition fees vary within countries and why the fees paid by students might differ from those charged by institutions. When students receive a waiver, even though the tuition fee charged by an institution does not itself change, the fees paid are lower as the fee waiver is deducted. Compared to scholarships, which offer direct financial support to students, a tuition waiver is often granted by an educational institution and indirectly financed by the public sector to the educational institution or by the institution's own resources, depending on the institution type and the type of waiver granted. Waivers can eliminate the cost of tuition for a designated number of credit hours, but cannot be used for any other educational expense. In a number of countries with available data (e.g. Belgium, Chile, France, Italy and Spain), between 19% and 38% of students enrolled at master's level in public institutions, particularly students from low-income backgrounds, were benefiting from a scholarship or a tuition fee waiver in 2019/20 (Table C5.2).

Box C5.1. Fees by fields of study

OECD countries often charge different tuition fees by field of study in order to attract students to fields that are less in demand and to account for differences in costs and labour-market opportunities. These factors are the main reasons for introducing differentiated fees, although in some countries differences in tuition fees between fields of study may result from differences in tuition fees and enrolment across institutions rather than differences within institutions. For instance, in Australia, Hungary and New Zealand, fees are set by individual institutions, and broadly reflect cost-based differences while in Chile, both the relevance of the different qualifications to the labour market and the public cost of the programme are taken into account when setting the fees.

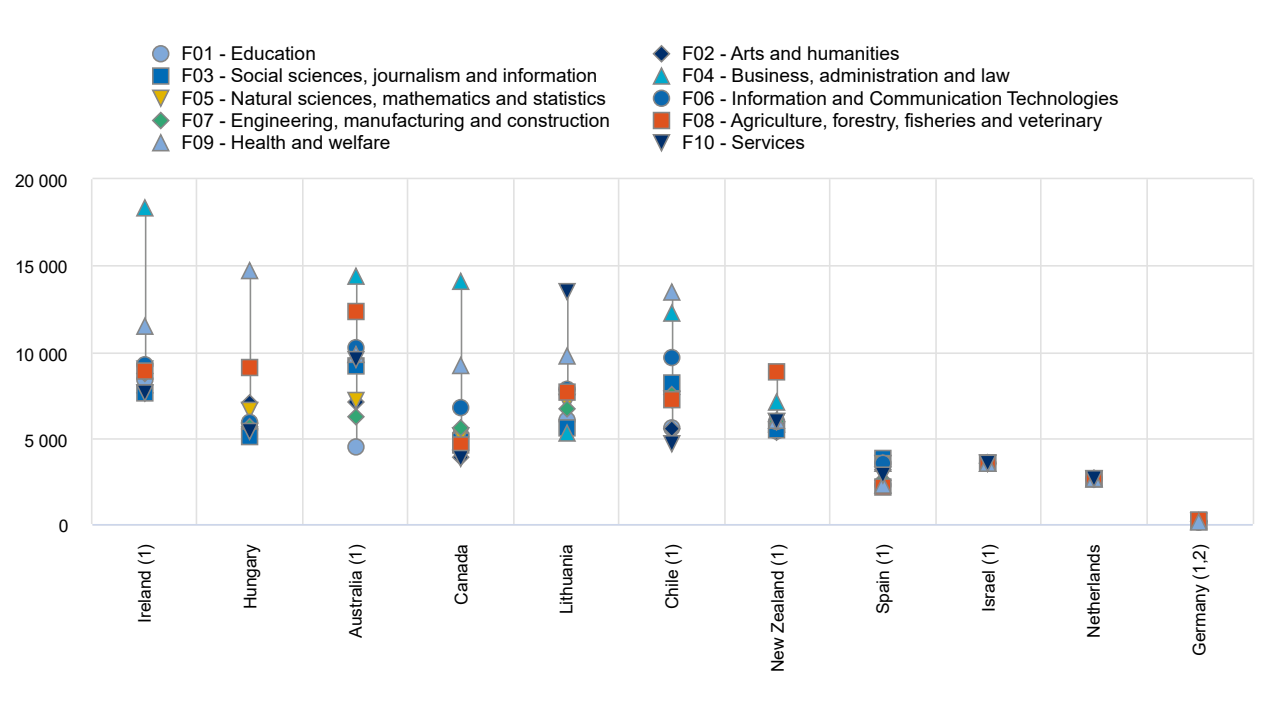
Among countries with available data, Australia, Canada, Hungary and Ireland have the largest range of tuition fees charged by public institutions to national students enrolled in master's or equivalent programmes across fields of study. In Ireland, which has the widest differences, public institutions charge over USD 18 000 per year on average for master's programmes in the broad field of business, administration and law but just over USD 7 600 per year for programmes in the field of arts and humanities (Figure C5.3).

Fees charged by public institutions for master's programmes in education; arts and humanities; and natural sciences, mathematics and statistics are among the lowest of all fields of study in most countries. These are the fields of study where graduates' labour-market wages are often lower than in other fields (OECD, 2021[3]). In contrast, fields such as health and welfare and business, administration and law are among the most expensive in many countries, as some of these programmes may have the highest market returns but more likely because of the (perceived or actual) cost of provision of education. Despite these trends, there are differences between countries in fees for the same fields of study. For example, while business, administration and law has the highest annual fees in Australia, Canada and Ireland, it is the cheapest of

all fields of study in Lithuania. Similarly, while a year of study in agriculture, forestry, fisheries and veterinary care is the cheapest of the fields in Spain, it is the most expensive in New Zealand. These differences can be partly explained by structural differences between the economies of the countries but also by the value of qualifications on the labour market which varies from one country to another (Figure C5.3).

Figure C5.3. Tuition fees charged by tertiary institutions to national students enrolled full-time in master's or equivalent programmes, by fields of study (2019/20)

In USD converted using PPPs



1. Reference year: calendar year 2018 for Australia and Germany, 2019 for Chile, Israel and New Zealand; academic year 2018/19 for Spain; 2020/21 for Ireland.
2. Including bachelor's and doctoral programmes.
Countries are ranked in descending order of the fields in which the highest average annual tuition fees are charged.
Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

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Approaches to public financial support to tertiary national students

Country approaches to financial support for tertiary students

Broadening access to higher education has been a public policy objective for decades, but the fiscal tools used to achieve higher tertiary attainment are quite diverse. Across different countries and economies, higher levels of educational attainment can be found where there are both high and low levels of fees (Cattaneo et al., 2020[4]).

OECD countries have different approaches to providing financial support to students enrolled in tertiary education. Regardless of the level of tuition fees, OECD countries and other participants can be categorised according to the level of public financial support available to tertiary students. In Australia, Denmark, England (United Kingdom), New Zealand, Sweden and the United States, at least 80% of national students receive in 2019/20 public financial support in the form of student loans, scholarships or grants, while this share is between 55% and 61% in Chile, Finland, Lithuania and Norway. Between 34% and 44% of students receive public financial support in France, Italy and Spain, while no more than 25% of students do so in

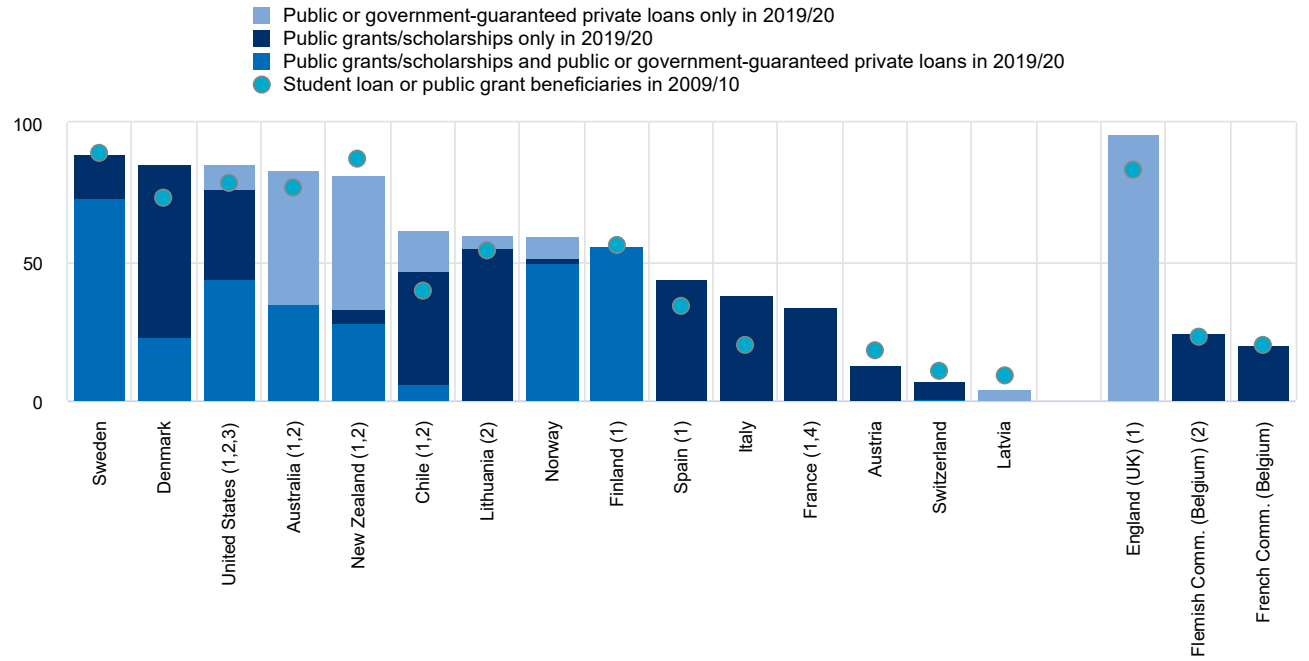
Austria, the Flemish and French Communities of Belgium and Switzerland (Figure C5.4). In these countries and economies, public financial support targets selected groups of students, such as those from socio-economically disadvantaged families.

In the last decade, the share of students receiving public financial support in tertiary education has increased by at least 10 percentage points in Chile, Denmark, England (United Kingdom), Italy and Spain; the largest increases were in Chile (by 22 percentage points). This share has remained stable in all other OECD countries with available data, changing by at most 7 percentage points. The largest decrease in the share of students receiving financial support in tertiary education was observed in New Zealand (Figure C5.4).

When comparing tertiary student financial support systems with the level of tuition fees charged to national students, three groups of OECD countries and other participants clearly stand out: those with low or no tuition fees and high financial support to students (Denmark, Finland and Sweden); those with high tuition fees and high financial support to students (Australia, Chile, England [United Kingdom], Lithuania, New Zealand and the United States); and those with low or moderate tuition fees and targeted financial support received by less than 50% of tertiary students (Austria, the Flemish and French Communities of Belgium, France, Italy, and Spain) (Table C5.1 and Table C5.2).

Figure C5.4. Share of national tertiary education students enrolled full-time and receiving public financial support (2009/10 and 2019/20)

In per cent



1. Reference year: calendar year 2018 for Australia; 2019 for Chile and New Zealand; academic year 2015/16 for the United States; academic year 2018/19 for England (UK); France and Spain.
2. Reference year for trends: calendar year 2008 for Australia; 2009 for New Zealand; 2010 for Chile; academic year 2007/08 for the United States; academic year 2008/09 for the Flemish Community of Belgium; calendar year 2014 for Lithuania.
3 The distribution of loans refers to ISCED 5 and 6 only.
4. Students who benefit of government-guaranteed private loans are not taken into account, but their number is negligible.
OECD countries and other participants are ranked in descending order of the share of tertiary students receiving public grants/ scholarships and/or public or government-guaranteed private loans in 2019/20.
Source: OECD (2022), Table C5.2. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

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Forms of public financial support to tertiary national students

What type of financial support is offered to tertiary students – whether in the form of loans, or of grants or scholarships – is a key question faced by many educational systems. On the one hand, advocates of student loans argue that they allow a larger number of students to benefit from the available resources. If the funding spent on scholarships and grants was used to guarantee and subsidise loans, the same public resources could support a larger number of students, and overall access to higher education would increase (OECD, 2014[5]). Loans also shift some of the cost of higher education to those who benefit from it the most – the individual students – reflecting the high private returns of completing tertiary education (see Indicator A5). On the other hand, student loans are less effective than grants at encouraging low-income students to access tertiary education. In addition, opponents of loans argue that high levels of student debt at graduation may have adverse effects on both students and governments if large numbers of students are unable to repay their loans (OECD, 2014[5]). A large share of indebted graduates could be a problem if their employment prospects are not sufficient to guarantee their student loan repayments.

OECD governments support national students' living and education costs through different combinations of these two types of support – and the combinations vary even among countries with similar levels of tuition fees. The cross-country variation is significant, for instance, among countries with high annual average tuition fees for bachelor's and master's degrees in public institutions (around USD 4 000 and over). In England (United Kingdom), more than 90% of students only receive loans (rather than scholarships or grants) to cover the cost of tertiary studies. In the United States, 44% of students benefit from both loans and scholarships or grants, 33% from scholarships/grants alone and 9% from loans alone. In Australia and New Zealand, most students receive either loans alone or both loans and scholarships or grants (Figure C5.4).

In countries with available data where public institutions charge no tuition fees at the bachelor's and master's level, most national students receive financial support in the form of both loans and scholarships or grants, in order to cover their living costs. This is true for at least 50% of students in Finland, Norway and Sweden. In contrast, in Denmark, most students receive financial support in the form of scholarships or grants alone (62%), and only 23% receive both loans and scholarships or grants (Table C5.2).

Finally, in OECD countries and other participants such as Austria, the French Community of Belgium, France, Italy, Spain and Switzerland, where annual average tuition fees for tertiary are below USD 3 000, less than 45% of students receive any form of financial support – and those who do tend to receive it only in the form of grants or scholarships (Table C5.2).

The amount of money received or borrowed also varies substantially across countries. Among OECD countries and other participants with data available, the average amount of public or government-guaranteed private loans that tertiary students borrow each year ranges from USD 2 900 per student in Latvia to over USD 11 900 in England (United Kingdom) and Norway (where tuition is free of charge and loans finance students' living costs). Scholarships or grants received by students range from USD 1 500 per year in the French Community of Belgium to over USD 7 000 in Australia, Austria, Denmark, Italy, New Zealand and Switzerland. However, these figures should be interpreted with some caution as they cover different reference years among countries (Table C5.2 and Table C5.3).

Interestingly, the average amount of scholarships or grants received by tertiary students exceeds the average tuition fees charged by public institutions in 60% of the countries for which data are available. In these countries, scholarships and grants are generous and can also fund students' living expenses. In the remaining eight countries, the amount received is insufficient to cover the annual tuition fee charged for a master's programme. For example, they cover 18% of the average annual master's fee in the United States, 40-65% in Canada, Chile, Latvia and Lithuania, and 70-80% in Australia and Japan. In these countries, students who receive scholarships or grants may also need to borrow money in the form of student loans to finance their studies if they do not have the financial capacity to pay by themselves (Table C5.2 and Table C5.3).

Eligibility criteria for public support

Eligibility criteria for public grants or scholarships also differ from country to country. Means-tested grants, awarded on the basis of financial need, are the most common system and are in place in more than two-thirds of the countries for which data are available, although about half of countries offer merit-based scholarships (i.e. awarded on the basis of academic, athletic, or artistic merit) and more than one-third of them target scholarships based on the socio-economic status of students' families. Scholarships can operate simultaneously, so 10 of the 26 countries with data award both merit-based and means-tested scholarships. In contrast, universal scholarship systems (i.e. available to all new entrants to tertiary education) are rare and

provided in only six countries: four Nordic countries (Denmark, Finland, Norway and Sweden) where no tuition fees are charged, Lithuania and the Netherlands (Table C5.2).

In 2020, students enrolled in part-time programmes and online or blended programmes (i.e. combining both online and campus-based instruction) at tertiary level are also theoretically eligible for scholarships or grants in more than two-thirds of the OECD countries and other participants for which data are available, although at that time blended and fully online programmes were still relatively rare. For example, only England (United Kingdom), France, Ireland, and Lithuania do not provide grants to students enrolled in blended programmes. In a number of countries, responses on online and blended programmes represent data from before the COVID-19 pandemic started. It will be important to monitor these trends in the future as these learning options become more common, in many cases accelerated by the COVID-19 pandemic.

Student loans show greater homogeneity in their eligibility criteria. In all countries with data available, loans can be used for tuition fees, study materials and living costs, except in Chile where loans only cover tuition fees and in Finland and Sweden where they only cover living expenses. Not all students are eligible to apply for student loans (Table C5.3).

Types of loan systems, interest rates, repayments and debt at graduation

Students often benefit from special conditions on their public loans or on private loans guaranteed by the government, for example in interest rates, repayment systems or remission/forgiveness mechanisms (Table C5.3). Governments often introduce these special conditions to reduce the cost of loans to students and, in the case of income-contingent loans, to protect them from the uncertainty of the labour market after graduating. By doing so, governments take on a considerable part of the cost themselves and bear the risk of lending to students, who can then access capital at a below-market cost.

As the structure of interest rates offered to students, for both public and private loans, differs to some extent across countries, cross-country comparisons of interest rates offered on public loans must be treated with caution. Governments use a variety of strategies to reduce the financial burden on students, including reduced interest rates before and/or after the end of studies. Some countries charge no interest at all on loans, while others link the interest rate to indices which are below market rates, such as the cost of government borrowing or an inflation index. In most counties, graduates may incur an interest charge related to the cost of government borrowing or even higher, although interest rates are usually still relatively low (Table C5.3).

There are two main types of student loans: fixed-repayment loans and income-contingent loans. In a fixed-repayment loan system, students are obliged to repay the loan within a fixed period, regardless of their financial situation after their studies. This may impose a heavy financial burden on graduates (or those who did not graduate) with low incomes. In contrast, in income-contingent loan systems, repayment is conditional on the borrower's income reaching a threshold, and includes debt forgiveness after a certain period of time. This type of repayment arrangement is considered to be more equitable, as it takes into account graduates' ability to repay their loan.

Both systems imply some costs for the government that guarantees the loan repayment. However, the potential financial burden for the government is more uncertain with income-contingent loans, as these depend on graduates' ability to find work and earn an income above the minimum threshold for reimbursement.

Several countries have introduced income-contingent loans in recent years. For example, the United Kingdom replaced its fixed-repayment system with an income-contingent loan system in 1999 – and nowadays as much as 53% of student loans are not repaid. With the increase in student debt, some income-contingent loan systems were also introduced in the United States: the income-based repayment programme in 2009 and the Pay-As-You-Earn (PAYE) plan in 2012 (Table C5.3 and (OECD, 2015[6]).

Among the 17 countries and other participants with available data, Australia, Chile, England (United Kingdom), Germany, the Netherlands, and New Zealand have adopted income-contingent loan systems. Japan, Korea and the United States have a hybrid system, which includes both income-contingent and fixed-repayment loans. All of these countries, except the Netherlands, have annual tuition fees for master's programmes that exceed USD 5 000, which in part explains why they have set up a system of aid to students that allows them to continue their studies while limiting the risk entailed in having a debt at the end of their studies that they can never repay. The remaining nine countries have adopted a fixed-repayment loan system. Students face greater pressure, as they have to repay their loans within a fixed period, but the tuition fees in all countries in this group, except Lithuania, are low or non-existent (Table C5.3).

The debt burden that students accumulate is one factor that may affect individuals' decisions to invest in tertiary education. The extent to which debt can be an issue for graduates mostly depends on the amount borrowed and the underlying loan conditions compared to graduates' labour-market prospects, in terms of earnings and uncertainty of employment. Among the

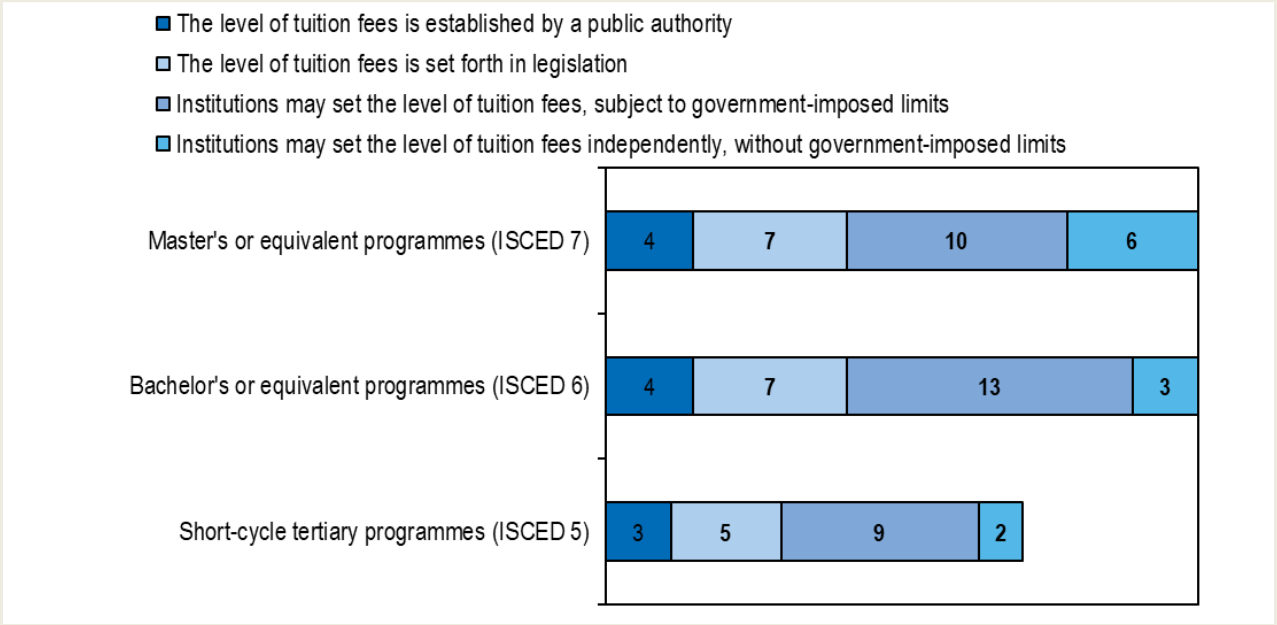
OECD countries and other participants with high tuition fees, at least 70% of students in Australia, England (United Kingdom) and New Zealand are in debt at graduation as a result of taking out loans. However, the average amount of debt at graduation varies significantly, from USD 19 800 in Australia and USD 26 200 in New Zealand to over USD 58 500 in England (United Kingdom). In countries where tertiary studies incur no or low tuition fees, debt at graduation would typically be lower than in countries with high tuition fees, since student loans are mainly only needed to cover students' living expenses. However, in Nordic countries, where there are low or no tuition fees, the level of student debt at graduation may still be high because living expenses are high. This is the case for instance in Norway, where students' average debt amounts to over USD 31 700 (Table C5.3).

Box C5.2. Setting and paying tuition fees

Tuition fees – the money that students pay to higher education institutions for their instruction and other services – are fundamental revenue sources for educational institutions, alongside public spending from governments and other public bodies. The relative shares of public and private contributions for higher education vary widely across countries; in most countries governments assume the majority share of the education cost, but in other cases governments only subsidise the cost of higher education to a limited extent. However, regardless of how expenditure is apportioned between public and private sources, in a majority of cases across OECD jurisdictions the level of tuition fees set by institutions is subject to government-imposed limits (Figure C5.5).

In most countries, some tuition fees are charged, although the amount varies substantially. In general, institutions have somewhat more freedom to set their own fees at the master's level than for bachelor's or short-cycle tertiary programmes. Institutions also have more freedom to charge fees for specific activities or particular types of programmes. For example, they may be allowed to charge fees for student services or to meet particular administrative costs. Thus, the extent to which students contribute to the costs of higher education provision depends on many factors, which may include their own status, the legal status of the higher education institution they are attending and the type of programme in which they are enrolled.

Figure C5.5. Authority to set tuition fees for national students, by level of tertiary education (2020)



Note: Total jurisdictions responding: 27 for master's and bachelor's programmes, 19 for short-cycle programmes.
Source: OECD Higher Education Policy Survey on Resourcing Higher Education. Working Papers, No. 259, OECD Publishing, Paris, https://doi.org/10.1787/0ac1fbad-en.

StatLink https://stat.link/zvkwfi

Source: Golden, Troy and Weko (2021[7]), "How are higher education systems in OECD countries resourced?", https://doi.org/10.1787/0ac1fbad-en.

Definitions

In this chapter, **national students** are defined as the citizens of a country who are studying within that country. **Foreign students** are those who are not citizens of the country in which the data are collected. While pragmatic and operational, this classification is inappropriate for capturing student mobility because of differing national policies regarding the naturalisation of immigrants. For EU and EEA countries, citizens from other EU countries usually pay the same fees as national students. In these cases, foreign students refer to students who are citizens of countries outside the EU. Further details on these definitions are available in Indicator B6.

Private institutions are those controlled and managed by a non-governmental organisation (e.g. a church, a trade union or business enterprise, foreign or international agency), or whose governing board consists mostly of members not selected by a public agency. **Private institutions** are considered **government-dependent** if they receive more than 50% of their core funding from government agencies or if their teaching personnel are paid by a government agency. **Independent private institutions** receive less than 50% of their core funding from government agencies and their teaching personnel are not paid by a government agency. In the OECD definitions, independent private institutions do not refer exclusively to for-profit institutions, some of then are not-for-profit institutions.Tuition fee amounts refer to **gross tuition fees** charged by institutions, before grants, scholarships and tuition waivers are applied.

Methodology

Tuition fees and loan amounts in national currencies are converted into equivalent USD by dividing the national currency by the purchasing power parity (PPP) index for gross domestic product. The amounts of tuition fees and associated proportions of students should be interpreted with caution, as they represent the weighted averages of the main tertiary programmes and may not cover all educational institutions.

Student loans include the full range of student loans extended or guaranteed by governments, in order to provide information on the level of support received by students. The gross amount of loans provides an appropriate measure of the financial aid to current participants in education. Interest payments and repayments of principal by borrowers should be taken into account when assessing the net cost of student loans to public and private lenders. In most countries, loan repayments do not flow to education authorities, and the money is not available to them to cover other expenditure on education.

OECD indicators take the full amount of scholarships/grants and loans (gross) into account when discussing financial aid to current students. Some OECD countries have difficulty quantifying the amount of loans to students. Therefore, data on student loans should also be treated with caution.

For more information, please see the OECD *Handbook for Internationally Comparative Education Statistics* (OECD, 2018[8]) and Annex 3 for country-specific notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

Source

Data refer to the academic year 2019/20 and are based on a special survey administered by the OECD in 2021 (for details, see Annex 3 at (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

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Indicator C5 tables

Tables Indicator C5. How much do tertiary students pay and what public support do they receive?

Table C5.1	Annual tuition fees charged by tertiary institutions to national and foreign students (2009/10 and 2019/20)
Table C5.2	Variation in public financial support over time and eligibility criteria for public grants or scholarships for tertiary students enrolled in public and private educational institutions (2009/10 and 2019/20)
Table C5.3	Availability, repayment and remission of public and government-guaranteed private loans to full-time and part-time students in tertiary education (2019/20)

StatLink https://stat.link/fmxzvc

Cut-off date for the data: 17 June 2022. Any updates on data can be found on line at: http://dx.doi.org/10.1787/eag-data-en. More breakdowns can also be found at http://stats.oecd.org, *Education at a Glance Database*.

Table C5.1. Annual tuition fees charged by tertiary institutions to national and foreign students (2009/10 and 2019/20)

In equivalent USD converted using PPPs, for full-time students, by type of institution and level of education

			Tuition fees charged for master's programmes							
			Public institutions				Independent private institutions			
		Share of students enrolled in independent private institutions (%)	Average (or most common) tuition fees charged for national students	Minimum tuition fees charged for national students	Maximum tuition fees charged for national students	Average (or most common) tuition fees charged for foreign students	Average (or most common) tuition fees charged for national students	Minimum tuition fees charged for national students	Maximum tuition fees charged for national students	Average (or most common) tuition fees charged for foreign students
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
OECD	**Countries**									
	Australia [1, 2]	22	9 006	2 190	20 239	18 448	12 504	3 465	24 021	12 688
	Austria [2]	21	943	943	943	1 885	m	m	m	m
	Canada	m	8 724	1 528	m	17 165	a	a	a	a
	Chile [1]	71	11 274	4 872	16 364	11 274	10 923	2 794	19 582	10 923
	Denmark	0	0	0	0	m	a	a	a	a
	Estonia [1, 3]	8	0	0	m	m	11 137	m	m	m
	Finland [1, 4]	48	0	0	0	13 018	0	0	0	11 835
	France	22	329	m	3 384	5 104	m	m	m	m
	Germany [1, 2]	7	148 [d]	m	m	m	5 195 [d]	m	m	m
	Hungary	5	7 990	2 067	19 981	7 905	10 503	1 102	25 548	16 061
	Ireland [1]	3	9 736	7 614	43 312	20 346	m	m	m	m
	Israel [1]	12	3 519	3 519	3 519	m	9 507	3 026	15 270	m
	Italy	15	2 221	295	4 081	2 221	9 057	2 853	18 441	9 057
	Japan	78	5 139	m	m	5 139	7 781	m	m	7 781
	Korea [1]	80	6 185	2 024	10 483	6 185	11 559	4 164	53 954	11 559
	Latvia [5]	24	4 898	2 130	11 847	7 586	5 684	2 588	12 942	6 564
	Lithuania	10	7 893	882	29 543	m	5 074	242	35 705	m
	Netherlands	m	2 622	1 310	13 110	m	m	m	m	m
	New Zealand [1, 4]	10	5 951	1 400	19 044	21 005	6 091	4 341	9 662	14 633
	Norway	10	0	0	0	0	m	m	m	m
	Spain [1]	20	2 581	935	21 368	2 581	11 674	m	m	11 674
	Sweden [4]	10	0	0	0	13 148	0	0	0	13 148
	Türkiye	8	0	0	0	m	0	0	0	m
	United States [1, 6]	26	12 171 [d]	8 875	14 331	18 597	25 929 [d]	12 806	39 176	25 929
	Other participants									
	Flemish Comm. (Belgium) [7]	0	1 224	144	1 224	m	a	a	a	a
	French Comm. (Belgium)	0	798 [d]	0	1 091	m	a	a	a	a
	England (UK) [1, 5]	a	m	m	m	m	m	m	m	m

		Tuition fees, converted in USD using PPPs						Index of change between 2009/10 and 2019/20 (2009/10 = 100) for national students	
		Public institutions			Independent private institutions			Public institutions	
		Short-cycle tertiary	Bachelor's	Doctoral	Short-cycle tertiary	Bachelor's	Doctoral	Bachelor's	Master's
		(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
OECD	**Countries**								
	Australia [1, 2]	3 433	5 031	208	7 367	9 239	1 625	106	132
	Austria [2]	m	943	943	m	m	m	84	84
	Canada	m	4 924	5 390	m	a	a	109	130
	Chile [1]	3 682	8 131	9 490	4 045	7 203	8 485	116	109
	Denmark	0	0	0	m	m	a	a	a
	Estonia [1, 3]	0	0	0	a	9 281	11 137	m	m
	Finland [1, 4]	a	0	0	a	0	a	a	a
	France	0	230	514	m	m	m	91	96
	Germany [1, 2]	m	x(2)	x(2)	m	x(6)	x(6)	x(18)	20[d]
	Hungary	2 507	3 783	a	2 681	4 228	m	m	m
	Ireland [1]	m	8 363	8 737	m	m	m	87	87
	Israel [1]	m	2 604	a	a	8 516	a	m	m
	Italy	a	1 985	515	m	7 237	2 710	129	m
	Japan	3 717	5 144	5 139	6 743	8 741	5 786	m	m
	Korea [1]	2 710	4 814	7 172	6 951	8 621	12 568	87	m
	Latvia [5]	3 186	4 715	6 421	3 186	5 185	6 595	94	91
	Lithuania	a	4 020	14 441	a	3 747	12 248	m	m
	Netherlands	2 622	2 622	a	m	m	m	114	114
	New Zealand [1, 4]	3 291	4 621	4 971	4 691	4 411	a	120	120
	Norway	483	0	0	a	5 620	0	m	m
	Spain [1]	0	1 768	m	m	10 344	m	144	106
	Sweden [4]	0	0	0	0	0	0	a	a
	Türkiye	0	0	0	0	0	0	a	a
	United States [1, 6]	3 313	9 212	x(2)	15 727	31 875	x(6)	118	120
	Other participants								
	Flemish Comm. (Belgium) [7]	1 224	1 224	613	a	a	a	164	164
	French Comm. (Belgium)	x(12)	189[d]	x(2)	a	a	a	73	91
	England (UK) [1, 5]	x(12)	12 255[d]	m	m	m	m	337	a

Note: See Definitions and Methodology sections for more information.
1. Reference year: calendar year 2018 for Australia and Germany; 2019 for Chile, Israel, Korea and New Zealand; academic year 2018/19 for England (UK), Estonia, Spain and the United States; 2020/21 for Finland and Ireland.
2. Government-dependent and independent private institutions are combined.
3. No tuition fees for full-time students enrolled in public institutions in programmes with curricula in Estonian. Differentiation for foreign students is based on the language of programmes' curricula.
4. Government-dependent private institutions instead of independent private institutions.
5. Government-dependent private institutions instead of public institutions.
6. Master's programmes includes doctoral programmes. Tuition fees for foreign students typically refer to tuition fees for out-of-state national students. However, in a minority of institutions, tuition fees can be lower for out-of-state national students.
7. Public and government-dependent private institutions combined.
Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/p3hnzd

Table C5.2. Variation in public financial support over time and eligibility criteria for public grants or scholarships for national tertiary students enrolled in public and private educational institutions (2009/10 and 2019/20)

		Share of students benefiting in 2019/20 from tuition fee waivers (public institutions only)				2019/20 distribution of tertiary students receiving				Share of tertiary students receiving public grants/ scholarships and/or public or government-guaranteed private loans in 2009/10	Average annual amount of public grants/ scholarships in 2019/20, in USD converted using PPPs	Types of scholarships/ grants awarded				Eligibility for a public grant/scholarship		
		ISCED 5	ISCED 6	ISCED 7	ISCED 8	Public or government-guaranteed private loans only	Public grants/scholarships only	Public grants/scholarships and public or government-guaranteed private loans	Neither public grants/scholarships nor public / government-guaranteed private loans			Universal	Means-tested	Merit-based	Targeted on disadvantaged population groups	Students enrolled part time	Students enrolled exclusively on line	Students enrolled in blended learning
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
OECD	**Countries**																	
	Australia [1, 2]	m	m	m	m	48	0	35	17	77	7 112	no	yes	yes	no	yes	yes	yes
	Austria	m	m	m	m	a	13	a	87	18	8 058	no	yes	yes	no	yes	yes	a
	Canada	m	m	m	m	m	m	m	30	m	4 677	no	yes	yes	yes	yes	yes	yes
	Chile [1, 2]	69	64	22	0	14	41	6	39	39	5 489	no	yes	yes	yes	yes	no	yes
	Denmark	a	a	a	a	0	62	23	14	73	7 998	yes	no	no	yes	no	yes	yes
	Estonia [1]	m	m	m	m	m	m	m	m	m	m	no	yes	yes	yes	no	yes	yes
	Finland	a	a	a	a	x(7)	x(7)	55[d]	45	56	2 155	yes	no	no	no	no	yes	yes
	France [1]	76	42	31	a	m	34	m	66	m	2 589	no	yes	no	no	no	yes	no
	Germany [1, 2, 3]	m	m	m	m	m	m	22	m	26	4 193	no	yes	no	no	yes	yes	yes
	Hungary	m	m	m	m	m	m	m	m	m	m	no	no	yes	no	yes	no	yes
	Ireland [1]	m	m	m	m	m	m	m	m	m	m	no	yes	no	no	no	no	no
	Italy	a	39	38	84	0	38	0	62	20	7 039	no	no	yes	yes	yes	yes	yes
	Japan	m	m	m	m	m	m	m	m	m	3 637	no	yes	yes	no	yes	yes	yes
	Korea [1, 2]	m	m	m	m	m	m	m	m	m	3 746	no	yes	yes	yes	no	yes	yes
	Latvia [4]	a	a	a	a	4	a	a	96	9	1 983	no	no	yes	no	no	no	yes
	Lithuania [2]	m	m	m	m	5	55	0	40	54	5 025	yes	no	no	yes	yes	no	no
	Netherlands	0	0	0	a	m	m	m	m	m	4 516	yes	yes	no	yes	no	yes	yes
	New Zealand [1, 2]	19	22	0	0	48	5	28	19	87	7 086	no	yes	yes	no	no	yes	yes
	Norway	a	a	a	a	8	2	50	41	a	4 503	yes	yes	no	no	yes	yes	yes
	Spain [1]	78	53	24	m	a	44	0	56	34	m	no	yes	yes	no	yes	yes	yes
	Sweden	a	a	a	a	0	16	73	11	89	3 215	yes	no	no	no	yes	yes	yes
	Switzerland	m	m	m	m	0	6	1	93	11	7 475	no	no	no	no	yes	yes	yes
	United States [1, 2, 5]	a	a	a	m	9	33	44	15	78	2 178	m	yes	yes	yes	yes	yes	yes
	Other participants																	
	Flemish Comm. (Belgium) [2]	m	m	m	m	0	24	0	76	23	2 472	no	yes	no	no	yes	yes	yes
	French Comm. (Belgium)	x(2)	25d	19d	x(3)	0	20	0	80	20	1 503	no	yes	no	no	no	no	yes
	England (UK) [1, 4]	a	a	a	a	96	0	0	4	83	m	no	yes	no	yes	yes	no	no

Note: See Definitions and Methodology sections for more information.
1. Reference year: calendar year 2018 for Australia, 2019 for Chile, Korea and New Zealand; academic year 2015/16 for Germany and the United States; academic year 2018/19 for England (UK), Estonia, France and Spain; 2020/21 for Ireland.
2. Reference year for trends: calendar year 2008 for Australia and Germany; 2009 for Korea and New Zealand; 2010 for Chile; academic year 2007/08 for the United States; academic year 2008/09 for the Flemish Community of Belgium; calendar year 2014 for Lithuania.
3. Data do not refer to students receiving public financial support (BAföG) but to those eligible to apply for it.
4. Government-dependent private institutions instead of public institutions.
5. The distribution of loans refers to ISCED 5 and 6 only.
Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

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Table C5.3. Availability, repayment and remission of public and government-guaranteed private loans to full-time and part-time national students in tertiary education (2019/20)

		Loan availability				Debt at graduation from tertiary education	
		Share of national tertiary students who benefit from a loan	Average annual gross amount of loan (in USD) borrowed by each national student	Conditions on the use of student loans	Interest rate after studies	Share of graduates with debt (%)	Average amount of debt at graduation (in USD)
		(1)	(2)	(3)	(4)	(5)	(6)
OECD	**Countries**						
	Australia	83	3 925	Both tuition fees and living expenses	1.8%	82	19 819
	Canada	m	5 397	Both tuition fees and living expenses	From 0 to 5.95%	62	17 874
	Chile	21	5 043	Tuition fees only	2.0%	m	m
	Denmark	23	4 361	Both tuition fees and living expenses	1.0%	46	16 998
	Estonia [1]	m	4 596	Both tuition fees and living expenses	5.0%	m	m
	Finland	55	6 563	Living expenses only	Interest rates agreed with private banks	64	16 884
	Germany [2]	22	4 193	Both tuition fees and living expenses	0.0%	m	m
	Japan [3]	m	7 336	Both tuition fees and living expenses	Category 1 Loans (interest-free): 0% Category 2 Loans (interest-bearing): maximum of 3%, rest paid by Government	m	Category 1 Loans (interest-free): 23 105 Category 2 Loans (interest-bearing): 32 884
	Korea [1]	m	5 153	Both tuition fees and living expenses	2,2%	m	m
	Latvia [1]	4	2 882	Both tuition fees and living expenses	6 months EURIBOR + 2.5%		
	Lithuania [1]	5	3 989	Both tuition fees and living expenses	2.1%	4	m
	Netherlands	m	9 334	Both tuition fees and living expenses	0.0%	72	m
	New Zealand	76	8 340	Both tuition fees and living expenses	0% interest rate if New Zealand-based, 4.0% otherwise	72	26 232
	Norway	58	11 862	Both tuition fees and living expenses	2.2%	m	31 747
	Poland	m	m	Both tuition fees and living expenses	0.055% (half the rediscount rate on bills of exchange of the National Bank of Poland)	Max 2%	m
	Sweden	73	7 568	Living expenses only	0.2%	72	m
	Switzerland	1	5 946	Both tuition fees and living expenses	m	m	m
	United States [4]	52	4 600	Both tuition fees and living expenses	2.75% to 5.30%	66	26 500
	Other participant						
	England (UK) [1, 5]	96	18 169	Both tuition fees and living expenses	2.4% to 5.4%	94	58 571

		Repayment				Remission	
		Repayment system	Annual minimum income threshold (in USD) for income-contingent loans	Duration of typical amortisation period (in years)	Average annual amount of repayment (in USD)	Proportion of graduates who benefit from remission/ forgiveness	Proportion of loans that are not repaid
		(7)	(8)	(9)	(10)	(11)	(12)
OECD	**Countries**						
	Australia	income-contingent schedule	35 335	9	2 924	m	m
	Canada	m	m	m	m	m	m
	Chile	income-contingent schedule	m	m	m	m	m
	Denmark	fixed-repayment schedule	a	m	m	m	m
	Estonia [1]	fixed-repayment schedule	m	6	m	5	3
	Finland	fixed-repayment schedule	m	5 to 15	2 649	33	9
	Germany [2]	income-contingent schedule	19 988	m	m	m	m
	Japan [3]	the borrower may choose between fixed-repayment and income-contingent schedule	m	Category 1 Loans (interest-free): 15 Category 2 Loans (interest-bearing): 20	Category 1 Loans (interest-free): 1534 Category 2 Loans (interest-bearing): 1872	0.3	m
	Korea [1]	the borrower may choose between fixed-repayment and income-contingent schedule	24 057	9	1 607	m	m
	Latvia [1]						
	Lithuania [1]	fixed-repayment schedule	m	15	m	0.1	2
	Netherlands	income-contingent schedule	25 312	35	m	m	14
	New Zealand	income-contingent schedule	13 835	8	2 224	0.4 approx.	m
	Norway	fixed-repayment schedule	0	20	m	1	4
	Poland	fixed-repayment schedule	m	5	m	0	0
	Sweden	fixed-repayment schedule	a	25	m	0.1	0
	Switzerland	fixed-repayment schedule	m	m	m	m	m
	United States [4]	the borrower may choose between fixed-repayment and income-contingent schedule	a	m	m	m	m
	Other participant						
	England (UK) [1, 5]	income-contingent schedule	30 536	30	m	75	53

Note: Data refer to calendar year 2018 for Australia; 2019 for Chile, Korea and New Zealand; academic year 2015/16 for Germany and the United States; academic year 2018/19 for England (UK) and Estonia. Please see Annex 3 for details. See Definitions and Methodology sections for more information.
1. Information on debt, repayment and remission refer to government-guaranteed private loans instead of public loans.
2. Data do not refer to students receiving public financial support (BAföG) but to those eligible to apply for it.
3. The two types of repayment are: fixed payment (depending on the total amount of loan and numbers of repayment times) and income-contingent payment (depending on students' incomes in the previous year).
4. Information on loans and debt at graduation refers to short-cycle tertiary and bachelor's degrees only. Average annual gross amount of loan borrowed by national students includes full-time students only.
5. The share of students who benefit from a loan and the average annual amount of loan are for short-cycle tertiary, bachelor's and long-cycle master's degrees.
Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/r7vuc2

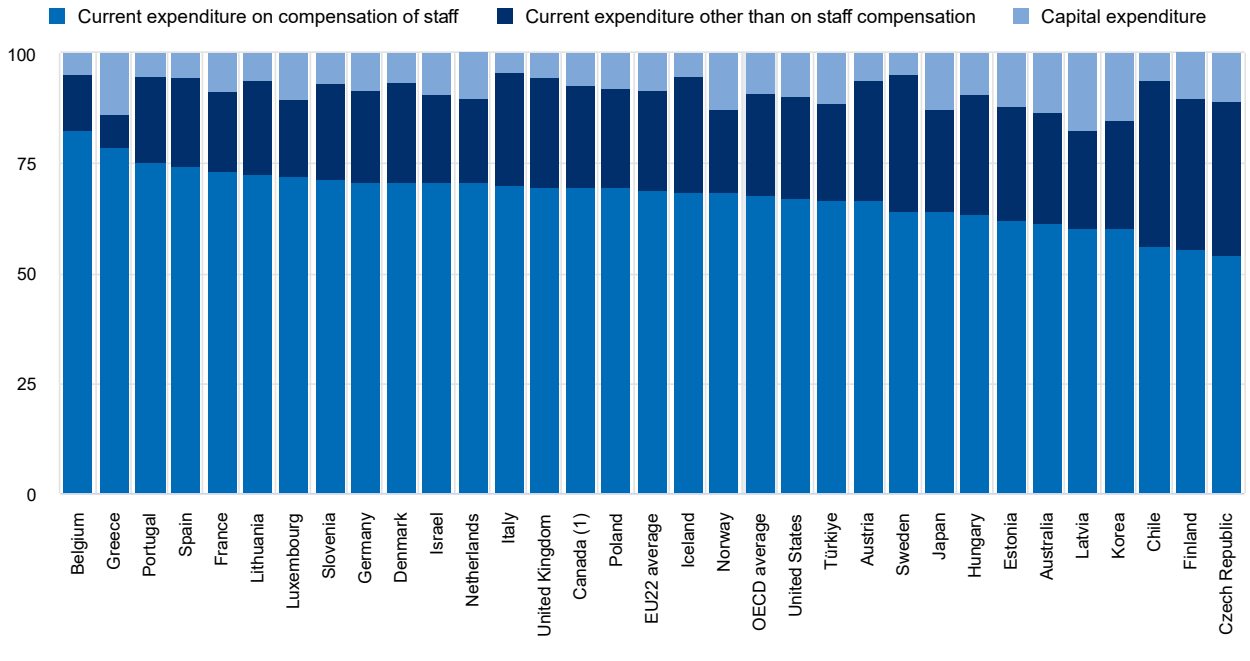
Indicator C6. On what resources and services is education funding spent?

Highlights

- On average across OECD countries, staff compensation and other current expenditure represents about 90% of the spending in educational institutions, regardless of the level of education. The only exception is the tertiary level in Greece, where it is only 52% of total expenditure, meaning the remaining 48% of spending at tertiary level goes towards capital expenditure.
- Staff compensation represents the largest share of current expenditure, accounting for a higher share in non-tertiary levels (primary, secondary and post-secondary non-tertiary education) (78%) than in tertiary education (67%) where expenditure also supports research and development (R&D).
- On average across OECD countries, 82% of resources devoted to staff compensation at primary, secondary and post-secondary non-tertiary levels are allocated to staff salaries, 13% to pensions, and the remainder to other non-salary staff compensation including health care or health insurance, disability insurance, unemployment compensation, maternity and childcare benefits, and other forms of social insurance.

Figure C6.1. Distribution of expenditure between capital and current expenditure (2019)

Primary to tertiary, in per cent



1. Primary education includes pre-primary programmes.

Countries are ranked in descending order of the share of expenditure on compensation of staff.

Source: OECD/UIS/Eurostat (2022), Tables C6.1 and C6.2, available on line. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

StatLink https://stat.link/yxzawq

Context

How education spending is allocated between current and capital expenditure affects the provision of services such as meals, transport, housing and research activities; the level of staff salaries; the material conditions under which instruction takes place (via the expenditure on school buildings and maintenance); and the ability of the education system to adjust to changing demographic and enrolment trends.

Decisions about the resources devoted to educational institutions and their allocation between short-term and long-term goods and services can thus influence the quality of instruction and, by extension, student learning outcomes. Striking a proper balance that reflects their country's educational priorities is a challenge all governments and institutions face, especially in times of crisis and competing priorities. Comparing the amount and distribution of educational expenditure across resource categories, and over time, can shed some light on the various organisational and operational arrangements developed by countries.

The allocation of education spending between public and private educational institutions also has equity implications, inasmuch as enrolment in private educational institutions is driven, among other factors, by family income and is associated with earning advantages.

This indicator describes how money for educational institutions from all funding sources (governments, international sources and the private sector) is spent on educational goods and services, both overall and by type of institution (public or private). It also analyses how total resources on compensation of staff, capital, and research and development (R&D) is allocated between public and private institutions, and how spending has varied over time.

Other findings

- R&D represents an important share of expenditure at tertiary level and, as with the other expenditure categories, most of R&D expenditure at tertiary level is devoted to public institutions. Public tertiary institutions account for about two-thirds of the tertiary students enrolled across OECD countries, but account for an even larger share of R&D expenditure. Expenditure on R&D per student in public tertiary institutions (USD 6 200) is more than twice that in private ones (USD 2 900) on average across OECD countries.
- Between 2012 and 2019, current expenditure per full-time equivalent student in public institutions from primary to tertiary education grew by an average of 2% per year across OECD countries. The greatest increases (over 4%) were observed in Hungary, Iceland, Lithuania, the Slovak Republic and Türkiye, with large increases in teachers' compensation per student in Iceland and the Slovak Republic.
- Public and private institutions divide their spending in similar ways: on average across OECD countries, both spend about 90% on current expenditure and 10% on capital expenditure. From primary to tertiary education, private institutions devote 68% of their current expenditure to staff, while the share is 76% in public institutions.

Analysis

Distribution of educational institutions' current and capital expenditure by education level

Expenditure on education is composed of current and capital expenditure. Current expenditure includes staff compensation and spending on the goods and services needed each year to operate schools and universities, while capital expenditure refers to spending on the acquisition or maintenance of assets which last longer than one year (see *Definitions* section). Differences in current and capital expenditure allocation across countries reflect the degree to which countries have invested in the construction of new buildings – for example as a response to increases in enrolment – or in the restoration of existing school premises, due to obsolescence and ageing of existing structures, or the need to adapt to new educational, societal or safety needs. Unlike current expenditure, capital expenditure can show large fluctuations over time, with peaks in years when investment plans are implemented, followed by years of troughs.

Given the labour-intensive nature of education, current expenditure represents the largest proportion of total expenditure on education in OECD and partner countries. In 2019, current expenditure accounted for 91% of total expenditure on primary to tertiary educational institutions in OECD countries, with the remainder devoted to capital expenditure (Figure C6.1). On average, the overall share of current expenditure does not differ by more than 3 percentage points across education levels, but there are larger differences across countries. The share of current expenditure on institutions at primary, secondary and post-secondary non-tertiary levels ranges from 82% in Latvia to 98% in Greece, and from 52% in Greece to 97% in Iceland at tertiary level (Table C6.1). Larger differences across educational levels are observed when considering current expenditure per student. In 2019, average current expenditure across OECD countries was almost USD 11 400 per student, with higher values at tertiary level (USD 16 500) than at non-tertiary levels (almost USD 10 000). Across all education levels, current expenditure per student varies widely across OECD and partner countries, ranging from about USD 5 100 in Greece to almost USD 22 500 in Luxembourg (Table C6.1).

Capital expenditure represents 9% of expenditure on primary to tertiary educational institutions on average across OECD countries, but reaches 12% or more in Australia, Estonia, Greece, Japan, Korea, Latvia and Norway (Figure C6.1). The share of capital expenditure is higher at tertiary level (10%) than at non-tertiary levels (8%). Greece has invested the largest share in infrastructure at tertiary level, and by a long way: in 2019, capital expenditure reached 48% of its total expenditure on tertiary education. At non-tertiary levels, Latvia allocates 18% of its education budget to capital expenditure, the highest share across countries with available data (Table C6.1). Average capital expenditure across OECD countries at all levels from primary to tertiary is slightly over USD 1 000 per student. Australia, Japan, Korea, Luxembourg, Norway and the United States invested the most per student in long-term assets in 2019 (over USD 1 500 per student), while Chile, Colombia, Italy and Lithuania invested the least (less than USD 500) among OECD and partner countries. Similar to current expenditure, on average across OECD countries, capital expenditure per student at tertiary level (USD 1 600) is far higher than at primary, secondary and post-secondary non-tertiary levels (USD 900) (Table C6.1, available on line).

Distribution of current expenditure

Current expenditure in educational institutions can be further subdivided into three broad functional categories: 1) compensation of teachers; 2) compensation of other staff; and 3) other current expenditure (including teaching materials and supplies, ordinary maintenance of school buildings, provision of meals and dormitories to students, and rental of school facilities). Current and projected changes in enrolment, changes to the salaries of education personnel, and the different costs of maintaining education facilities over time and across education levels can affect not only the amounts, but also the shares, allocated to each category.

In 2019, compensation of teachers and other staff employed in educational institutions comprised the largest share of current expenditure from primary to tertiary education (74% on average across OECD countries). This share has been stable on average over time, but varies significantly across countries and within education levels (Table C6.2). On average across OECD countries, staff compensation as a share of total current expenditure is higher in non-tertiary education (78%) than in tertiary education (67%), due to the higher costs of facilities and equipment in tertiary education. Belgium, Costa Rica, France, Greece and Poland report the greatest share of current expenditure allocated to staff compensation at tertiary level (75% or more) among OECD and partner countries. At non-tertiary levels, Belgium, Colombia and Greece devoted 85% or more of their educational expenditure to staff compensation, meaning they devoted less to other contracted and purchased services, such as support services (e.g. building maintenance), ancillary services (e.g. meal programmes) and rent for school buildings and other facilities (Table C6.2).

In countries with available data, compensation of teachers represents a larger share of current expenditure than that of other non-teaching staff, especially in non-tertiary education (Table C6.2). The difference in spending between teaching and non-teaching staff reflects the degree to which educational institutions count non-teaching personnel (such as principals, guidance counsellors, bus drivers, school nurses, janitors and maintenance workers) among their staff members.

In all OECD and partner countries with available data, teachers in tertiary education receive a smaller share of current expenditure than teachers in primary, secondary and post-secondary non-tertiary institutions. The largest difference is observed in the United Kingdom where tertiary teachers receive 32% of current expenditure compared to 71% for non-tertiary teachers. This reflects the complex nature of tertiary education where current expenditure is spent across a greater variety of staff and functions. For example, the compensation of staff involved in R&D activities and the purchase of related material can represent a significant share of current expenditure at tertiary level (Table C6.2).

Staff compensation relative to the number of students shows that remuneration of teachers and other staff is higher at tertiary education levels than at non-tertiary ones. In 2019, OECD countries spent on average about USD 8 200 per full-time equivalent student on staff compensation from primary to tertiary levels, ranging from USD 10 700 per student at tertiary level to USD 7 700 at non-tertiary. However, there were substantial variations across OECD and partner countries and levels of education. At primary, secondary and post-secondary non-tertiary levels, expenditure per student on staff compensation ranges from less than USD 3 000 in Colombia to more than USD 10 000 in Austria, Belgium, Iceland, Luxembourg, Norway and the United States. At tertiary level, spending on staff compensation per student exceeds USD 15 000 in Belgium, Luxembourg, Sweden and the United States (Table C6.2).

Variations in the share of current expenditure for expenses other than staff compensation (such as equipment available to staff, contracted services and rent) reflect the different cost structures of educational institutions across countries. Facilities and equipment costs are generally higher in tertiary education than at other levels. In addition, in some countries, tertiary institutions may be more likely to rent their premises, which can account for a substantial share of current expenditure. Chile and Italy devote the largest share to other current expenditure at tertiary level (almost 50% of total current expenditure), while at non-tertiary levels the share reaches 38% in the Czech Republic and Finland (Table C6.2).

Distribution of current and capital expenditure, by type of educational institution

On average, public and private institutions in OECD countries divide their spending between current and capital expenditure in a similar way. This conceals wide variation across countries, however. The share of current expenditure is at least 10 percentage points higher in public institutions than in private ones at non-tertiary levels in Poland and Portugal, and at tertiary level in Australia and Türkiye. Similarly, at non-tertiary levels, capital expenditure accounts for more than 15% of total expenditure in public institutions in Korea and Latvia, while the share is over 15% in private institutions in Australia, Latvia, Poland, and Türkiye. Costa Rica, Greece, Mexico and the United Kingdom record the lowest share of capital expenditure in public institutions at this level (less than 3%). At tertiary level, public institutions in Greece, Hungary and New Zealand have the highest shares of capital expenditure, at over 15%, while the highest shares for private institutions are in Australia, Hungary, Latvia, and Türkiye, also over 15% (Table C6.3).

Larger differences are observed when looking at capital expenditure per student, with values slightly higher in public than in private educational institutions on average. In public institutions, values are about twice as high at tertiary level (USD 1 600) as at non-tertiary levels (USD 900). Similarly, in private institutions, capital expenditure per student is also much higher at tertiary (USD 1 400) than non-tertiary (USD 770) level. At non-tertiary levels, the highest capital expenditure per student is observed in public institutions in Luxembourg (USD 3 000), and similarly in about 60% of countries, spending is higher in public than in private institutions. At tertiary level, the highest amounts are observed for private institutions in Australia and the United States (over USD 4 700), but in about two-thirds of countries, capital expenditure is higher in public institutions. From primary to tertiary education, the lowest values in public institutions (less than USD 400) are observed in Argentina, Brazil, Colombia, Costa Rica, Mexico, Portugal and the United Kingdom (Table C6.3, available on line).

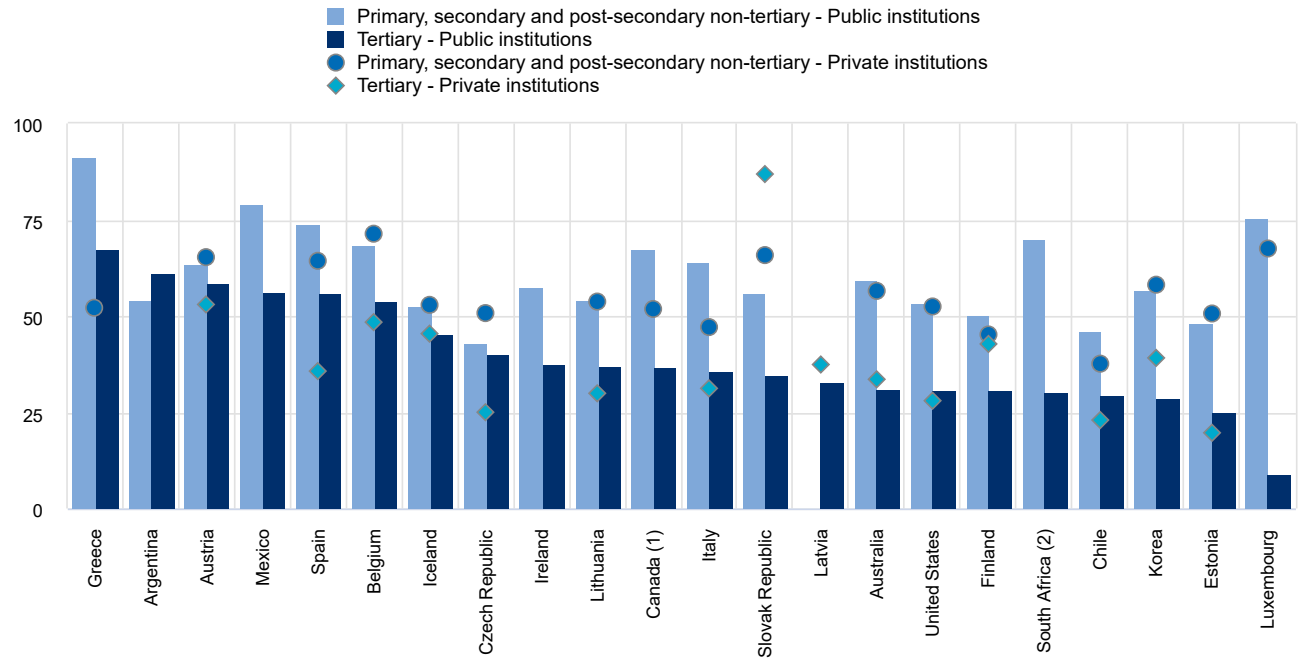
The management of resources and the organisation of education systems can differ according to the type of institution. Staff compensation accounts for a larger share of current expenditure in public institutions across OECD countries: 79% compared to 72% in private ones at non-tertiary levels, and 68% compared to 61% at tertiary level. Private institutions may be more likely to contract services from external providers, or to rent school buildings and other facilities (as opposed to public institutions operating in state-owned properties). They may also be more likely to be at a disadvantage when purchasing teaching materials, as they cannot benefit from the same economies of scale in procurement as the public sector. In a number of countries, however, the share of current expenditure allocated to staff compensation is higher in private institutions, with

differences of over 5 percentage points in the Czech Republic, the Netherlands, and the Slovak Republic at non-tertiary levels, and in Finland, Israel, Japan, Korea, the Netherlands and the Slovak Republic at tertiary level (Table C6.3).

In most OECD countries there are both public and private institutions at each level of education, with the share of students enrolled in private institutions often higher at tertiary level. This is the case for example in Chile, Israel, Korea, Latvia and the United Kingdom where at least 80% of tertiary students are enrolled in private institutions. The size of the private sector at different levels of education is important contextual information when considering the distribution of resources between public and private institutions. In most OECD and partner countries with available data, tertiary teachers receive a smaller share of current expenditure than teachers in non-tertiary education in both public and private institutions. Greece is the country where teachers in public institutions receive the largest share of current expenditure, both at tertiary (67%) and at non-tertiary levels (92%). In contrast, non-tertiary teachers in private institutions in Greece receive a much lower share of current expenditure (52%), although only about 5% of students are enrolled in private institutions at primary and secondary level, and tertiary education is only provided by public institutions. The pattern is similar in Italy and Spain where teachers in the public sector receive a larger share of current expenditure (at least 5 percentage points more) than teachers in the private sector at both tertiary and non-tertiary levels. This raises questions about spending choices in the private sector in these countries, given that teachers have a large impact on the quality of education systems (Figure C6.2 and Table C6.3).

Figure C6.2. Share of current expenditure devoted to teachers, by level of education and type of institution (2019)

In per cent



1. Primary education includes pre-primary programmes.
2. Year of reference differs from 2019. Refer to the source table for more details.
Countries are ranked in descending order of the share of current expenditure in tertiary public institutions devoted to teachers.
Source: OECD/UIS/Eurostat (2022), Table C6.3. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

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Expenditure per student on compensation of teachers in non-tertiary public institutions is generally higher than in private institutions for countries with available data, amounting to about USD 6 300 per student on average across OECD countries. The biggest differences (over USD 3 000) are found in Italy, Luxembourg and Spain. In contrast, in Colombia, Estonia and the United Kingdom not only is the expenditure on staff compensation per student higher in private institutions than public ones, but the difference also exceeds USD 1 000. At tertiary level, the largest difference between staff compensation per

student in public and private institutions among countries with available data is observed in Australia, Austria, the Czech Republic, Finland and Spain (above USD 3 500). However, Latvia, the Slovak Republic and the United States spend more on staff compensation per student in private tertiary institutions than in public ones (Table C6.3).

Allocation of staff compensation and capital and R&D expenditure between public and private educational institutions

The debate over the benefits and disadvantages of public and private education systems is long-standing and focuses on two main points. There is the concept of education as a public common good on the one side, as discussed by Reid (2003[1]) for example. On the other side, private educational institutions could provide a more innovative and performing educational environment (Alderman, Orazem and Paterno, 2001[2]), although this might lead to social segregation (Courtioux and Maury, 2020[3]).

Enrolment in private educational institutions is driven by many factors, including family income (Curi and Aquino Menezes-Filho, 2007[4]; Murnane et al., 2018[5]). It is associated with a significant and positive earning advantage compared to public institutions, even after controlling for school quality, family background and educational achievement (Sandy and Duncan, 1996[6]). The choice between investing in public or private educational institutions therefore has an important effect on equity and inclusiveness.

Across OECD countries, from primary to tertiary level, around 80% of the resources devoted to staff compensation, capital expenditure and expenditure on R&D are allocated to public educational institutions. The shares are higher at non-tertiary levels than at tertiary level, where less than three-quarters of total resources devoted to compensation of personnel and capital expenditure are invested in public educational institutions (Table C6.4, available on line).

In Belgium, Chile, Colombia, Finland, Israel, Japan, Korea, Latvia, the United Kingdom and the United States, the share of staff compensation allocated to private institutions in tertiary education is higher than the OECD average. The Czech Republic, Denmark, Estonia, Lithuania and Slovenia have the lowest shares (lower than 5%). Private institutions account for more than half of the share of capital expenditure in Belgium, Chile, Colombia, Israel, Japan, Korea, Latvia and the United Kingdom at tertiary education level, and in Chile, Colombia, Portugal and the United Kingdom at non-tertiary levels (Table C6.4, available on line). It should be noted, however, that the allocation of resources between public and private institutions is heavily influenced by the number of students enrolled in the two types of institutions.

At tertiary level, spending on research and development (R&D) is the category of expenditure with the largest share of funds allocated to public institutions (OECD average 83%). In Belgium, Chile, Korea, Latvia and the United Kingdom, however, more than half of the resources devoted to R&D are spent on private educational institutions (Table C6.4, available on line). Expenditure on R&D per student in public tertiary institutions (USD 6 200) is more than twice that in private ones (USD 2 900) on average across OECD countries. In Denmark, Finland, Luxembourg, Norway, Sweden and Switzerland, expenditure on R&D per student in public educational institutions was over USD 10 000 in 2019, while expenditure per student on R&D in private institutions exceeds USD 8 300 in Denmark and Sweden (Table C6.3).

Distribution of expenditure on staff compensation: salaries, pensions and other non-salary staff compensation

Robust pension schemes support good living standards in retirement and help to attract and retain high-quality teaching staff. However, spending on pension obligations must be appropriately balanced against expenditure on teachers' salaries and other non-salary staff compensation. This can be difficult to achieve as countries' pension expenditure depends on a variety of factors, such as the organisation of the education system and the general demographic and macroeconomic trends. Moreover, pension obligations that were entered into the past can affect pension expenditure for many decades in the future (OECD, 2021[7]).

Pension spending varies between levels of education. Primary and secondary levels often have greater pension expenditure than tertiary education, which may have more temporary staff. Similarly, there may be differences in pension benefits and coverage between public and private institutions as staff in public institutions may benefit from greater coverage. Underlying economic and demographic trends including population ageing and labour-market shocks also significantly affect the future organisation of pension schemes. The size of the working-age population is projected to decline by over one-quarter by 2060 in most European countries as well as in Japan and Korea, resulting in long-term financial pressures on pensions as the working-age population decreases (OECD, 2021[7]). This will be particularly felt by today's young workers, who may have significantly worse pension coverage than their older colleagues.

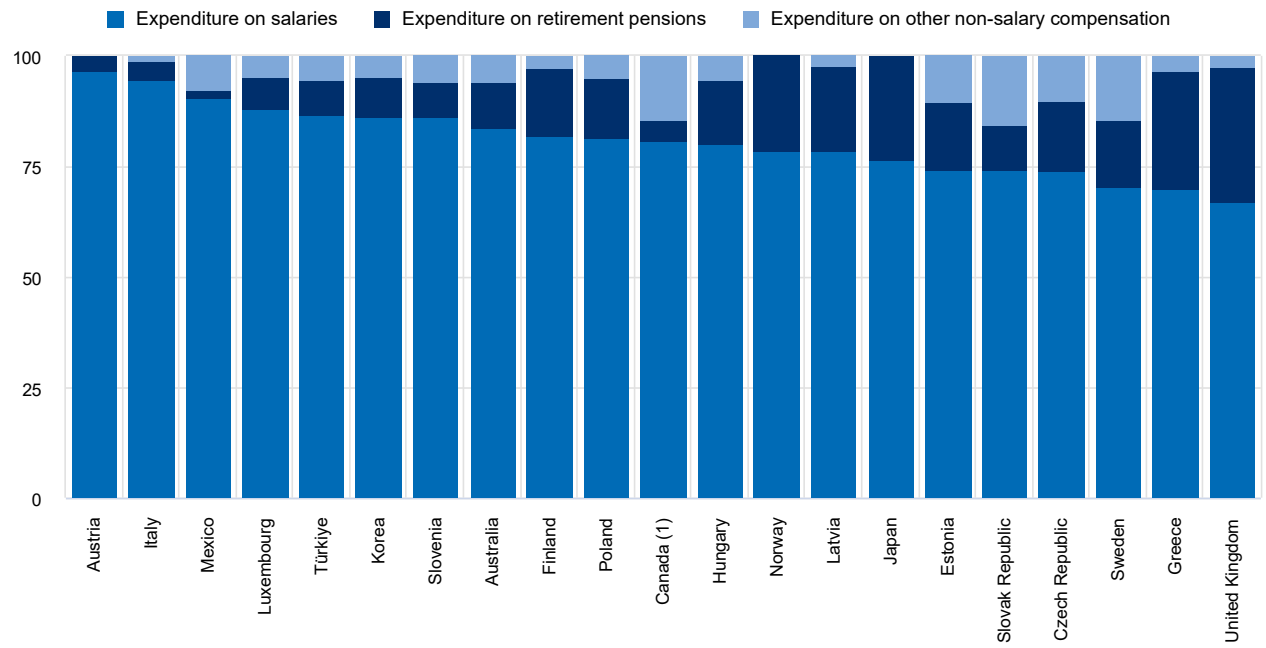
Across OECD countries with available data, expenditure for salaries comprises the largest share of current expenditure for staff compensation in public institutions from primary to tertiary levels, ranging from 67% in the United Kingdom to at least 90% in Austria, Italy, and Mexico. Half of the countries allocated 14% or more to expenditure for retirement pension, with Greece (27%) and the United Kingdom (31%) allocating the most. Austria, Canada, Italy and Mexico allocated the least to staff pensions (5% or less). In Canada, Estonia, the Slovak Republic and Sweden, expenditure for other non-salary compensation exceeded 10% of current expenditure on staff compensation from primary to tertiary levels (Figure C6.3).

At the tertiary level, over 80% of resources are allocated to staff salaries in Austria, Canada, Finland, Japan, Korea, Luxembourg, Mexico, Slovenia and Türkiye. In Greece, Italy and Norway, more than 20% of expenditure on tertiary staff compensation is allocated to pensions, while in Canada, Poland, the Slovak Republic and Sweden, at least 14% of expenditure is allocated to non-salary compensation. In Costa Rica, only one-third of staff compensation at the tertiary level is allocated to salaries, while 58% is allocated to non-salary staff compensation (Table C6.6, available on line).

Austria, Italy and Mexico allocate the largest amount to staff salaries at the non-tertiary levels (more than 90%). Australia, Hungary, Italy, Poland and Sweden allocate at least 5 percentage points more to non-tertiary staff salaries than to tertiary staff salaries, while Japan and Korea allocate at least 7 percentage points less. The countries that allocate the largest share to staff retirement pensions at the non-tertiary levels (over 24%) include Greece, Japan and the United Kingdom, while Italy and Mexico allocate 2% or less to pensions (Table C6.6, available on line).

Figure C6.3. Distribution of expenditure on salaries, pensions and other non-salary staff compensation (2019)

Primary to tertiary, current expenditure on staff compensation in public institutions, in per cent



1. Primary education includes pre-primary programmes.
Countries are ranked in descending order of the share of staff compensation devoted to salaries.
Source: OECD/UIS/Eurostat (2022), Table C6.6, available on line. See Source section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

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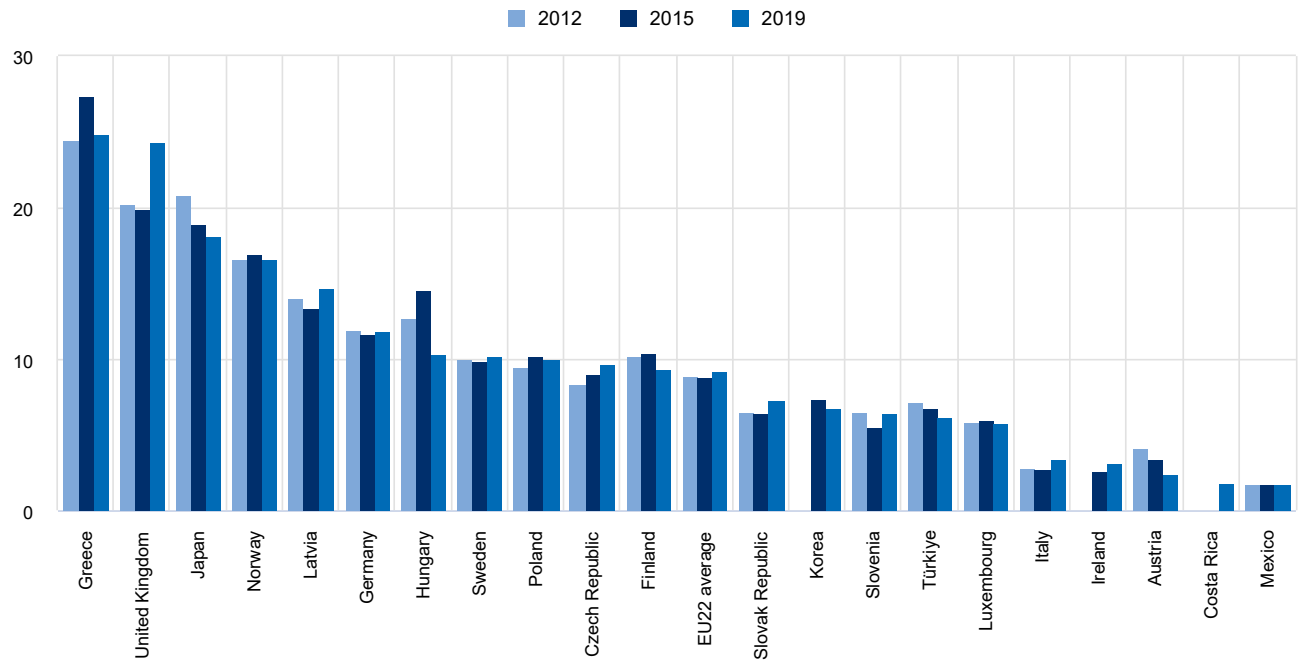
Trends in current expenditure

Between 2015 and 2019, total current expenditure at primary to tertiary levels grew by 7% on average (in constant 2015 prices), with large differences between countries. Current expenditure at all education levels grew by at least 23% in the Czech Republic, Israel and Türkiye between 2015 and 2019, but by 5% or less in Austria, France, Hungary, Italy and Japan. Argentina, Brazil, Finland, Latvia, Mexico and the United Kingdom were among the countries where current expenditure declined during this time. In over half of the countries with available data, current expenditure at tertiary level increased more than at non-tertiary levels, particularly in Hungary, Israel, Latvia, Luxembourg and Türkiye where the change in tertiary expenditure was at least 10 percentage points higher than for non-tertiary expenditure. Changes in expenditure on staff salaries from primary to tertiary level also varied markedly between countries, ranging from increases of 8% or less in Austria, Canada, Latvia and the United States, to increases of at least 34% in the Czech Republic, Lithuania and Türkiye. In Hungary, Latvia and Türkiye, the change in expenditure on staff salaries was at least 20 percentage points higher at tertiary level than at non-tertiary levels, while in the Czech Republic, Korea, Poland, Slovenia and Sweden, the change was at least 6 percentage points lower for expenditure on tertiary staff salaries than non-tertiary (Table C6.7, available on line).

Trends in the share of current expenditure devoted to staff pensions

The evolution of the share of expenditure devoted to staff compensation, and its distribution across salaries, pensions and other non-salary compensation, can provide information on spending priorities across OECD countries over time. In 2019, the share of current expenditure devoted to staff retirement pensions from primary to tertiary levels ranged from over 18% in Greece, Japan and the United Kingdom, to under 5% in Austria, Costa Rica, Ireland, Italy and Mexico. Between 2012 and 2019, the share of current expenditure devoted to staff pensions fell by 0.8 to 2.7 percentage points in Austria, Finland, Hungary, Japan and Türkiye, while in the United Kingdom, expenditure increased by 4 percentage points during this period (Figure C6.4 and Table C6.7, available on line).

Figure C6.4. Share of current expenditure devoted to staff retirement pensions (2012, 2015 and 2019)
Primary to tertiary, all current expenditure in public institutions, in per cent



Countries are ranked in descending order of the share of current expenditure devoted to retirement pensions in 2019.
Source: OECD/UIS/Eurostat (2022), Table C6.7, available on line. See Source section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

StatLink https://stat.link/ez8k75

Between 2015 and 2019, even after considering inflation, most countries with available data increased their expenditure on staff pensions in public primary to tertiary institutions, ranging from increases of over 20% in the Czech Republic, the Slovak Republic, Slovenia and Türkiye, to 10% and under in Germany, Korea, Latvia, Luxembourg, Norway and Poland. In contrast, Austria and Hungary are among the countries with the largest decreases (27%) over this period.

Notably, while the trend data show the changes in current expenditure devoted to pensions up to 2019, it does not necessarily capture future changes that will have a significant impact on the organisation and long-term sustainability of national pension systems. For example, In Italy, even though only 3% of current expenditure was devoted to staff retirement pensions in 2019 (Figure C6.4), the country's rapidly ageing population is likely to put considerable pressure on the national pension scheme, requiring increased pension expenditure and raising the retirement age and/or reducing pension benefits (OECD, 2021[7]).

Trends in expenditure per student

The share of resources devoted to a given category of expenditure highlights how those resources are allocated compared to other costs, but provides no information about whether that funding is sufficient to cover students' educational needs or the requirements of teachers. Although the shares devoted to current and capital expenditure do not show much variation on average over time – with current expenditure remaining at about 90% of total expenditure – the amount of current and capital expenditure per student shows greater variability both across countries and over time. These changes are due to the combination of changes in the resources devoted to education and in the student population.

Between 2012 and 2019, the average annual growth rate of current expenditure per student in public institutions from primary to tertiary education was 2% across OECD countries. The greatest increases (over 4%) were observed in Hungary, Iceland, Lithuania, the Slovak Republic and Türkiye, driven by large increases in teachers' compensation per student in the cases of Iceland and the Slovak Republic. In Finland, Greece and Mexico, in contrast, current expenditure per student fell, mostly due to a reduction in staff compensation per student. In private institutions, current expenditure per student at primary to tertiary level remained generally stable on average between 2012 and 2019 in countries with available data, although it increased by at least 4% per year in Hungary, Iceland and Latvia, and fell by more than 8% in Türkiye (Table C6.5, available on line).

Teachers' compensation per student in public institutions increased slightly between 2012 and 2019 in most countries with available data, with larger increases at tertiary level than at lower levels of education on average. At tertiary level, teachers' compensation increased the most in the Czech Republic, Iceland, Lithuania and the Slovak Republic (between 5% and 11% on average per year), while the biggest annual decrease was recorded in Mexico (over 5%). At non-tertiary levels, Colombia, Iceland and the Slovak Republic experienced the largest increases (4% or more per year), while the largest annual decreases were observed in Finland and Mexico (Table C6.5, available on line).

The average annual growth rate in expenditure on R&D per student in public tertiary institutions between 2012 and 2019 shows wide variation across countries. Average increases exceeded 5% per year in Brazil, Hungary, Luxembourg and Poland. Luxembourg is also the OECD country with the highest expenditure on R&D per full-time equivalent tertiary student (see Indicator C1). In contrast, spending on R&D per student in public institutions fell by more than 1% in Chile, Mexico, Portugal and Türkiye. In most of these countries the negative trend is partly explained by an increase in the number of students without any proportional increase in funds devoted to R&D (Table C6.5, available on line).

Comparing trends in R&D spending per student in public and private institutions in countries with available data, the picture is somewhat mixed. In Belgium and Finland, both trends are positive, but R&D expenditure in public institutions grew faster than in private ones. Between 2012 and 2019, spending on R&D rose in public institutions but fell in private ones in Slovenia and Sweden. In Italy and Türkiye, spending on R&D fell in both public and private institutions, but faster in private institutions (Table C6.5, available on line).

Definitions

Capital expenditure refers to spending on assets that last longer than one year, including construction, renovation or major repair of buildings and new or replacement equipment. The capital expenditure reported here represents the value of educational capital acquired or created during the year in question (i.e. the amount of capital formation), regardless of whether the capital expenditure was financed from current revenue or through borrowing. Neither capital nor current expenditure includes debt servicing.

Current expenditure refers to spending on staff compensation and on "Other current expenditure", i.e. on goods and services consumed within the current year, which require recurrent production in order to sustain educational services (expenditure on support services, ancillary services like preparation of meals for students, rental of school buildings and other facilities, etc.). These services are obtained from outside providers, unlike the services provided by education authorities or by educational institutions using their own personnel.

Research and development includes research performed at universities and other tertiary educational institutions, regardless of whether the research is financed from general institutional funds or through separate grants or contracts from public or private sponsors.

Staff compensation (including teachers and non-teaching staff, see below) includes: 1) salaries (i.e. gross salaries of educational personnel, before deduction of taxes, contributions for retirement or health-care plans and other contributions or premiums for social insurance or other purposes); 2) expenditure on retirement pensions (actual or imputed expenditure by employers or third parties to finance retirement benefits for current educational personnel); and 3) expenditure on other non-salary compensation (health care or health insurance, disability insurance, unemployment compensation, maternity and childcare benefits, and other forms of social insurance). The "**teachers**" category includes only personnel who participate directly in the instruction of students. The "**non-teaching staff**" category includes other pedagogical, administrative and professional personnel as well as support personnel (e.g. head teachers, other school administrators, supervisors, counsellors, school psychologists and health personnel, librarians, and building operations and maintenance staff). At tertiary levels, "teaching staff" includes personnel whose primary assignment is instruction or research. This category excludes student teachers, teachers' aides and paraprofessionals.

Methodology

The annual average growth rate is calculated using the compound annual growth rate, which is the "common ratio" of a geometric progression over the time period under analysis. A geometric progression, in turn, is a sequence of numbers where each term after the first one is obtained by multiplying the previous one by a fixed, non-zero number (the common ratio). Assuming a linear trend, the compound growth rate hence represents the constant percentage change between one year's value and the previous years.

Expenditure per student on educational institutions at a particular level of education is calculated by dividing total expenditure on educational institutions at that level by the corresponding full-time equivalent enrolment. Only educational institutions and programmes for which both enrolment and expenditure data are available are taken into account. Expenditure in national currencies is converted into equivalent USD by dividing the national currency figure by the purchasing power parity (PPP) index for gross domestic product. The PPP conversion factor is used because the market exchange rate is affected by many factors (interest rates, trade policies, expectations of economic growth, etc.) that have little to do with current relative domestic purchasing power in different OECD countries (see Annex 2 for further details).

The ranking of OECD countries by annual expenditure on educational services per student is affected by differences in how countries define full-time, part-time and full-time equivalent enrolment. Some OECD countries count every participant at tertiary level as a full-time student while others determine students' intensity of participation by the credits that they obtain for the successful completion of specific course units during a specified reference period. OECD countries that can accurately account for part-time enrolment have higher apparent expenditure per full-time equivalent student on educational institutions than those that cannot differentiate between the different types of attendance.

For more information, please see the OECD Handbook for Internationally Comparative Education Statistics 2018 (OECD, 2018[8]) and Annex 3 for country-specific notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

Source

Data refer to the financial year 2019 (unless otherwise specified) and are based on the UNESCO, OECD and Eurostat (UOE) data collection on education statistics administered by the OECD in 2021 (for details see Annex 3 at https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf). Data from Argentina, the People's Republic of China, India, Indonesia, Saudi Arabia and South Africa are from the UNESCO Institute of Statistics (UIS).

Data on expenditure for 2012 to 2019 were updated based on a survey in 2021-22, and expenditure figures for 2012 to 2019 were adjusted to the methods and definitions used in the current UOE data collection.

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Indicator C6 tables

Tables Indicator C6. On what resources and services is education funding spent?

Table C6.1	Share of current and capital expenditure, by level of education (2019)
Table C6.2	Share of current expenditure, by resource category (2019)
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WEB Table C6.4	*Distribution of staff compensation, capital and R&D expenditure, by type of institution (2019)*
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WEB Table C6.6	*Distribution of expenditure on salaries, pensions and other non-salary staff compensation (2019)*
WEB Table C6.7	*Trends in expenditure on salaries and pensions (2012, 2015 and 2019)*

StatLink https://stat.link/9qj8os

Cut-off date for the data: 17 June 2022. Any updates on data can be found on line at: http://dx.doi.org/10.1787/eag-data-en. More breakdowns can also be found at http://stats.oecd.org, *Education at a Glance Database*.

Table C6.1. Share of current and capital expenditure, by level of education (2019)

Distribution of current and capital expenditure from public and private sources

		Primary		Secondary						Post-secondary non-tertiary		Primary, secondary and post-secondary non-tertiary		Tertiary		Primary to tertiary	
				Lower secondary		Upper secondary		All secondary									
		Current	Capital	Current	Capital	Current	Capital	Current	Capital	Current	Capital	Current	Capital	Current	Capital	Current	Capital
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
OECD	**Countries**																
	Australia	88	12	87	13	88	12	87	13	90	10	88	12	84	16	87	13
	Austria	91	9	96	4	98	2	97	3	99	1	95	5	92	8	94	6
	Belgium	95	5	97	3	97[d]	3[d]	97[d]	3[d]	x(5,7)	x(6, 8)	96	4	93	7	95	5
	Canada [1, 2]	92[d]	8[d]	x(1)	x(2)	92	8	92	8	m	m	92[d]	8[d]	94	6	93[d]	7[d]
	Chile	94	6	93	7	93	7	93	7	a	a	94	6	94	6	94	6
	Colombia [2]	92	8	94	6	94	6	94	6	m	m	93	7	m	m	m	m
	Costa Rica [3]	m	m	m	m	m	m	m	m	a	a	m	m	93	7	m	m
	Czech Republic	89	11	89	11	91	9	90	10	90	10	89	11	88	12	89	11
	Denmark	92	8	93	7	94	6	94	6	a	a	93	7	95	5	94	6
	Estonia	87	13	87	13	93	7	90	10	91	9	88	12	88	12	88	12
	Finland	85	15	86	14	93[d]	7[d]	89[d]	11[d]	x(5, 7)	x(6, 8)	88	12	95	5	90	10
	France	91	9	92	8	91	9	91	9	91	9	91	9	92	8	91	9
	Germany	92	8	93	7	90	10	91	9	94	6	92	8	91	9	92	8
	Greece [2]	98	2	98	2	97	3	97	3	m	m	98	2	52	48	86	14
	Hungary	94	6	94	6	92	8	93	7	91	9	93	7	82	18	91	9
	Iceland	93	7	93	7	98	2	96	4	98	2	94	6	97	3	95	5
	Ireland	m	m	93	7	m	m	m	m	m	m	m	m	m	m	m	m
	Israel	88	12	x(5)	x(6)	92[d]	8[d]	92	8	100	0	90	10	92	8	91	9
	Italy	97	3	97	3	97[d]	3[d]	97[d]	3[d]	x(5, 7)	x(6, 8)	97	3	91	9	96	4
	Japan	85	15	86	14	91[d]	9[d]	89[d]	11[d]	x(5, 7, 13)	x(6, 8, 14)	87	13	88[d]	12[d]	87	13
	Korea	80	20	84	16	86	14	85	15	a	a	83	17	90	10	85	15
	Latvia	83	17	83	17	80	20	81	19	77	23	82	18	84	16	83	17
	Lithuania	93	7	94	6	93	7	94	6	92	8	94	6	94	6	94	6
	Luxembourg	88	12	89	11	89	11	89	11	100	0	89	11	96	4	89	11
	Mexico	m	m	m	m	m	m	m	m	a	a	m	m	m	m	m	m
	Netherlands	89	11	89	11	92	8	91	9	a	a	90	10	90	10	90	10
	New Zealand	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Norway	85	15	85	15	90	10	88	12	90	10	87	13	88	12	87	13
	Poland	94	6	94	6	91	9	92	8	91	9	93	7	90	10	92	8
	Portugal	97	3	95	5	93[d]	7[d]	94[d]	6[d]	x(5, 7)	x(6, 8)	95	5	94	6	95	5
	Slovak Republic	96	4	98	2	93	7	96	4	92	8	96	4	m	m	m	m
	Slovenia	93	7	94	6	94	6	94	6	a	a	94	6	92	8	93	7
	Spain	96	4	97	3	97[d]	3[d]	97[d]	3[d]	x(5, 7)	x(6, 8)	97	3	89	11	95	5
	Sweden	95	5	95	5	95	5	95	5	94	6	95	5	96	4	95	5
	Switzerland	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Türkiye	89	11	90	10	90	10	90	10	a	a	90	10	87	13	89	11
	United Kingdom	97	3	96	4	97	3	97	3	a	a	97	3	90	10	95	5
	United States	90	10	90	10	90	10	90	10	90	10	90	10	91	9	90	10
	OECD average	91	9	92	8	92	8	92	8	m	m	92	8	90	10	91	9
	EU22 average	92	8	93	7	93	7	93	7	m	m	93	7	89	11	92	8
Partners	**Argentina**	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Brazil	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	China	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	G20 average	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m

Note: Data on expenditure per student for primary to tertiary education (Columns 17 to 22) are available for consultation on line (see StatLink below). The figures for current and capital expenditure reported on line might not correspond to the total expenditure on educational institutions reported in Table C1.1. This is because the institutions have either increased or reduced their fund balances during the period in question and because the figures presented in Indicator C1 cover expenditure inside and outside educational institutions, while figures presented here only cover expenditure on educational institutions. See *Definitions and Methodology* sections for more information. Data and more breakdowns available at: http://stats.oecd.org/, *Education at a Glance Database.*

1. Primary education includes pre-primary programmes.
2. Post-secondary non-tertiary figures are treated as negligible.
3. Year of reference 2020.

Source: OECD/UIS/Eurostat (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/hb1m9i

Table C6.2. Share of current expenditure, by resource category (2019)

Distribution of current expenditure from public and private sources as a percentage of total current expenditure

		Primary, secondary and post-secondary non-tertiary				Tertiary				Primary to tertiary			
		Staff compensation			Other current expenditure	Staff compensation			Other current expenditure	Staff compensation			Other current expenditure
		Teachers	Other staff	Total		Teachers	Other staff	Total		Teachers	Other staff	Total	
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
OECD	Countries												
	Australia	58	18	76	24	31	29	60	40	49	22	71	29
	Austria	64	11	75	25	58	7	64	36	62	9	71	29
	Belgium	70	19	89	11	51	27	78	22	65	22	86	14
	Canada [1]	66[d]	15[d]	81[d]	19[d]	37	30	66	34	55[d]	21[d]	75[d]	25[d]
	Chile	41	25	66	34	25	26	51	49	34	26	60	40
	Colombia	87	7	93	7	m	m	m	m	m	m	m	m
	Costa Rica [2]	m	m	m	m	m	m	77	23	m	m	m	m
	Czech Republic	44	19	62	38	39	17	56	44	42	18	61	39
	Denmark	x(3)	x(3)	81	19	x(7)	x(7)	65	35	x(11)	x(11)	76	24
	Estonia	48	25	74	26	25	38	63	37	41	29	70	30
	Finland	50	12	62	38	34	29	62	38	45	17	62	38
	France	59	21	81	19	42	37	79	21	54	26	80	20
	Germany	x(3)	x(3)	82	18	x(7)	x(7)	67	33	x(11)	x(11)	77	23
	Greece	89	3	92	8	67	21	88	12	86	6	91	9
	Hungary	x(3)	x(3)	72	28	x(7)	x(7)	64	36	x(11)	x(11)	70	30
	Iceland	53	20	73	27	45	26	71	29	51	21	72	28
	Ireland	m	m	m	m	m	m	m	m	m	m	m	m
	Israel	x(3)	x(3)	81	19	x(7)	x(7)	68	32	x(11)	x(11)	78	22
	Italy	64	16	79	21	35	17	52	48	57	16	73	27
	Japan	x(3)	x(3)	82	18	x(7)	x(7)	57[d]	43[d]	x(11)	x(11)	74	26
	Korea	57	19	76	24	36	25	61	39	50	21	71	29
	Latvia	x(3)	x(3)	76	24	37	28	66	34	x(11)	x(11)	73	27
	Lithuania	54	25	79	21	37	37	74	26	49	28	77	23
	Luxembourg	75	8	83	17	9	60	70	30	66	15	81	19
	Mexico	m	m	m	m	m	m	m	m	m	m	m	m
	Netherlands	x(3)	x(3)	81	19	x(7)	x(7)	73	27	x(11)	x(11)	78	22
	New Zealand	m	m	m	m	m	m	m	m	m	m	m	m
	Norway	x(3)	x(3)	83	17	x(7)	x(7)	68	32	x(11)	x(11)	79	21
	Poland	x(3)	x(3)	76	24	x(7)	x(7)	76	24	x(11)	x(11)	76	24
	Portugal	74	9	82	18	x(7)	x(7)	71	29	x(11)	x(11)	80	20
	Slovak Republic	57	17	74	26	37	25	63	37	52	19	71	29
	Slovenia	x(3)	x(3)	79	21	x(7)	x(7)	70	30	x(11)	x(11)	77	23
	Spain	72	9	81	19	52	21	73	27	66	13	79	21
	Sweden	x(3)	x(3)	68	32	x(7)	x(7)	66	34	x(11)	x(11)	67	33
	Switzerland	m	m	m	m	m	m	m	m	m	m	m	m
	Türkiye	x(3)	x(3)	78	22	x(7)	x(7)	71	29	x(11)	x(11)	75	25
	United Kingdom	71	10	81	19	32	26	58	42	59	15	74	26
	United States	54	27	81	19	30	35	65	35	44	31	74	26
	OECD average	m	m	78	22	m	m	67	33	m	m	74	26
	EU22 average	m	m	78	22	m	m	69	31	m	m	75	25
Partners	Argentina	m	m	m	m	m	m	m	m	m	m	m	m
	Brazil	m	m	m	m	m	m	m	m	m	m	m	m
	China	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m	m	m	m	m	m	m
	G20 average	m	m	m	m	m	m	m	m	m	m	m	m

Note: Some levels of education are included with others. Refer to "x" in Table C6.1 for details. Data on expenditure on staff compensation per student for primary to tertiary education (Columns 13 to 15) are available for consultation on line (see StatLink below). "Tertiary staff" includes personnel employed whose primary assignment is instruction or research (Column 14, available on line). See *Definitions and Methodology* sections for more information. Data and more breakdowns available at: http://stats.oecd.org/, *Education at a Glance Database*.

1. Primary education includes pre-primary programmes.
2. Year of reference 2020.

Source: OECD/UIS/Eurostat (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/6b9du8

Table C6.3. Share of current expenditure, by resource category and type of institution (2019)

Distribution of current expenditure by educational institutions

		Primary, secondary and post-secondary non-tertiary								Tertiary							
		Share of current expenditure in total expenditure		Compensation of staff as a percentage of current expenditure						Share of current expenditure in total expenditure		Compensation of staff as a percentage of current expenditure					
				Compensation of teachers		Compensation of other staff		Total compensation				Compensation of teachers		Compensation of other staff		Total compensation	
		Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
OECD	Countries																
	Australia	90	84	59	56	17	20	76	76	87	60	31	34	29	26	60	59
	Austria	95	99	64	65	12	3	76	69	92	92	59	53	8	3	66	56
	Belgium	96	97	68	71	21	18	89	90	93	93	54	48	28	27	82	75
	Canada [1]	92[d]	94[d]	67[d]	52[d]	15[d]	19[d]	82[d]	71[d]	94	a	37	a	30	a	66	a
	Chile	95	93	46	38	30	21	76	59	94	94	30	23	37	23	66	46
	Colombia	95	90	89	83	9	4	97	87	89	m	x(15)	m	x(15)	m	100	m
	Costa Rica [2]	99	m	78	m	2	m	80	m	93	m	x(15)	m	x(15)	m	77	m
	Czech Republic	89	100	43	51	19	22	62	73	88	100	40	25	17	12	57	37
	Denmark	91	99	x(7)	x(8)	x(7)	x(8)	84	72	95	98	x(15)	x(16)	x(15)	x(16)	65	58
	Estonia	88	93	48	51	26	15	74	66	88	96	25	20	38	35	63	55
	Finland	87	97	50	45	11	17	62	62	96	95	31	43	30	26	60	68
	France	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Germany	92	89	x(7)	x(8)	x(7)	x(8)	83	76	91	93	x(15)	x(16)	x(15)	x(16)	67	63
	Greece	98	98	92	52	2	20	93	72	52	a	67	a	21	a	88	a
	Hungary	93	94	x(7)	x(8)	x(7)	x(8)	76	63	82	80	x(15)	x(16)	x(15)	x(16)	64	68
	Iceland	94	100	53	53	20	17	73	70	96	100	45	45	26	26	71	71
	Ireland	92	m	58	m	10	m	68	m	97	m	37	m	1	m	38	m
	Israel	89	95	x(7)	x(8)	x(7)	x(8)	84	74	88	92	x(15)	x(16)	x(15)	x(16)	39	69
	Italy	97	96	64	47	16	0	81	47	91	89	36	31	17	19	53	50
	Japan	87	90	x(7)	x(8)	x(7)	x(8)	83	72	90[d]	87[d]	x(15)	x(16)	x(15)	x(16)	50[d]	61[d]
	Korea	82	88	57	58	19	15	76	73	86	92	29	39	28	24	56	63
	Latvia	82	82	m	x(8)	m	x(8)	76	78	90	83	33	37	51	27	84	64
	Lithuania	94	94	54	54	25	16	80	69	94	96	37	30	37	34	74	64
	Luxembourg	88	93	76	68	7	15	83	82	96	a	9	a	60	a	70	a
	Mexico	98	m	79	m	12	m	91	m	97	m	57	m	15	m	72	m
	Netherlands	89	98	x(7)	x(8)	x(7)	x(8)	80	87	89	94	x(15)	x(16)	x(15)	x(16)	72	81
	New Zealand	88	m	44	m	12	m	80	m	83	m	m	m	m	m	68	m
	Norway	86	m	x(7)	m	x(7)	m	82	m	88	97	x(15)	x(16)	x(15)	x(16)	70	55
	Poland	94	82	x(7)	x(8)	x(7)	x(8)	76	73	89	93	x(15)	x(16)	x(15)	x(16)	77	67
	Portugal	97	86	80	45	8	11	88	57	94	93	x(15)	x(16)	x(15)	x(16)	75	54
	Slovak Republic	95	100	56	66	17	16	73	81	94	m	35	87	26	10	61	97
	Slovenia	93	100	x(7)	x(8)	x(7)	x(8)	79	67	92	100	x(15)	x(16)	x(15)	x(16)	73	43
	Spain	97	96	74	64	9	12	83	76	88	95	56	36	21	21	77	56
	Sweden	95	95	55	55	13	12	68	68	96	97	x(15)	x(16)	x(15)	x(16)	66	65
	Switzerland [3]	90	m	71	m	14	m	85	m	m	m	m	m	m	m	m	m
	Türkiye	91	83	x(7)	x(8)	x(7)	x(8)	81	63	90	75	x(15)	x(16)	x(15)	x(16)	75	53
	United Kingdom	98	96	68	73	12	8	80	81	a	90	a	32	a	26	a	58
	United States	90	90	54	52	27	26	81	79	91	90	31	28	36	34	67	62
	OECD average	92	93	63	m	15	m	79	72	90	91	m	m	m	m	68	61
	EU22 average	92	94	63	m	14	m	78	71	90	93	m	m	m	m	68	62
Partners	Argentina	98	m	54	m	27	m	82	m	99	m	61	m	27	m	89	m
	Brazil	97	m	x(7)	m	x(7)	m	77	m	97	m	x(15)	m	x(15)	m	71	m
	China	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa [2]	97	m	70	m	10	m	80	m	95	m	30	m	23	m	54	m
	G20 average	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m

Note: Some levels of education are included with others. Refer to "x" in Table C6.1 for details. Data on staff compensation as a percentage of current expenditure (Columns 17 to 24), on expenditure on compensation of teachers per student for primary to tertiary education (Columns 25 to 30), on capital expenditure per student (Columns 31 to 36) and on research and development (Columns 37 to 38) are available for consultation on line (see StatLink below). See *Definitions and Methodology* sections for more information. Data and more breakdowns available at: http://stats.oecd.org/, *Education at a Glance Database.*

1. Primary education includes pre-primary programmes.
2. Year of reference 2020.
3. Year of reference 2018.

Source: OECD/UIS/Eurostat (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-C.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/len4ot

Chapter D. Teachers, the learning environment and the organisation of schools

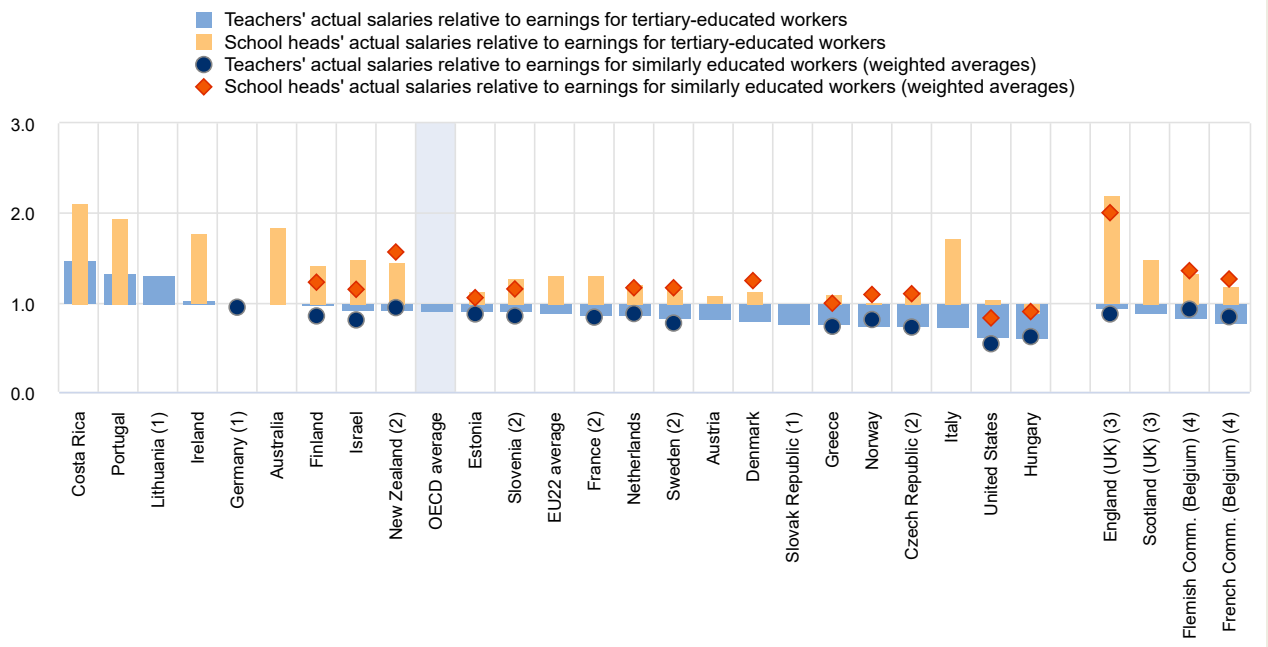
Indicator D3. How much are teachers and school heads paid?

Highlights

- The salaries of teachers and school heads tend to increase with the level of education they teach in most OECD countries and other participants.
- Teachers' actual salaries at pre-primary, primary and general secondary level are 4-14% lower than the earnings of tertiary-educated workers on average across OECD countries and other participants. School heads' actual salaries are substantially higher than those of teachers across primary and secondary education in OECD countries and other participants.
- On average across OECD countries and other participants, primary and secondary school heads' actual salaries are at least 30% higher than the earnings of tertiary-educated workers.

Figure D3.1. Actual salaries of lower secondary teachers and school heads relative to earnings for tertiary-educated workers (2021)

Ratio of salaries to the earnings of full-time, full-year workers aged 25-64



Note: Data refer to ratio of salary, using annual average salaries (including bonuses and allowances) of teachers and school heads in public institutions relative to the earnings of workers with similar educational attainment (weighted average) and to the earnings of full-time, full-year workers with tertiary education. Earnings of workers with similar educational attainment than teachers are weighted by distribution of teachers by qualification level.
1. Data for school heads is missing for Germany, Lithuania and the Slovak Republic
2. Year of reference for salaries of teachers/school heads differs from 2021. Refer to the source table for more information.
3. Data on earnings for full-time, full-year workers with tertiary education refer to the United Kingdom.
4. Data on earnings for full-time, full-year workers with tertiary education refer to Belgium.
Countries and other participants are ranked in descending order of the ratio of teachers' salaries to earnings for full-time, full-year tertiary-educated workers aged 25-64.
Source: OECD (2022), Table D3.2. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

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Context

The salaries of school staff, and in particular teachers and school heads, represent the largest single cost in formal education. Teachers' salaries also have a direct impact on the attractiveness of the teaching profession. They influence decisions on whether to enrol in teacher education, become a teacher after graduation and to remain a teacher. In general, the higher teachers' salaries are, the fewer people choose to leave the profession (OECD, 2005[1]). Salaries can also have an impact on the decision to become and remain a school head.

Compensation and working conditions are important for attracting, developing and retaining skilled and high-quality teachers and school heads. It is important for policy makers to carefully consider the salaries and career prospects of teachers as they try to ensure both high-quality teaching and sustainable education budgets (see Indicator C6).

Statutory salaries are just one component of teachers' and school heads' total compensation. Other benefits, such as regional allowances for teaching in remote areas, family allowances, reduced rates on public transport and tax allowances on the purchase of instructional materials may also form part of teachers' total remuneration. In addition, there are large differences in taxation and social benefits systems across OECD countries. There can also be substantial variation in teacher and school-head salary scales at subnational level in some countries based on local factors such as cost of living (see Box D3.2). This should be kept in mind when analysing teachers' salaries and making cross-country comparisons, along with potential comparability issues related to the data collected (see Box D3.1 of Education at a Glance 2019 (OECD, 2019[2]), Box D3.1 and Annex 3) and the fact that the data collected only cover public educational institutions.

Other findings

- The range of teachers' salaries within countries can be quite wide, as different qualification levels can be associated with different salary scales. For lower secondary teachers, the average salary for teachers at the top of the scale and with the maximum qualifications is 41% higher than the average starting salary for those with the minimum qualifications.
- Between 2005 and 2021, on average across OECD countries with data for all reference years, the statutory salaries of teachers with 15 years of experience and the most prevalent qualifications increased by 3% at primary level, 3% at lower secondary level (general programmes) and 5% at upper secondary level (general programmes).
- School heads are less likely than teachers to receive additional compensation for performing responsibilities over and above their regular tasks. School heads and teachers working in disadvantaged or remote areas are rewarded with additional compensation in half of the OECD countries and other participants with available data.

Analysis

Teachers' salaries

Teachers' statutory salaries can vary according to a number of factors, including the level of education taught, their qualification level, and their level of experience or the stage of their career.

Data on teachers' salaries are available for three qualification levels: minimum, most prevalent and maximum. The salaries of teachers with the maximum qualifications can be substantially higher than those with the minimum qualifications. However, in some countries, very few teachers hold the minimum or maximum qualifications. In many countries, most teachers have the same qualification level. For these reasons, the following analysis on statutory salaries focuses on teachers who hold the most prevalent qualifications.

Statutory salaries

Teachers' salaries vary widely across countries. The salaries of lower secondary school teachers with 15 years of experience and the most prevalent qualifications (a proxy for mid-career salaries) range from less than USD 21 000 in Hungary and the Slovak Republic to more than USD 70 000 in Canada, Germany and the Netherlands, and they exceed USD 100 000 in Luxembourg (Table D3.1).

Typically, teachers' salaries increase with the level of education they teach. On average across OECD countries and other participants, the salaries of teachers with 15 years of experience and the most prevalent qualifications range from USD 45 253 at the pre-primary level to USD 49 245 at the primary level, USD 51 246 at the lower secondary level and USD 53 268 at the upper secondary level. In the Flemish and French Communities of Belgium, upper secondary teachers with 15 years of experience and the most prevalent qualifications earn between about 25% and 30% more than pre-primary teachers with the same experience, while in Finland they earn around 50% more, and in Mexico they earn nearly twice as much. In Finland, the difference is mainly driven by the gap between pre-primary and primary teachers' salaries. In the Flemish and French Communities of Belgium and in Mexico, teachers' salaries at upper secondary level are significantly higher than at other levels of education (Table D3.1).

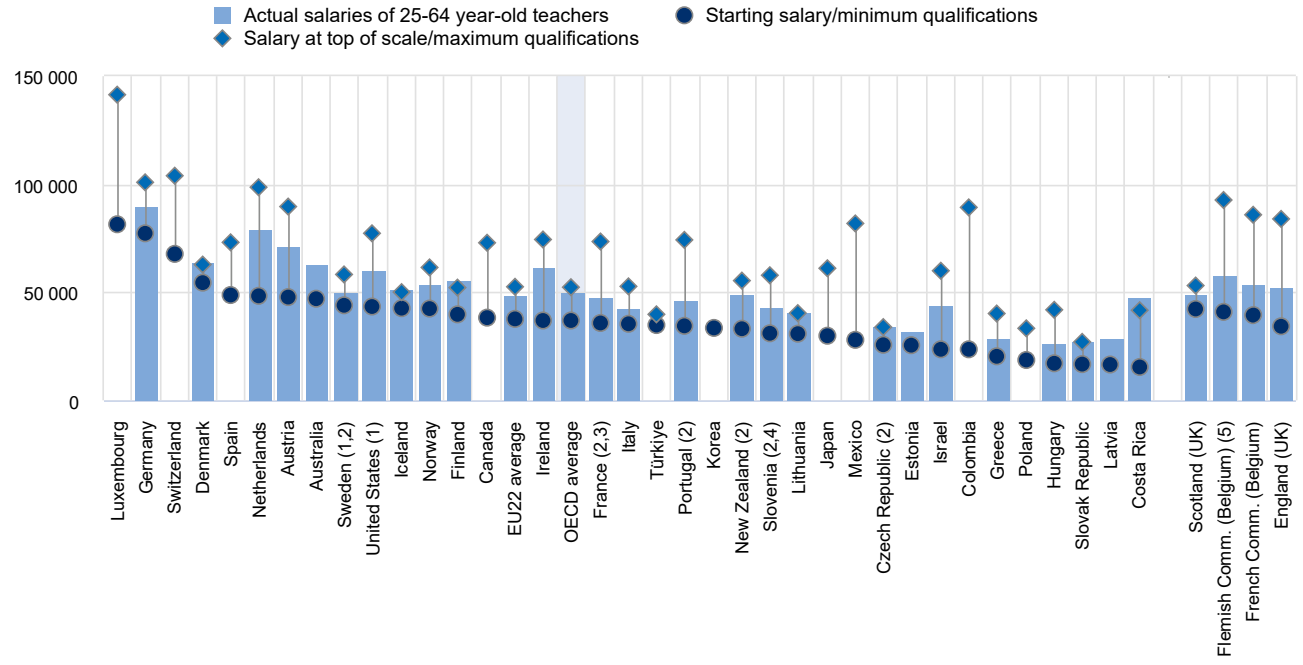
The difference in salaries between teachers (with 15 years of experience and the most prevalent qualifications) at pre-primary and upper secondary levels is less than 5% in Costa Rica, Israel, Korea, Slovenia, Türkiye and the United States, and teachers with the most prevalent qualifications earn the same salary irrespective of the level of education taught in Canada, Colombia, England (United Kingdom), Greece, Lithuania, Poland, Portugal and Scotland (United Kingdom) (Table D3.1).

Salary structures usually define the salaries paid to teachers at different points in their careers. Deferred compensation, which rewards employees for staying in organisations or professions and for meeting established performance criteria, is also used in teachers' salary structures. OECD data on teachers' salaries are limited to information on statutory salaries at four points of the salary scale: starting salaries, salaries after 10 years of experience, salaries after 15 years of experience, and salaries at the top of the scale. Countries that are looking to increase the supply of teachers, especially those with an ageing teacher workforce or a growing school-age population, might consider offering more attractive starting wages and career prospects. However, to ensure a well-qualified teaching workforce, efforts must be made not only to recruit and select the most competent and best-qualified teachers, but also to retain them. Weak financial incentives may make it more difficult to retain teachers as they approach the peak of their earnings. However, there may be some benefits to compressed pay scales. For example, organisations with smaller differences in salaries among employees may enjoy more trust, freer flows of information and more collegiality among co-workers.

In OECD countries, the salaries of teachers at a given qualification level rise during the course of their career, although the rate of change differs across countries. For lower secondary teachers with the most prevalent qualifications, average statutory salaries are 29% higher than average starting salaries after 10 years of experience, and 37% higher after 15 years of experience. Average salaries at the top of the scale (reached after an average of nearly 26 years) are 67% higher than the average starting salaries. The difference in salaries by level of experience varies widely between countries. At the lower secondary level, salaries at the top of the scale exceed starting salaries by less than 20% in Denmark, Iceland, Norway and Türkiye, whereas salaries at the top of the scale are 2.8 times starting salaries in Korea (after at least 37 years of experience). (Table D3.1 and Education at a Glance Database, http://stats.oecd.org)

Figure D3.2. Lower secondary teachers' average actual salaries compared to the statutory starting and top of the scale salaries (2021)

Annual salaries of teachers in public institutions, in equivalent USD converted using PPPs



Note: Actual salaries include bonuses and allowances.
1. Actual base salaries for starting salary and salary at the top of the scale.
2. Year of reference for actual salaries differs from 2021. Refer to the source table for more information.
3. Starting salary and salary at the top of the scale include the average of fixed bonuses for overtime hours.
4. Salaries at the top of the scale and the minimum qualifications, instead of the maximum qualifications.
5. Salaries at the top of the scale and the most prevalent qualifications, instead of the maximum qualifications.
Countries and other participants are ranked in descending order of the starting salaries for lower secondary teachers with the minimum qualifications.
Source: OECD (2022), Table D3.3 and Education at a Glance Database, http://stats.oecd.org. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

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Teachers' qualification levels can also be associated with different salary scales. On average across OECD countries and other participants, the statutory salary of a lower secondary teacher with the most prevalent qualifications and 15 years of experience is 39% higher than that of a teacher starting out with the minimum qualifications. At the top of the salary range with the maximum qualifications, the average statutory salary is 41% higher than the average starting salary with the minimum qualifications (Table D3.1 and Figure D3.2).

In terms of the maximum statutory salary range (from starting salaries with the minimum qualifications to maximum salaries with the maximum qualifications), in most countries and other participants where starting salaries are below the OECD average, the maximum salaries are also below the OECD average. At the lower secondary level, the most notable exceptions are Colombia, England (United Kingdom), Mexico and Portugal, where starting salaries are at least 5% lower (7-36% lower) than the OECD average, but maximum salaries are at least 42% higher. These differences may reflect the different career paths available to teachers with different qualifications in these countries. The opposite is true in Finland and Iceland, where starting salaries are between 8% and 15% higher than the OECD average, but maximum salaries are lower than the OECD average. This results from these countries' relatively compressed salary scales (Figure D3.2).

In contrast, for lower secondary teachers, maximum salaries (at the top of the scale, with the maximum qualifications) are at least double the starting salaries (for teachers with minimum qualifications) in Colombia, Costa Rica, England

(United Kingdom), France, the French and Flemish Communities of Belgium, Hungary, Ireland, Israel, Japan, Mexico, the Netherlands and Portugal (Figure D3.2).

The salary premium for teachers with the maximum qualifications at the top of the pay scales (which may correspond to a very small proportion of teachers), and those with the most prevalent qualifications and 15 years of experience, also varies across countries. At lower secondary level, the pay gap between these two groups is less than 10% in seven OECD countries and other participants, while it exceeds 60% in seven others (Colombia, the Flemish Community of Belgium, France, Hungary, Israel, Mexico and Portugal). In France, the variation at lower secondary level results from different salary scales between *professeurs certifiés* (teachers with most prevalent qualification) and *professeurs agrégés* (teachers with the maximum qualification) (Figure D3.2 and Table D3.1).

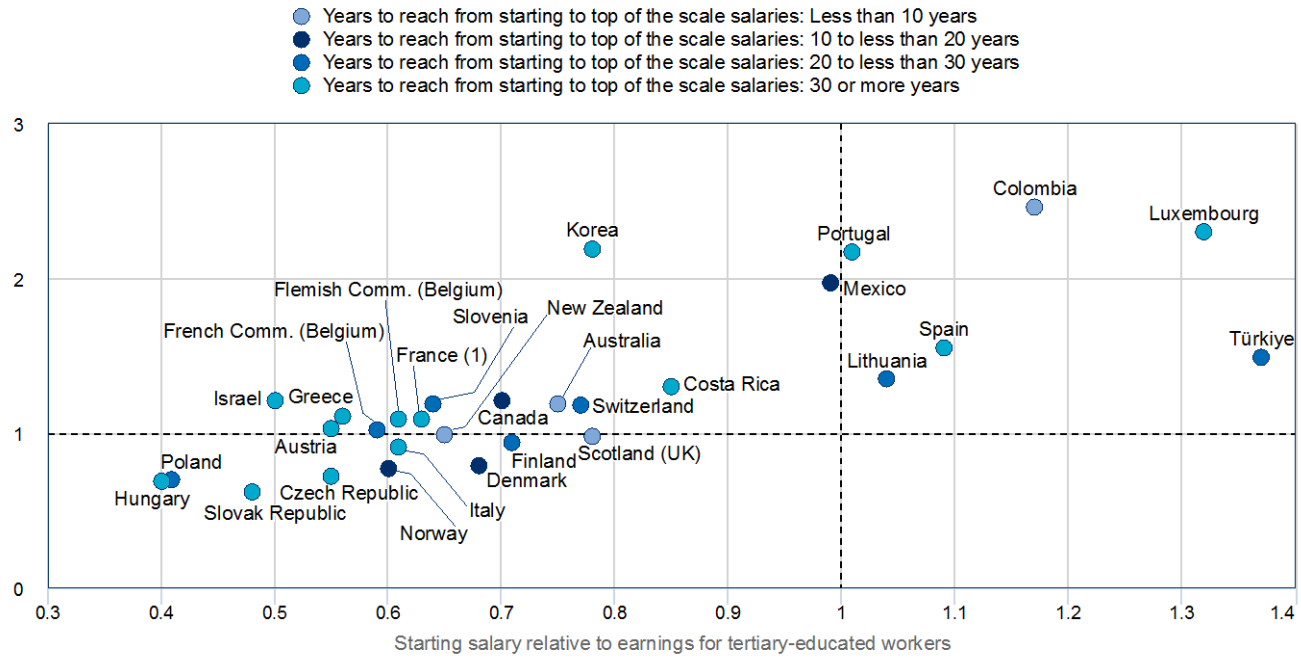
Actual salaries

In addition to statutory salaries, teachers' actual salaries include work-related payments, such as annual bonuses, results-related bonuses, extra pay for holidays, sick-leave pay and other additional payments (see *Definitions* section). These bonuses and allowances can represent a significant addition to base salaries. Actual average salaries are influenced by the prevalence of bonuses and allowances in the compensation system. Differences between statutory and actual average salaries are also linked to patterns of experience and qualifications in the teaching workforce, as these factors have an impact on teachers' salary levels.

Across OECD countries and other participants, in 2021, the average actual salaries of teachers aged 25-64 were USD 41 941 at pre-primary level, USD 47 538 at primary level, USD 50 026 at lower secondary level and USD 53 682 at upper secondary level (Table D3.3).

Figure D3.3. Lower secondary teachers' relative statutory starting and top of the scale salaries and years taken to reach the top of the scale (2021)

Ratio of salaries to the earnings of full-time, full-year workers with tertiary education



Note: Statutory salaries of teachers refer to teachers with most prevalent qualification level.
1. Includes the average of fixed bonuses for overtime hours.
Source: OECD (2022), Education at a Glance Database, http://stats.oecd.org. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

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There are 27 OECD countries and other participants with available data on both the statutory salaries of teachers with 15 years of experience and the most prevalent qualifications, and the actual salaries of 25-64 year-old teachers for at least one level of education. Actual annual salaries are at least 10% higher than statutory salaries in 6 of these countries at pre-primary level and in 12 at upper secondary level. This shows the effect of additional allowances (included in data for actual but not statutory salaries) and of differing levels of experience in the teaching populations of countries (Table D3.3).

Comparing teachers' actual salaries to minimum and maximum statutory salaries also gives an indication of the distribution of teachers between the minimum and maximum salary levels. At the lower secondary level, the actual salaries of 25-64 year-old teachers are, on average, 35% higher than the statutory starting salary for teachers with the minimum qualification. This difference is less than 20% in Denmark, Germany, Scotland (United Kingdom) and Sweden, which may result from a smaller range (of statutory salaries between starting and top of the scale) and/or smaller additional allowances compared to other countries. In contrast, in Costa Rica, Ireland, Israel, Latvia, the Netherlands and the Slovak Republic, the difference is over 60%, suggesting that most teachers are paid much more than the minimum salary (Figure D3.2).

A similar analysis comparing actual salaries with the maximum salary shows that actual salaries of 25-64 year-old teachers are, on average, 4% lower than the statutory salary at the top of the scale for teachers with the maximum qualification. The difference is greater than 35% in England (United Kingdom), the Flemish and French Communities of Belgium and Portugal, suggesting that few teachers are paid at or near the maximum salary level. In seven countries, teachers' average actual salaries are higher than the maximum statutory salary (Costa Rica, the Czech Republic, Denmark, Finland, Iceland, Lithuania and the Slovak Republic), which implies that allowances awarded in addition to the statutory salary have a substantial effect on teachers' take-home pay (Figure D3.2).

Education systems compete with other sectors of the economy to attract high-quality graduates as teachers. Research shows that salaries and alternative employment opportunities that are available to these graduates are important factors in the attractiveness of teaching (Johnes and Johnes, 2004[3]). Teachers' salaries relative to other occupations with similar education requirements, and their likely growth in earnings, may have a huge influence on a graduate's decision to become a teacher and stay in the profession (see Box D3.3 for a comparison of starting teacher's salaries and earnings of recent tertiary graduates).

In most OECD countries, a tertiary degree is required to become a teacher at all levels of education (see Indicator D6), meaning that the likely alternative to teacher education is a similar tertiary programme. Thus salary levels and labour-market conditions in different countries can be interpreted by comparing teachers' actual salaries with the earnings of other tertiary-educated professionals: 25-64 year-old full-time, full-year workers with a similar educational attainment (ISCED levels 5 to 8). Moreover, to ensure that comparisons between countries are not biased by differences in the distribution of tertiary attainment among teachers and tertiary-educated workers more generally, teachers' actual salaries are also compared to a weighted average of earnings of similarly educated workers (where the earnings are weighted by the proportion of teachers with similar tertiary attainment; see Table X2.8 in Annex 2 for the proportion of teachers by attainment level, and the *Methodology* section for more details).

In very few of the 19 countries and other participants with available data for at least one level of education do teachers' actual salaries reach or exceed those of similarly educated workers. They amount to 65% or less of the earnings of similarly educated workers in Hungary and the United States. However, upper secondary teachers in Germany and New Zealand have actual salaries that are the same as those of similarly educated workers (Table D3.2).

Considering how few countries have available data for this relative measure of teachers' salaries, a second benchmark is based on the actual salaries of all teachers relative to earnings for full-time, full-year workers with tertiary education (ISCED levels 5 to 8). Against this benchmark, teachers' actual salaries relative to other tertiary-educated workers increase with higher education levels. On average, primary teachers' salaries amount to 86% of the full-time, full-year earnings of tertiary-educated 25-64 year-olds. Lower secondary teachers earn 90% of this benchmark salary and upper secondary teachers 96% (Table D3.2).

In almost all countries and other participants with available information, and at almost all levels of education, teachers' actual salaries are lower than those of tertiary-educated workers. The lowest relative salaries are at pre-primary level: in Hungary and the United States, pre-primary teachers' salaries are 57% of those of tertiary-educated workers, and in the Slovak Republic they are 58%. However, in some countries, teachers earn more than tertiary-educated adults, either at all levels of education (Costa Rica, Lithuania and Portugal) or only at some levels (at the pre-primary level in Australia; at upper secondary level in the Flemish Community of Belgium, Finland and Israel; and at secondary level in Germany and

Ireland). In Costa Rica (at the secondary level) and Lithuania (at primary and secondary levels), and Portugal, teachers earn at least 30% more than tertiary-educated workers (Table D3.2 and Figure D3.1).

Finally, teachers' pay rises at different rates over the course of their careers in different countries. On average among OECD members and other participants with available data, for lower secondary teachers with the most prevalent qualification starting salaries represent 76% of the average earnings of workers with a tertiary education, but salaries at the top the scale amount to 126% of average earnings. There is, however, substantial variation between countries in terms of the competitiveness of salaries and the time needed to progress from the starting salaries to the top of the scale. The time taken to progress is 26 years on average but ranges from 4 years in Scotland (United Kingdom) to 42 years in Hungary. These differing rates of progression mean that countries with similar relative salaries at the bottom and top of the scale might not necessarily be offering similarly competitive teacher compensation. For example, in Australia, starting salaries are 75% of tertiary-educated workers earnings and salaries at the top of the scale are 119% of tertiary-educated workers earnings. This is similar to Switzerland where the equivalent figures are 77% and 118%. However teachers can reach the top of the scale in nine years in Australia, compared with 25 years in Switzerland (Figure D3.3).

Box D3.1. Comparability issues related to actual salaries of teachers and school heads

Meaningful international comparisons rely on the provision and implementation of rigorous definitions and a related statistical methodology. Salaries presented in this indicator relate to full-time, full-year classroom teachers and school heads at different levels of education. In view of the diversity across countries of both their education and their teacher compensation systems, adhering to these guidelines and methodology is not always straightforward. Some caution is therefore required when interpreting these data.

Classroom teachers

Classroom teachers includes those whose primary or major activity involves direct student instruction, special education teachers and other teachers who work with students as a whole class in a regular classroom in small groups in a resource room, or one-on-one inside or outside a regular classroom. All of these groups of teachers are included in the data for the great majority of countries. Teachers temporarily not at work (e.g. for reasons of illness or injury, maternity or parental leave, holiday or vacation) should also be included in actual salary data but in several countries these teachers were excluded.

Special education teachers in special schools and teaching staff whose duties include some student instruction should be excluded from the coverage of data when their primary or major activity is not direct student instruction. However they are not excluded in some countries as it is not always possible to distinguish them from other teachers.

Level of education

The salaries of teachers are reported by level of education and should relate only to that level. However the organisation of either the delivery or financing of education can make it difficult to report data by a single level of education. This is most often the case when different levels of education are delivered in combination, for instance for combined lower and upper secondary levels. In these cases, differences in average actual salaries of teachers resulting from differences in the distribution of experienced teachers between levels of education, for example, will not appear in the indicator.

Part-year and part-time teachers

In many OECD countries and other participants, a substantial share of teachers work either part-year, or part-time or both. Part-year teachers, who may work for 9-10 months of the year as teachers (for example in the United States), may have additional employment that increases their overall earnings. In these cases their actual salaries only refer to their salaries as teachers and do not refer to a similar reference period compared to other countries.

To ensure the consistency of data across countries, salaries of teachers refer to full-time work. However, some countries include data on part-time teachers. These data may create a bias in the average actual salaries reported depending on how they are weighted in the calculation of average actual salaries. Generally, measures of teachers' workload (teaching hours, teaching load or working hours) are used to weight salaries of part-time teachers.

Type of institution

The information on salaries of teachers relate to teaching staff in public educational institutions only. However, in a small number of countries, teachers in government-dependent private schools are included. This is most often the case when teachers in government-dependent private schools are subject to a similar compensation system (and employment regulation) as teachers in public schools.

Time period

Actual salaries of teachers refer to annual data and should cover the school year. However, some countries report data collected for a period different from the school year (most commonly a calendar year). A small group of countries use the salaries paid in a representative pay period (a week, a month etc.) and weight this up to be equivalent to a school year.

For more information on comparability issues, see Box D3.1 of *Education at a Glance 2019* (OECD, 2019[2]), Box D3.1 of *Education at a Glance 2020* (OECD, 2020[4]) and the country-specific notes in Annex 3.

School heads' salaries

School heads' responsibilities may vary between countries and also within countries, depending on the schools they lead. School heads may exercise educational responsibilities (which may include teaching, but also responsibility for the general functioning of the institution in areas such as the timetable, implementation of the curriculum, decisions about what is taught, and the materials and methods used). They may also have other administrative, staff management and financial responsibilities (see Indicator D4 for more details).

Differences in the nature of the work carried out and the hours worked by school heads (compared to teachers) are reflected in the compensation systems used within countries (see Tables D4.2 and D4.3 for the working time of teachers and school heads).

Statutory salaries

School heads may be paid according to a specific salary range and may or may not receive a school-head allowance on top of their statutory salaries. However, they can also be paid in accordance with teachers' salary scale(s) and receive an additional school-head allowance. The use of teachers' salary ranges may reflect the fact that school heads are initially teachers with additional responsibilities. At lower secondary level, school heads are paid according to teachers' salary scales with a school-head allowance in 13 out of the 33 countries and other participants with available information, and according to a specific salary range in the other 20 countries and other participants. Of these, 13 countries and other participants have no specific school-head allowance and 7 countries have a school-head allowance included in the salary. The amounts payable to school heads (through statutory salaries and/or school-head allowances) may vary according to criteria related to the school(s) where the school head is based (for example the size of the school based on the number of students enrolled, or the number of teachers supervised). They could also vary according to the individual characteristics of the school heads themselves, such as the duties they have to perform or their years of experience (Table D3.12, available on line).

Considering the large number of criteria involved in the calculation of school heads' statutory salaries, the statutory salary data for school heads focus on those related to the minimum qualification requirements to become a school head, and Table D3.4 shows only the minimum and maximum values. Caution is necessary when interpreting these values because salaries often depend on many criteria and as a result, few school heads may earn these amounts.

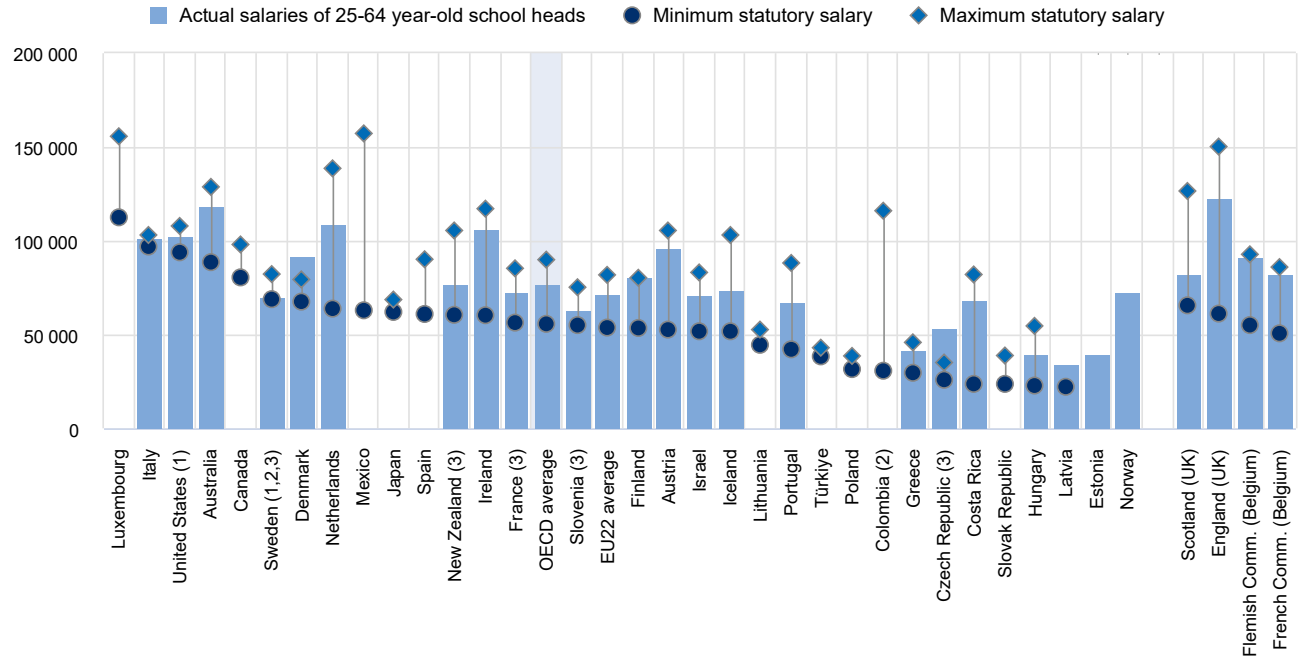
About half of OECD countries and other participants have similar pay ranges for primary and lower secondary school heads, while upper secondary school heads benefit from higher statutory salaries on average. At lower secondary level, the minimum salary for school heads is USD 55 776 on average across OECD countries and other participants, ranging from USD 22 101 in Latvia to USD 112 506 in Luxembourg. The maximum salary is USD 89 897 on average, ranging from USD 35 019 in the Czech Republic to USD 157 196 in Mexico. These values should be interpreted with caution, as minimum and maximum statutory salaries refer to school heads in different types of schools. (Table D3.4).

On average across OECD countries and other participants, the maximum statutory salary of a school head with the minimum qualifications is 79% higher than the minimum statutory salary at primary level, 68% higher than the minimum at lower secondary level and 69% higher at upper secondary level. There are only ten countries or other participants where school

heads at the top of the scale can expect to earn at least twice the statutory starting salary in at least one of these levels of education; in Colombia and Costa Rica, they can even expect to earn more than three times the starting salary (Table D3.4).

Figure D3.4. Lower secondary school heads' average actual salaries compared to the statutory minimum and maximum salaries (2021)

Annual salaries of school heads in public institutions, in equivalent USD converted using PPPs



Note: Actual salaries include bonuses and allowances.
1. Actual base salaries for minimum and maximum statutory salaries.
2. Year of reference for actual salaries differs from 2021. Refer to the source table for more information.
3. Year of reference for minimum and maximum statutory salaries differs from 2021. Refer to the source table for more information.
Countries and other participants are ranked in descending order of minimum salaries of school heads.
Source: OECD (2022), Table D3.3 and Education at a Glance Database, http://stats.oecd.org. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

StatLink https://stat.link/in3fev

The minimum statutory salaries for school heads with the minimum qualifications are higher than the starting salaries of teachers (with most prevalent qualification) in all OECD countries and other participants except Colombia (at pre-primary and primary levels) and Costa Rica. The difference increases with level of education: on average, they are 48% higher at primary level, 54% higher at lower secondary level and 56% higher at upper secondary level. In a number of countries, the minimum statutory salary for school heads is higher than the maximum salary for teachers. At lower secondary level, this is the case in Australia, Canada, Denmark, England (United Kingdom), Finland, Iceland, Israel, Italy, Japan, Lithuania, Mexico, New Zealand, Scotland (United Kingdom), the Slovak Republic, Sweden and the United States (Figure D3.4 and Table D3.4).

Similarly, the maximum statutory salaries for school heads are higher than the maximum salaries for teachers for all OECD countries and other participants with available data. At lower secondary level, the maximum statutory salary of a school head is 56% higher on average than for teachers (with the most prevalent qualifications). In England (United Kingdom), Iceland, Mexico, New Zealand and Scotland (United Kingdom), school heads' maximum salaries are more than twice statutory teachers' salaries at the top of the scale (Figure D3.4 and Table D3.4).

Actual salaries

Across OECD countries and other participants, average actual salaries for school heads aged 25-64 ranged from USD 71 462 at primary level to USD 76 831 at lower secondary level and USD 83 022 at upper secondary level. The actual salaries of school heads are higher than those of teachers, and the premium increases with levels of education. On average, school heads' actual salaries in 2021 were 52% higher than teachers' at primary level, 55% higher at lower secondary level and 56% higher at upper secondary level (Table D3.3).

The differences vary widely between countries and levels of education, however. The highest premium for school heads over teachers was in England (United Kingdom) at secondary levels, and Italy at primary and secondary levels, where school heads' actual salaries are more than twice those of teachers. The lowest premiums, of less than 30%, are in Estonia (at primary and secondary), Finland (pre-primary), France (pre-primary and primary), Latvia (lower secondary) and Norway (pre-primary). For France, the low premiums can be explained by the fact that pre-primary and primary school heads are teachers relieved from part of their teaching duties. They receive the salaries of teachers at this level of education, with the addition of a specific school-head allowance. Other countries show a steep rise in salaries of school heads compared to teachers at the secondary level, but a moderate difference at primary level. For example, in Ireland, school heads' actual salaries are 46% higher than teachers' at primary level, but the difference is 72% at lower and upper secondary level. In Costa Rica, Estonia, Latvia and Slovenia, the difference is much larger at pre-primary level than at primary and lower secondary levels (Table D3.3; see Box D3.2 for variations at subnational level).

The career prospects of school heads and their relative salaries are also a signal of the career progression pathways available to teachers and the compensation they can expect in the longer term. Not only do school heads earn more than teachers, they also, unlike teachers, typically earn more than similarly educated workers. This salary premium compared to tertiary-educated workers holds at all levels of education considered and tends to increase with the level of education. Among the 17 OECD countries and other participants with available data (for at least one level), it is only in Hungary and the United States – and Denmark, Finland and Norway at pre-primary level – where school heads' actual salaries are at least 5% lower than the earnings of similarly educated workers. In contrast, school heads' salaries are at least 40% higher than those of similarly educated workers in England (United Kingdom), Israel (upper secondary) and New Zealand (primary and secondary) (Table D3.2).

As with teachers, there are only a few countries with available data for this relative measure of school heads' salaries, so a second benchmark is based on actual salaries relative to earnings for full-time, full-year workers with tertiary education. Using this measure, school heads earn more than tertiary-educated adults at all levels of education in most countries. However, school heads only earn at least 5% less than tertiary-educated adults in the Czech Republic (pre-primary), Denmark (pre-primary), Finland (pre-primary), Hungary and Norway (pre-primary) (Table D3.2).

Box D3.2. Subnational variations in teachers' and school heads' salaries at pre-primary, primary and secondary levels

Within countries, teachers' statutory salaries can vary according to the level of education and their level of experience. Salaries can also vary significantly across subnational entities, especially in federal countries where salary requirements may be defined at the subnational level. Data provided by four OECD countries (Belgium, Canada, the United Kingdom and the United States) illustrate these variations at the subnational level.

The extent of subnational differences in statutory salaries varies across these four countries, depending on the level of education and the stage teachers have reached in their careers. In 2021 in Belgium, for example, the annual starting salary of a primary school teacher varied by less than 4% (USD 1 510), from USD 39 498 in the French Community to USD 41 008 in the Flemish Community. In comparison, the United States saw the greatest differences: the starting salary of a primary school teacher varied by 81% (USD 28 070) across subnational entities, ranging from USD 34 750 in Oklahoma to USD 62 820 in New York. At lower secondary and upper secondary levels, starting salaries varied the least in Belgium (by 4%, from USD 39 498 in French Community to USD 41 008 in the Flemish Community at the lower secondary level, and from USD 49 105 in French Community to USD 51 160 in the Flemish Community at the upper secondary level) and the most in Canada (by 89%, from USD 31 879 in Quebec to USD 60 240 in Northwest Territories).

In Belgium, the variation in statutory salaries between subnational entities remains relatively consistent across all levels of education and stages of teachers' careers. In contrast, in both Canada and the United Kingdom, the variation is similar

at different levels of education, but greater for starting salaries than for salaries at the top of the scale. For example, at the upper secondary level, starting salaries in the United Kingdom varied by 37% (USD 11 350) between subnational entities (from USD 30 931 to USD 42 280), while the difference was only 4% (USD 2 228, from USD 52 660 to USD 54 889) at the top of the scale. In the United States, there was no clear pattern in the extent of the variation of statutory salaries across subnational entities at different levels of education and stages of teachers' careers. At lower secondary level, the variation was the smallest for starting salaries, ranging from USD 36 147 to USD 60 474 (a difference of 67%, or USD 24 328) and the largest for salaries at the top of the scale, ranging from USD 45 357 to USD 113 990 (a difference of 151%, or USD 68 632).

There are also large subnational variations in actual salaries of teachers and school heads across the three countries with available data in 2021 (Belgium, the United Kingdom and the United States). In the United Kingdom, the subnational variation in actual salaries was greater for school heads than for teachers. For example, at the upper secondary level, teachers' salaries in the United Kingdom ranged from USD 49 585 in Wales to USD 55 390 in Northern Ireland, a difference of 12% or USD 5 805. In comparison, school heads' salaries ranged from USD 82 718 in Scotland to USD 122 697 in England, a difference of 48% or USD 39 979. Subnational variations in actual salaries were much smaller for both teachers and school heads in Belgium. For example, the salaries of upper secondary school heads ranged from USD 97 701 in the French Community to USD 102 965 in the Flemish Community, a difference of 5%, or USD 5 263. In the United States, subnational variation in actual salaries is similar for both teachers and school heads, but much larger than in Belgium. For example, the salaries of upper secondary school heads ranged from USD 78 294 in South Dakota to USD 151 158 in New Jersey, a difference of 93%, or USD 72 864.

The extent of the subnational variation in actual salaries (for teachers and school heads) also varies according to level of education. In the United Kingdom, the subnational variation in salaries of school heads is largest at lower and upper secondary levels (but the variation is similar for teachers at different levels of education). In the United States, subnational variation in the actual salaries of teachers and school heads was greater at the primary level than at lower and upper secondary levels.

Source: *Education at a Glance Database*, http://stats.oecd.org.

Salary trends for teachers since 2010

Trends in statutory salaries

Between 2010 and 2021, the statutory salaries of teachers (with the most prevalent qualifications and 15 years of experience) increased overall in real terms (i.e. when adjusted for increases in the cost of living) in most of the countries for which data are available. However, only two-fifths of OECD countries have the relevant data available for the whole period with no break in the time series. Among these countries, around two-thirds show an increase in such salaries over this period and one-third show a decrease (Table D3.6, available on line).

The biggest real-terms decreases in statutory salaries between 2010 and 2021 were in Greece, where statutory salaries fell by up to 30% at pre-primary, primary and secondary levels. There were also smaller declines in teachers' statutory salaries in Finland (up to 5%), Ireland (by around 2%), Italy (over 5%), Japan (by around 1%), Portugal (over 5%) and Spain (by between 5-8%). During the same period, statutory salaries increased by more than 30% for teachers in Israel (pre-primary and secondary levels) and the Slovak Republic (Figure D3.5 and Table D3.6, available on line).

Over the period 2015 to 2021, for which four-fifths of OECD countries and other participants have comparable trend data for at least one level of education, around three-quarters showed an increase in real terms in the statutory salaries of teachers (with 15 years of experience and the most prevalent qualifications). On average across OECD countries and other participants with available data for all the reference years between 2015 and 2021, statutory salaries increased by about 3% at primary level, 3% at lower secondary level and 5% at upper secondary level. The increase exceeded 20% in the Czech Republic, Israel (at upper secondary), Lithuania and the Slovak Republic (Figure D3.5 and Table D3.6, available on line).

In contrast, statutory salaries have decreased slightly since 2015 in a few countries and other participants including the French Community of Belgium, Canada, Costa Rica, Greece, Japan and Norway (upper secondary). The decrease is the largest in Costa Rica where it reached 14% at pre-primary, 13% at primary and over 35% at secondary level (Figure D3.5 and Table D3.6, available on line).

Trends in actual salaries

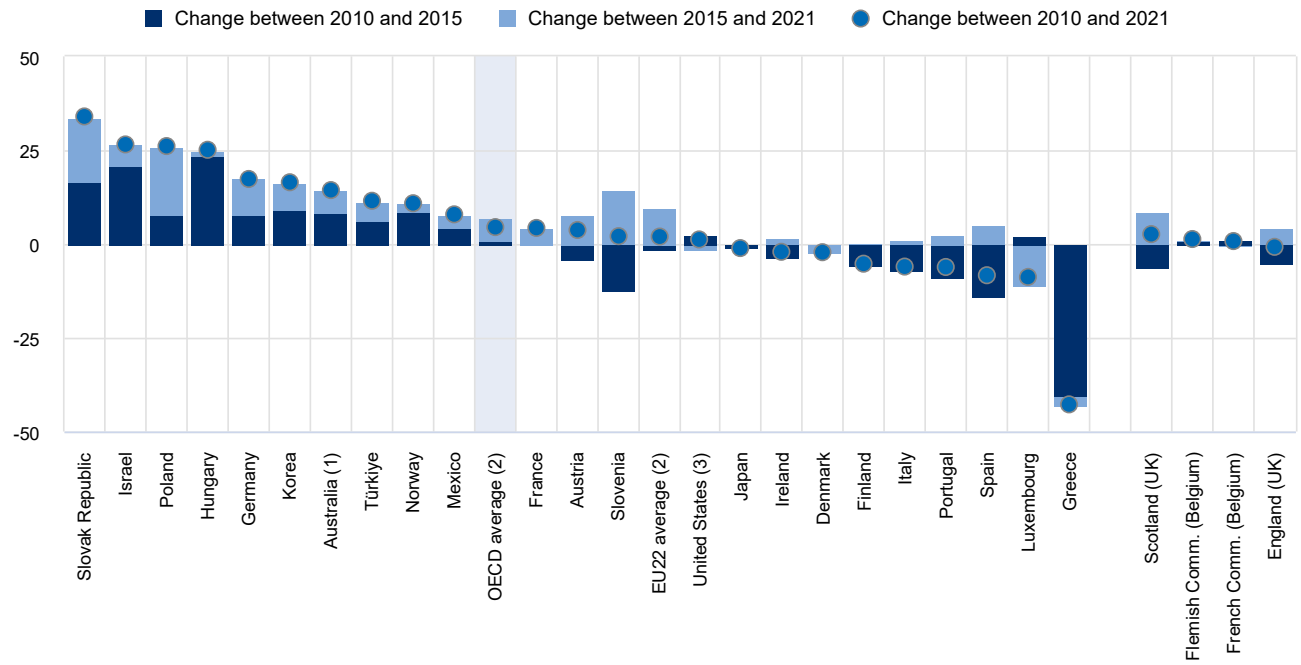
Between 2010 and 2020, teachers' actual salaries increased overall in real terms in most countries for which data are available. Around two-thirds of countries with trend data show an increase over this period and one-third a decrease. However, only one in three OECD countries have available data on actual salaries of teachers aged 25-64 for this period with no break in the time series (Table D3.7, available on line).

For the countries with available data and no breaks in the time series, actual salaries generally increased between 2010 and 2020. The increase in salaries was over 20% at all levels of education in the Czech Republic and Hungary, and at upper secondary level in Iceland. In Sweden, actual salaries increased by 19% at pre-primary level and by 22-29% at primary and secondary levels. There were only five countries and other participants where actual salaries decreased in at least one level of education. They fell by more than 6% in real terms in England (United Kingdom) and by 12% for upper secondary teachers in the Flemish Community of Belgium (Table D3.7, available on line).

Over the period 2015 to 2020, for which two-thirds of OECD countries and other participants have comparable trend data for at least one level of education, around three-quarters of these countries showed an increase in real terms in actual salaries. On average across OECD countries and other participants with available data for all the reference years between 2015 and 2020, actual salaries increased by about 2% at primary level, 2% at lower secondary level and 5% at upper secondary level. The increase exceeded 20% in the Czech Republic, Estonia, Latvia, Lithuania and the Slovak Republic (Table D3.7, available on line).

Figure D3.5. Change in lower secondary teachers' statutory salaries between 2010 and 2021

Index of change in real teachers' statutory salaries (2015 = 100)



Note: Index of change in teachers' statutory salaries based on the most prevalent qualifications after 15 years of experience, converted to constant prices using deflators for private consumption
1. Changes up to 2020 instead of 2021.
2. Average of countries with available data for both periods.
3. Actual base salaries.
Countries and other participants are ranked in descending order of change in the index between 2010 and 2021.
Source: OECD (2022), Table D3.6 (web only), http://stats.oecd.org. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

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Formation of base salary and additional payments: Incentives and allowances

Statutory salaries, based on pay scales, are only one component of the total compensation of teachers and school heads. School systems may also offer additional payments to teachers and school heads, such as allowances, bonuses or other rewards. These may take the form of financial remuneration and/or reductions in the number of teaching hours, and decisions on the criteria used for the formation of the base salary are taken at different decision-making levels (Tables D3.10 and D3.11, available on line).

Criteria for additional payments vary across countries. In the large majority of countries and other participants, teachers' core tasks (teaching, planning or preparing lessons, marking students' work, general administrative work, communicating with parents, supervising students, and working with colleagues) are rarely compensated through specific bonuses or additional payments (Table D3.8, available on line). Teachers may also be required to have some responsibilities or perform some tasks without additional compensation (see Indicator D4 for the tasks and responsibilities of teachers). Taking on other responsibilities, however, often entails some sort of extra compensation.

At lower secondary level, teachers who participate in school management activities in addition to their teaching duties received extra compensation in three-fifths of the countries and other participants with available information. It is also common to award additional payments, either annual or occasional, when teachers teach more classes or hours than required by their full-time contract, have responsibility as a class or form teacher, or perform special tasks, such as training student teachers (Table D3.8, available on line).

Additional compensation, either in the form of occasional additional or annual payments, or through increases in basic salary, is also awarded for outstanding performance to lower secondary teachers in about three-fifths of the OECD countries and other participants with available data. Additional payments can also include bonuses for special teaching conditions, such as teaching students with special needs in regular schools or teaching in disadvantaged, remote or high-cost areas (Table D3.8, available on line).

There are also criteria for additional payments for school heads, but fewer tasks or responsibilities lead to additional payments compared to teachers. At lower secondary level, a few countries do not offer any type of additional compensation to their school heads: Australia, Austria, the French Community of Belgium and Portugal (Table D3.9, available on line).

Among the 32 countries and other participants with available data, around one-quarter provide additional compensation to school heads for participating in management tasks above and beyond their usual responsibilities as school heads or for working overtime. At lower secondary level, about half of the countries and other participants provide additional compensation for teachers when they take on extra responsibilities, but do not provide any additional payments to school heads (Tables D3.8 and D3.9, available on line). The extent to which school heads receive additional compensation for taking on extra responsibilities and the activities for which school heads are compensated vary across countries. As with teachers (see above), in some countries, such as Greece, a number of these responsibilities and tasks are considered part of school heads' duties and so they are not compensated with any extra allowances.

At lower secondary level, school heads are awarded additional compensation for outstanding performance in more than one-third of the countries and other participants with available data, just as teachers are. However, Austria, England (United Kingdom), Israel, Portugal and Türkiye reward teachers for outstanding performance, but not school heads. In contrast, school heads in Colombia and Spain are rewarded for high performance, but teachers are not. In Spain, this allowance is fixed after a positive performance evaluation and can be kept for the rest of their working life. In France, part of the school-head allowance is awarded according to the results of a professional interview and is paid every three years (Tables D3.8 and D3.9, available on line).

Both teachers and school heads are also liable to receive additional payments for working in disadvantaged, remote or high-cost areas in half of the countries and other participants with available data, except in Australia, where such incentives are only provided to teachers (Tables D3.8 and D3.9, available on line).

Box D3.3. Lower secondary teachers' starting salaries relative to earnings of recent tertiary graduates (2018)

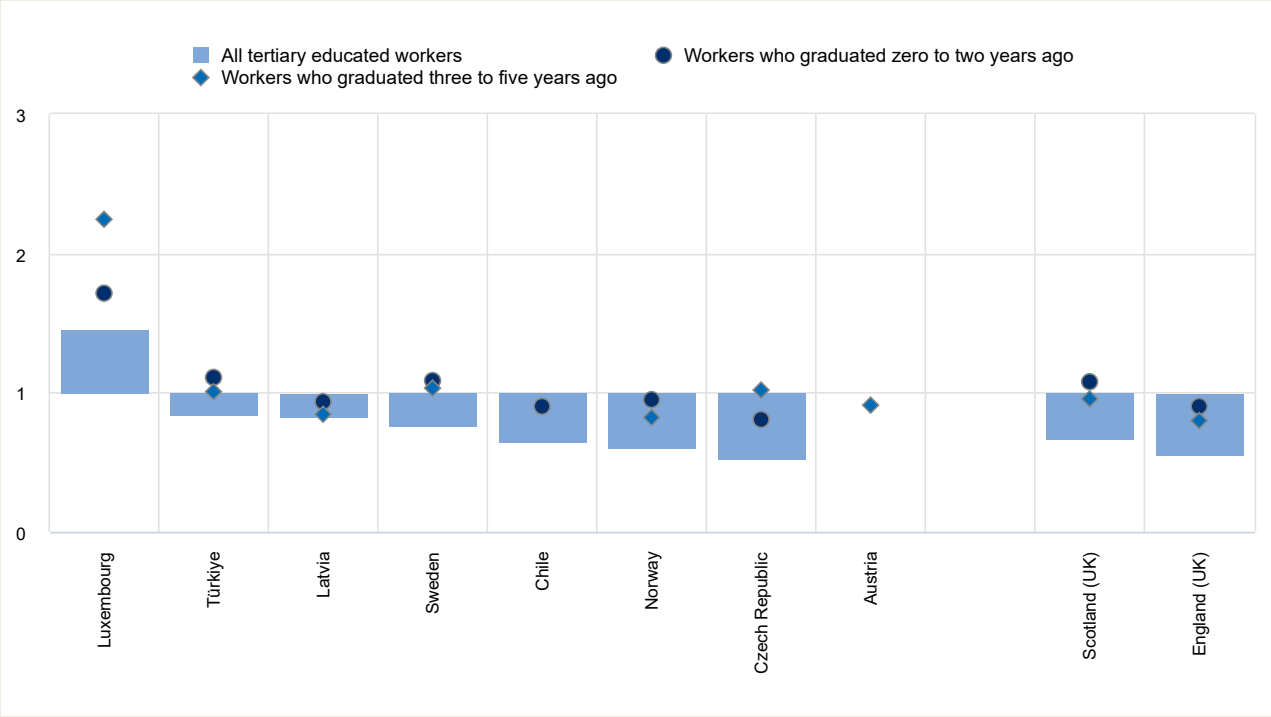
Comparing teachers' salaries with those of recent tertiary graduates can provide some insight into the attractiveness of the teaching profession to recent graduates. To analyse this, data on the earnings of recent graduates from bachelor's or equivalent programmes who are in full-time full-year work was collected for reference year 2018 and then compared to the statutory starting salaries of lower secondary teachers with the most prevalent qualification.

For the ten countries and other participants with available data for both earnings of recent graduates and starting salaries of lower secondary teachers (Figure D3.6), teachers' salaries appear competitive with the earnings of recent graduates, but become less competitive as graduates gain work experience. This is the result of the increase in earnings of tertiary-educated workers.

In four of these ten countries and other participants, new teachers earn more than the average full-time, full-year worker who has graduated from a bachelor's programme in the last two years. The time since graduation has a considerable impact on the level of earnings, and therefore on teachers' relative salaries, but the effect is not consistent across countries. In Luxembourg, Sweden and Türkiye, teachers' starting salaries are higher than average earnings of workers who graduated in the last two years and also of those who graduated between three and five years ago. In contrast, in Scotland (United Kingdom) starting salaries of teachers are higher than the earnings of the most recent graduates, but they are lower than the earnings of graduates who completed their programmes three to five years earlier (Figure D3.6).

Figure D3.6. Lower secondary teachers' starting salaries relative to earnings of tertiary graduates by years since graduation (2018)

Ratio of starting salaries to the earnings of full-time, full-year workers with tertiary education



Note: Data refer to ratio of salary, using annual average salaries (including bonuses and allowances) of teachers and school heads in public institutions relative to the earnings of full-time, full-year workers with tertiary education by years since graduation.
Countries and other participants are ranked in descending order of the ratio of teachers' salaries to earnings for all full-time, full-year tertiary-educated workers aged 25-64.
Source: OECD (2022), Education at a Glance Database, http://stats.oecd.org. See Source section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

StatLink https://stat.link/974rsq

The most prevalent qualification required to be a teacher also varies within this group. In Austria, Chile, England (United Kingdom), Latvia, Norway, Scotland (United Kingdom) and Türkiye, teachers are required to have at least a bachelor's degree or equivalent whereas in the Czech Republic, Luxembourg and Sweden teachers are required to have at least a master's degree or equivalent. As master's graduates tend to earn more than those with only a bachelor's or equivalent degree, it would be expected that the starting salaries of teachers would be less competitive when compared to graduates of master's programmes or equivalent than to graduates of bachelor's programmes or equivalent. The evidence supports this. Teachers' starting salaries represent 185% of the average earnings of a worker who graduated from a master's programme in the last two years in Luxembourg, 92% in Sweden and 68% in Latvia. In all cases this is lower than the equivalent figure for graduates from bachelor's programmes (Annex 3, Table X3.D3.8).

Definitions

Teachers refer to professional personnel directly involved in teaching students. The classification includes classroom teachers, special education teachers and other teachers who work with a whole class of students in a classroom, in small groups in a resource room, or in one-to-one teaching situations inside or outside a regular class.

School head refers to any person whose primary or major function is heading a school or a group of schools, alone or within an administrative body such as a board or council. The school head is the primary leader responsible for the leadership, management and administration of a school.

Actual salaries for teachers/school heads aged 25-64 refer to the annual average earnings received by full-time teachers/school heads aged 25-64, before taxes. It is the gross salary from the employee's point of view, since it includes the part of social security contributions and pension-scheme contributions that are paid by the employees (even if deducted automatically from the employees' gross salary by the employer). However, the employers' premium for social security and pension is excluded. Actual salaries also include work-related payments, such as school-head allowance, annual bonuses, results-related bonuses, extra pay for holidays and sick-leave pay. Income from other sources, such as government social transfers, investment income and any other income that is not directly related to their profession is not included.

Earnings for workers with tertiary education are average earnings for full-time, full-year workers aged 25-64 with an education at ISCED level 5, 6, 7 or 8.

Salary at the top of the scale refers to the maximum scheduled annual salary (top of the salary range) for a full-time classroom teacher (for a given level of qualification of teachers recognised by the compensation system).

Salary after 15 years of experience refers to the scheduled annual salary of a full-time classroom teacher. Statutory salaries may refer to the salaries of teachers with a given level of qualification recognised by the compensation system (the minimum training necessary to be fully qualified, the most prevalent qualifications or the maximum qualification), plus 15 years of experience.

Starting salary refers to the average scheduled gross salary per year for a full-time classroom teacher with a given level of qualification recognised by the compensation system (the minimum training necessary to be fully qualified or the most prevalent qualifications) at the beginning of the teaching career.

Statutory salaries refer to scheduled salaries according to official pay scales. The salaries reported are gross (total sum paid by the employer) less the employer's contribution to social security and pension, according to existing salary scales. Salaries are "before tax" (i.e. before deductions for income tax).

Methodology

Data on teachers' salaries at lower and upper secondary level refer only to general programmes.

Salaries were converted using purchasing power parities (PPPs) for private consumption from the *OECD National Accounts Statistics database*. The period of reference for teachers' salaries is from 1 July 2020 to 30 June 2021. The reference date for PPPs is 2020/21, except for some southern hemisphere countries (e.g. Australia and New Zealand), where the academic year runs from January to December. In these countries, the reference year is the calendar year (i.e. 2021). Tables with

salaries in national currency are included in Annex 2. To calculate changes in teachers' salaries (Tables D3.6 and D3.7, available on line), the deflator for private consumption is used to convert salaries to 2015 prices.

In most countries, the criteria to determine the most prevalent qualifications of teachers are based on a principle of relative majority (i.e. the level of qualifications of the largest proportion of teachers).

In Table D3.2, the ratios of salaries to earnings for full-time, full-year workers with tertiary education aged 25-64 are calculated based on weighted averages of earnings of tertiary-educated workers (Columns 2 to 5 for teachers and Columns 10 to 13 for school heads). The weights, collected for every country individually, are based on the percentage of teachers or school heads by ISCED level of tertiary attainment (see Tables X2.8 and X2.9 in Annex 2). The ratios have been calculated for countries for which these data are available. When data on earnings of workers referred to a different reference year than the 2021 reference year used for salaries of teachers or school heads, a deflator has been used to adjust earnings data to 2021. For all other ratios in Table D3.2 and those in Table D3.5 (available on line), information on all tertiary-educated workers was used instead of weighted averages. Data on the earnings of workers take account of earnings from work for all individuals during the reference period, including salaries of teachers. In most countries, the population of teachers is large and may impact on the average earnings of workers.

For more information, please see the *OECD Handbook for Internationally Comparative Education Statistics 2018* (OECD, 2018[5]) and Annex 3 for country-specific notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

Source

Data on salaries and bonuses for teachers and school heads are derived from the 2021 joint OECD/Eurydice data collection on salaries of teachers and school heads. Data refer to the 2020/21 school year and are reported in accordance with formal policies for public institutions. Data on earnings of workers are based on the regular data collection by the OECD Labour Market and Social Outcomes of Learning Network.

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Indicator D3 tables

Tables Indicator D3. How much are teachers and school heads paid?

Table D3.1	Teachers' statutory salaries based on the most prevalent qualifications at different points in teachers' careers (2021)
Table D3.2	Teachers' and school heads' actual salaries relative to earnings of tertiary-educated workers (2021)
Table D3.3	Teachers' and school heads' average actual salaries (2021)
Table D3.4	School heads' minimum and maximum statutory salaries, based on minimum qualifications (2021)
WEB Table D3.5	*Teachers' actual salaries relative to earnings of tertiary-educated workers, by age group and gender (2021)*
WEB Table D3.6	*Trends in teachers' statutory salaries, based on the most prevalent qualifications after 15 years of experience (2000 and 2005 to 2021)*
WEB Table D3.7	*Trends in average teachers' actual salaries (2000, 2005 and 2010 to 2021)*
WEB Table D3.8	*Criteria used for base salaries and additional payments awarded to teachers in public institutions, by level of education (2021)*
WEB Table D3.9	*Criteria used for base salaries and additional payments awarded to school heads in public institutions, by level of education (2021)*
WEB Table D3.10	*Decision-making level for criteria used for determining teachers' base salaries and additional payments, by level of education (2021)*
WEB Table D3.11	*Decision-making level for criteria used for determining school heads' base salaries and additional payments, by level of education (2021)*
WEB Table D3.12	*Structure of compensation system for school heads (2021)*

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Cut-off date for the data: 17 June 2022. Any updates on data can be found on line at: http://dx.doi.org/10.1787/eag-data-en. More breakdowns can also be found at http://stats.oecd.org, *Education at a Glance Database*.

Table D3.1. Teachers' statutory salaries, based on the most prevalent qualifications at different points in teachers' careers (2021)

Annual teachers' salaries, in public institutions, in equivalent USD converted using PPPs for private consumption

		Pre-primary				Primary				Lower secondary, general programmes				Upper secondary, general programmes			
		Starting salary	Salary after 10 years of experience	Salary after 15 years of experience	Salary at top of scale	Starting salary	Salary after 10 years of experience	Salary after 15 years of experience	Salary at top of scale	Starting salary	Salary after 10 years of experience	Salary after 15 years of experience	Salary at top of scale	Starting salary	Salary after 10 years of experience	Salary after 15 years of experience	Salary at top of scale
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
OECD	**Countries**																
	Australia	46 770	68 072	70 036	72 461	46 988	67 068	68 608	74 335	46 987	66 911	68 440	74 454	46 987	66 911	68 440	74 454
	Austria	m	m	m	m	47 995	51 726	57 638	83 892	47 853	54 089	60 420	89 610	47 914	58 507	65 749	95 230
	Canada	m	m	m	m	40 722	68 736	70 331	70 331	40 722	68 736	70 331	70 331	40 722	68 736	70 331	70 331
	Chile	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Colombia [1]	23 619	43 073	43 073	49 534	23 619	43 073	43 073	49 534	23 619	43 073	43 073	49 534	23 619	43 073	43 073	49 534
	Costa Rica	26 241	30 824	33 115	39 990	26 501	31 130	33 445	40 389	27 310	32 084	34 471	41 632	27 310	32 084	34 471	41 632
	Czech Republic	23 914	24 886	25 535	28 372	25 616	27 237	28 453	33 560	25 616	27 318	28 534	33 803	25 616	27 318	28 534	33 722
	Denmark	46 955	53 264	53 264	53 264	54 130	60 090	62 301	62 301	54 405	60 833	62 901	62 901	50 653	65 827	65 827	65 827
	Estonia	a	a	a	a	25 448	a	a	a	25 448	a	a	a	25 448	a	a	a
	Finland [2]	32 525	35 465	35 803	35 803	37 073	42 774	45 772	48 518	39 824	45 948	49 168	52 118	42 089	50 539	53 061	56 245
	France [3]	32 619	37 628	40 043	57 885	32 619	37 628	40 043	57 885	35 709	40 718	43 133	61 282	35 709	40 718	43 133	61 282
	Germany	m	m	m	m	69 599	80 097	85 049	90 970	77 358	88 001	92 566	100 962	80 911	91 424	95 933	110 050
	Greece	20 410	24 821	27 026	40 259	20 410	24 821	27 026	40 259	20 410	24 821	27 026	40 259	20 410	24 821	27 026	40 259
	Hungary	17 058	19 212	20 635	29 173	17 058	19 212	20 635	29 173	17 058	19 212	20 635	29 173	17 058	21 346	22 928	32 415
	Iceland	42 593	43 306	45 371	46 451	42 593	43 306	45 371	46 451	42 593	43 306	45 371	46 451	39 978	43 843	48 216	48 216
	Ireland	a	a	a	a	37 017	56 484	62 337	71 899	37 017	58 506	62 948	72 510	37 017	58 506	62 948	72 510
	Israel	26 638	33 963	37 891	65 509	23 572	29 909	33 671	54 842	23 684	30 858	36 244	57 366	27 893	32 438	39 245	56 280
	Italy	32 963	36 141	39 563	47 990	32 963	36 141	39 563	47 990	35 428	39 130	43 015	52 697	35 428	40 063	44 212	55 077
	Japan	m	m	m	m	29 820	42 244	49 356	61 067	29 820	42 244	49 356	61 067	29 820	42 244	49 356	62 670
	Korea	34 123	51 508	60 185	95 780	34 123	51 508	60 185	95 780	34 185	51 570	60 247	95 842	34 185	51 570	60 247	95 842
	Latvia	16 534	a	a	a	16 534	a	a	a	16 534	a	a	a	16 534	a	a	a
	Lithuania	30 827	31 823	35 392	40 287	30 827	31 823	35 392	40 287	30 827	31 823	35 392	40 287	30 827	31 823	35 392	40 287
	Luxembourg	71 812	92 877	104 846	126 868	71 812	92 877	104 846	126 868	81 387	101 734	112 266	141 470	81 387	101 734	112 266	141 470
	Mexico	21 948	27 681	34 704	43 709	21 948	27 681	34 704	43 709	27 899	35 227	44 349	55 633	55 272	63 694	67 968	67 968
	Netherlands	45 594	60 394	70 899	85 360	45 594	60 394	70 899	85 360	48 336	73 498	84 315	98 654	48 336	73 498	84 315	98 654
	New Zealand	m	m	m	m	34 488	52 699	52 699	52 699	34 488	52 699	52 699	52 699	34 488	52 699	52 699	52 699
	Norway	38 716	47 186	47 186	47 656	42 499	50 677	50 677	54 451	42 499	50 677	50 677	54 451	50 216	55 524	55 524	61 443
	Poland	19 622	26 243	32 040	33 398	19 622	26 243	32 040	33 398	19 622	26 243	32 040	33 398	19 622	26 243	32 040	33 398
	Portugal	34 400	41 861	44 413	74 255	34 400	41 861	44 413	74 255	34 400	41 861	44 413	74 255	34 400	41 861	44 413	74 255
	Slovak Republic [4]	13 549	15 457	15 824	17 705	16 788	18 870	19 329	21 622	16 788	18 870	19 329	21 622	16 788	18 870	19 329	21 622
	Slovenia [4]	31 001	36 826	46 466	53 699	31 001	38 176	48 203	57 831	31 001	38 176	48 203	57 831	31 001	38 176	48 203	57 831
	Spain	43 684	47 428	50 548	62 368	43 684	47 428	50 548	62 368	48 796	52 993	56 428	69 499	48 796	52 993	56 428	69 499
	Sweden [1, 4, 5, 6]	42 217	44 247	44 656	49 176	42 727	47 542	49 232	56 757	44 003	48 722	50 686	58 287	44 258	49 104	50 890	59 053
	Switzerland [1]	56 405	70 184	m	86 311	60 948	75 787	m	92 671	67 837	86 538	m	103 952	76 393	98 652	m	117 580
	Türkiye	33 719	34 719	34 256	36 779	33 719	34 719	34 256	36 779	34 828	35 828	35 365	37 887	34 828	35 828	35 365	37 887
	United States [6]	42 381	55 291	63 625	79 478	42 723	56 582	63 531	74 214	43 466	59 374	67 626	77 596	43 438	59 335	66 750	76 055
	Other Participants																
	Flemish Comm. (Belgium)	41 008	51 423	57 893	72 989	41 008	51 423	57 893	72 989	41 008	51 423	57 893	72 989	51 160	65 204	74 357	92 663
	French Comm. (Belgium)	39 498	49 356	55 553	67 945	39 498	49 356	55 553	67 945	39 498	49 356	55 553	67 945	49 105	62 555	71 321	85 930
	England (UK)	34 211	a	54 889	54 889	34 211	a	54 889	54 889	34 211	a	54 889	54 889	34 211	a	54 889	54 889
	Scotland (UK)	42 280	53 068	53 068	53 068	42 280	53 068	53 068	53 068	42 280	53 068	53 068	53 068	42 280	53 068	53 068	53 068
	OECD average	34 245	42 684	45 253	55 999	36 099	46 286	49 245	59 911	37 466	48 431	51 246	62 685	39 020	50 770	53 268	64 987
	EU22 average	33 108	39 939	43 746	53 313	36 053	44 591	49 022	59 783	37 640	47 144	51 507	63 054	38 197	48 863	53 273	65 399
Partners	Argentina	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Brazil [7]	14 345	m	m	m	14 345	m	m	m	14 345	m	m	m	14 345	m	m	m
	China	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	49 942	m	m	m	49 942	m	m	m	49 942	m	m	m	54 546	m	m	m
	South Africa	m	m	m	m	57 893	m	m	m	57 893	m	m	m	57 893	m	m	m
	G20 average	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m

Note: The definition of teachers' most prevalent qualifications is based on a broad concept, including the typical ISCED level of attainment and other criteria. The most prevalent qualification is defined for each of the four career stages included in this table. In many cases, the minimum qualification is the same as the most prevalent qualification, see Table X3.D3.2 in Annex 3. Please see Annex 2 and *Definitions* and *Methodology* sections for more information. Data available at: http://stats.oecd.org, Education at a Glance Database.

1. Year of reference 2020.
2. Data on pre-primary teachers include the salaries of kindergarten teachers, who are the majority.
3. Includes the average of fixed bonuses for overtime hours for lower and upper secondary teachers.
4. At the upper secondary level includes teachers working in vocational programmes (in Slovenia and Sweden, includes only those teachers teaching general subjects within vocational programmes).
5. Excludes the social security contributions and pension-scheme contributions paid by the employees.
6. Actual base salaries.
7. Year of reference 2019.

Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/nzy3cr

Table D3.2. Teachers' and school heads' actual salaries relative to earnings of tertiary-educated workers (2021)

Ratio of salary, using annual average salaries (including bonuses and allowances) of full-time teachers and school heads in public institutions relative to the earnings of workers with similar educational attainment (weighted average) and to the earnings of full-time, full-year workers with tertiary education

			All teachers								All school heads							
			Actual salaries, relative to earnings for full-time, full-year similarly educated workers (weighted averages, 25-64 year-olds)				Actual salaries, relative to earnings for full-time, full-year workers with tertiary education (ISCED 5 to 8, 25-64 year-olds)				Actual salaries, relative to earnings for full-time, full-year similarly educated workers (weighted averages, 25-64 year-olds)				Actual salaries, relative to earnings for full-time, full-year workers with tertiary education (ISCED 5 to 8, 25-64 year-olds)			
		Year of reference of latest available data on earnings of tertiary-educated workers	Pre-primary	Primary	Lower secondary, general programmes	Upper secondary, general programmes	Pre-primary	Primary	Lower secondary, general programmes	Upper secondary, general programmes	Pre-primary	Primary	Lower secondary, general programmes	Upper secondary, general programmes	Pre-primary	Primary	Lower secondary, general programmes	Upper secondary, general programmes
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
OECD	**Countries**																	
	Australia	2020	a	m	m	m	1.05	0.98	0.99	0.99	m	m	m	m	1.44	1.60	1.85	1.86
	Austria	2020	m	m	m	m	m	0.72	0.81	0.93	m	m	m	m	m	1.02	1.09	1.36
	Canada	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Chile	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Colombia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Costa Rica	2020	m	m	m	m	1.19	1.23	1.47	1.47	m	m	m	m	2.00	1.81	2.11	2.11
	Czech Republic[1]	2020	0.76	0.73	0.72	0.75	0.60	0.74	0.74	0.77	1.05	1.10	1.10	1.17	0.86	1.14	1.14	1.22
	Denmark	2020	m	m	m	0.79	0.65	0.79	0.79	0.92	0.93	1.24	1.24	1.34	0.85	1.14	1.14	1.55
	Estonia	2020	0.74	0.88	0.87	0.85	0.70	0.90	0.90	0.90	0.95	1.05	1.05	1.05	1.01	1.13	1.13	1.13
	Finland	2019	0.74	0.76	0.85	0.95	0.67	0.88	0.98	1.10	0.90	1.06	1.23	1.26	0.85	1.22	1.43	1.48
	France[2]	2018	0.78	0.76	0.83	0.93	0.80	0.78	0.87	0.97	0.96	0.96	m	m	0.98	0.98	1.32	1.32
	Germany	2020	m	0.86	0.95	1.00	m	0.91	1.00	1.05	m	m	m	m	m	m	m	m
	Greece[3]	2018	0.72	0.72	0.73	0.73	0.73	0.73	0.76	0.76	0.96	0.96	0.99	0.99	0.99	0.99	1.10	1.10
	Hungary	2020	0.63	0.62	0.62	0.57	0.57	0.60	0.60	0.65	0.89	0.90	0.90	0.90	0.82	0.88	0.88	0.94
	Iceland	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Ireland	2019	m	m	m	m	m	0.99	1.03	1.03	m	m	m	m	m	1.45	1.77	1.77
	Israel	2019	0.81	0.78	0.80	0.91	0.85	0.85	0.92	1.00	a	1.19	1.14	1.42	a	1.53	1.48	1.73
	Italy	2018	m	m	m	m	0.68	0.68	0.73	0.78	a	m	m	m	a	1.73	1.73	1.73
	Japan	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Korea	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Latvia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Lithuania[4]	2018	m	m	m	m	1.31	1.31	1.31	1.31	m	m	m	m	m	m	m	m
	Luxembourg	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Mexico	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Netherlands	2020	0.76	0.76	0.88	0.88	0.72	0.72	0.87	0.87	1.01	1.01	1.16	1.16	1.01	1.01	1.20	1.20
	New Zealand[1]	2020	m	0.94	0.94	1.00	m	0.92	0.92	1.00	m	1.48	1.56	1.73	m	1.36	1.45	1.58
	Norway	2020	0.75	0.81	0.81	0.80	0.68	0.75	0.75	0.81	0.95	1.09	1.09	1.22	0.86	1.01	1.01	1.24
	Poland	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Portugal	2019	m	m	m	m	1.50	1.37	1.33	1.44	m	m	m	m	1.95	1.95	1.95	1.95
	Slovak Republic	2020	m	m	m	m	0.58	0.77	0.77	0.80	m	m	m	m	m	m	m	m
	Slovenia[1]	2020	0.78	0.83	0.85	0.85	0.72	0.88	0.90	0.95	1.32	1.15	1.15	1.22	1.31	1.29	1.29	1.37
	Spain	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Sweden[1]	2020	0.78	0.81	0.77	0.76	0.71	0.81	0.84	0.85	1.16	1.16	1.16	1.13	1.05	1.16	1.16	1.18
	Switzerland	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Türkiye	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	United States	2020	0.51	0.52	0.54	0.56	0.57	0.59	0.61	0.64	0.79	0.80	0.83	0.85	1.01	1.02	1.05	1.08
	Other Participants																	
	Flemish Comm. (Belgium)	2019	0.96	0.95	0.92	0.95	0.86	0.85	0.84	1.01	1.39	1.39	1.36	1.34	1.25	1.25	1.33	1.50
	French Comm. (Belgium)	2019	0.92	0.88	0.84	0.89	0.82	0.80	0.78	0.98	1.28	1.30	1.26	1.32	1.15	1.18	1.20	1.42
	England (UK)	2020	0.82	0.82	0.87	0.87	0.85	0.85	0.95	0.95	1.50	1.50	2.00	2.00	1.56	1.56	2.20	2.20
	Scotland (UK)	2020	m	m	m	m	0.89	0.89	0.89	0.89	m	m	m	m	1.49	1.49	1.49	1.49
	OECD average		m	m	m	m	m	0.86	0.90	0.96	m	m	m	m	m	m	m	m
	EU22 average		m	m	m	m	0.78	0.85	0.89	0.95	m	m	m	m	m	1.22	1.31	1.39
Partners	Argentina	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Brazil	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	China	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	G20 average		m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m

Note: Where the year of reference for the earnings of tertiary-educated workers and the salaries of teachers differ the earnings of tertiary-educated workers have been adjusted to the reference year used for salaries of teachers using deflators for private final consumption expenditure. See *Definitions* and *Methodology* sections for more information. Data available at: http://stats.oecd.org, *Education at a Glance Database*.

1. Year of reference 2020 for salaries of teachers and school heads.
2. Year of reference 2019 for salaries of teachers and school heads.
3. At pre-primary and primary levels actual salaries refer to all teachers/school heads in those levels of education combined, including special needs education. At lower and upper secondary levels, actual salaries refer to all teachers/school heads in those levels of education combined, including vocational education, adult education and special needs education.
4. Teachers' data include unqualified teachers.

Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

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Table D3.3. Teachers' and school heads' average actual salaries (2021)

Annual average salaries (including bonuses and allowances) of teachers and school heads in public institutions, in equivalent USD converted using PPPs for private consumption

		25-64 year-old teachers				25-64 year-old school heads			
		Pre-primary	Primary	Lower secondary, general programmes	Upper secondary, general programmes	Pre-primary	Primary	Lower secondary, general programmes	Upper secondary, general programmes
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
OECD	**Countries**								
	Australia	66 922	62 598	63 023	63 079	92 089	101 834	118 209	118 288
	Austria [1]	m	64 357	71 951	82 346	m	90 697	96 721	121 213
	Canada	m	m	m	m	m	m	m	m
	Chile	m	m	m	m	m	m	m	m
	Colombia	m	m	m	m	m	m	m	m
	Costa Rica	38 633	39 988	47 966	47 966	65 145	58 901	68 522	68 522
	Czech Republic [2]	28 082	34 830	34 587	36 282	40 336	53 562	53 562	57 102
	Denmark	52 494	63 834	64 246	74 745	68 851	92 377	92 377	126 228
	Estonia	24 442	31 620	31 620	31 620	35 477	39 646	39 646	39 646
	Finland [3]	38 128	50 229	55 666	62 714	48 109	69 507	81 129	84 055
	France [4]	44 064	42 832	48 209	53 716	54 318	54 318	72 948	72 948
	Germany	m	81 429	89 722	94 580	m	m	m	m
	Greece [1, 5]	27 660	27 660	29 023	29 023	37 525	37 525	41 902	41 902
	Hungary	25 445	26 648	26 648	29 158	36 579	39 533	39 533	42 082
	Iceland	47 620	51 703	51 703	65 753	65 138	73 912	73 912	89 827
	Ireland	m	59 287	61 452	61 452	m	86 709	105 795	105 795
	Israel	40 704	40 783	44 049	47 884	a	72 950	70 840	82 515
	Italy	40 008	40 008	42 822	45 870	a	101 937	101 937	101 937
	Japan	m	m	m	m	m	m	m	m
	Korea	m	m	m	m	m	m	m	m
	Latvia	21 959	27 387	29 169	31 864	32 575	35 827	34 187	41 700
	Lithuania [6]	41 256	41 256	41 256	41 256	m	m	m	m
	Luxembourg	m	m	m	m	m	m	m	m
	Mexico	m	m	m	m	m	m	m	m
	Netherlands	65 219	65 219	79 182	79 182	91 600	91 600	109 194	109 194
	New Zealand [2]	m	48 878	49 244	53 335	m	72 791	77 302	84 245
	Norway	49 185	54 192	54 192	58 947	62 165	72 962	72 962	89 967
	Poland	m	m	m	m	m	m	m	m
	Portugal	52 095	47 480	46 245	50 209	67 935	67 935	67 935	67 935
	Slovak Republic [1]	20 731 [d]	27 426 [d]	27 426 [d]	28 524 [d]	x(1)	x(2)	x(3)	x(4)
	Slovenia [2]	34 952	42 990	43 761	46 098	63 934	62 768	62 768	66 924
	Spain	m	m	m	m	m	m	m	m
	Sweden [1, 2]	42 850	48 668	50 620	51 531	63 505	70 036	70 036	71 503
	Switzerland	m	m	m	m	m	m	m	m
	Türkiye	m	m	m	m	m	m	m	m
	United States	56 199	57 269	59 974	62 569	98 585	99 656	102 945	105 968
	Other Participants								
	Flemish Comm. (Belgium)	58 799	58 081	57 875	69 587	85 823	85 823	91 485	102 965
	French Comm. (Belgium)	56 152	54 784	53 684	67 490	78 859	80 820	82 250	97 701
	England (UK)	47 451	47 451	52 718	52 718	86 874	86 874	122 697	122 697
	Scotland (UK)	49 612	49 612	49 612	49 612	82 718	82 718	82 718	82 718
	OECD average	41 941	47 538	50 026	53 682	m	71 462	76 831	83 022
	EU22 average	38 554	46 294	48 915	52 564	m	67 331	72 283	78 156
Partners	Argentina	m	m	m	m	m	m	m	m
	Brazil	m	m	m	m	m	m	m	m
	China	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m	m	m
	G20 average	m	m	m	m	m	m	m	m

Note: Where the year of reference for the earnings of tertiary-educated workers and the salaries of teacher differ, the earnings of tertiary-educated workers have been adjusted using deflators for private final consumption expenditure. See *Definitions* and *Methodology* sections for more information. Data available at: http://stats.oecd.org, *Education at a Glance Database*.

1. Includes teachers working in vocational programmes at the upper secondary level (in Sweden, includes only those teachers teaching general subjects within vocational programmes).
2. Year of reference 2020.
3. Includes data on the majority, i.e. kindergarten teachers only for pre-primary education.
4. Year of reference 2019.
5. At pre-primary and primary levels actual salaries refer to all teachers/school heads in those levels of education combined, including special needs education. At lower and upper secondary levels, actual salaries refer to all teachers/school heads in those levels of education combined, including vocational and special needs education.
6. Includes unqualified teachers.

Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

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Table D3.4. School heads' minimum and maximum statutory salaries, based on minimum qualifications (2021)

Annual school heads' salaries, in public institutions, in equivalent USD converted using PPPs for private consumption (by level of education)

		Pre-primary			Primary			Lower secondary, general programmes			Upper secondary, general programmes		
		Minimum salary	Maximum salary	Ratio (max/min)	Minimum salary	Maximum salary	Ratio (max/min)	Minimum salary	Maximum salary	Ratio (max/min)	Minimum salary	Maximum salary	Ratio (max/min)
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
OECD	**Countries**												
	Australia	91 349	127 746	**1.40**	88 688	128 829	**1.45**	88 688	128 829	**1.45**	88 688	128 829	**1.45**
	Austria	m	m	**m**	52 600	105 428	**2.00**	52 600	105 428	**2.00**	69 261	132 339	**1.91**
	Canada	m	m	**m**	79 709	97 703	**1.23**	80 382	98 039	**1.22**	84 550	102 207	**1.21**
	Chile	m	m	**m**	m	m	**m**	m	m	**m**	m	m	**m**
	Colombia [1]	21 407	116 002	**5.42**	21 407	116 002	**5.42**	30 704	116 002	**3.78**	30 704	116 002	**3.78**
	Costa Rica	23 152	69 882	**3.02**	22 629	70 523	**3.12**	23 748	82 081	**3.46**	23 748	82 081	**3.46**
	Czech Republic	24 805	29 588	**1.19**	25 778	35 019	**1.36**	25 778	35 019	**1.36**	25 778	35 100	**1.36**
	Denmark	a	78 349	**a**	67 635	79 449	**1.17**	67 635	79 449	**1.17**	a	a	**a**
	Estonia	a	a	**a**	a	a	**a**	a	a	**a**	a	a	**a**
	Finland [2]	36 951	40 287	**1.09**	51 707	70 876	**1.37**	53 412	80 209	**1.50**	61 101	74 806	**1.22**
	France [3]	44 145	64 402	**1.46**	44 145	64 402	**1.46**	56 311	85 313	**1.52**	56 311	85 313	**1.52**
	Germany	m	m	**m**	m	m	**m**	m	m	**m**	m	m	**m**
	Greece	26 545	45 913	**1.73**	26 545	45 913	**1.73**	29 532	45 913	**1.55**	30 474	46 855	**1.54**
	Hungary	22 770	49 097	**2.16**	22 770	49 097	**2.16**	22 770	54 552	**2.40**	25 299	54 552	**2.16**
	Iceland	46 796	75 460	**1.61**	51 648	103 045	**2.00**	51 648	103 045	**2.00**	87 062	109 396	**1.26**
	Ireland	a	a	**a**	46 641	103 278	**2.21**	60 269	117 010	**1.94**	60 269	117 010	**1.94**
	Israel	a	a	**a**	51 762	83 515	**1.61**	51 743	83 057	**1.61**	43 420	107 717	**2.48**
	Italy	a	a	**a**	96 876	103 139	**1.06**	96 876	103 139	**1.06**	96 876	103 139	**1.06**
	Japan	m	m	**m**	62 027	68 557	**1.11**	62 027	68 557	**1.11**	63 560	72 187	**1.14**
	Korea	a	107 040	**a**	a	107 040	**a**	a	106 854	**a**	a	106 854	**a**
	Latvia	22 101	a	**a**	22 101	a	**a**	22 101	a	**a**	22 101	a	**a**
	Lithuania	44 436	52 609	**1.18**	44 436	52 609	**1.18**	44 436	52 609	**1.18**	44 436	52 609	**1.18**
	Luxembourg	a	a	**a**	a	a	**a**	112 506	155 593	**1.38**	112 506	155 593	**1.38**
	Mexico	27 838	81 772	**2.94**	27 838	81 772	**2.94**	62 840	157 196	**2.50**	61 365	82 837	**1.35**
	Netherlands	56 800	110 848	**1.95**	56 800	110 848	**1.95**	63 889	138 602	**2.17**	63 889	138 602	**2.17**
	New Zealand	m	m	**m**	60 429	105 570	**1.75**	60 429	105 570	**1.75**	60 429	105 570	**1.75**
	Norway	a	a	**a**	a	a	**a**	a	a	**a**	a	a	**a**
	Poland	29 807	36 826	**1.24**	31 565	38 585	**1.22**	31 565	38 585	**1.22**	36 913	44 992	**1.22**
	Portugal	42 213	88 092	**2.09**	42 213	88 092	**2.09**	42 213	88 092	**2.09**	42 213	88 092	**2.09**
	Slovak Republic	18 549	34 502	**1.86**	23 674	38 824	**1.64**	23 674	38 824	**1.64**	23 674	39 442	**1.67**
	Slovenia	55 041	75 136	**1.37**	55 041	75 136	**1.37**	55 041	75 136	**1.37**	53 041	81 017	**1.53**
	Spain	50 570	77 225	**1.53**	50 570	77 225	**1.53**	60 998	90 097	**1.48**	60 998	90 097	**1.48**
	Sweden [1, 4]	a	a	**a**	68 874	82 266	**1.19**	68 874	82 266	**1.19**	70 407	82 266	**1.17**
	Switzerland	m	m	**m**	m	m	**m**	m	m	**m**	m	m	**m**
	Türkiye	40 624	45 273	**1.11**	38 388	43 070	**1.12**	38 388	43 070	**1.12**	40 750	45 400	**1.11**
	United States [4, 5]	89 157	110 927	**1.24**	90 070	111 569	**1.24**	93 868	107 821	**1.15**	94 986	113 961	**1.20**
	Other Participants												
	Flemish Comm. (Belgium)	57 792	86 181	**1.49**	57 792	86 181	**1.49**	52 404	86 181	**1.64**	63 770	104 055	**1.63**
	French Comm. (Belgium)	43 064	82 343	**1.91**	43 064	82 343	**1.91**	48 429	82 343	**1.70**	61 560	98 246	**1.60**
	England (UK)	60 962	147 755	**2.42**	60 962	147 755	**2.42**	60 962	147 755	**2.42**	60 962	147 755	**2.42**
	Scotland (UK)	63 838	123 180	**1.93**	63 838	123 180	**1.93**	63 838	123 180	**1.93**	63 838	123 180	**1.93**
	OECD average [6]	m	m	**m**	50 624	81 935	**1.79**	55 776	89 897	**1.68**	58 058	91 128	**1.69**
	EU22 average [6]	m	m	**m**	47 818	72 750	**1.58**	53 747	81 850	**1.51**	55 504	84 959	**1.57**
Partners	Argentina	m	m	**m**	m	m	**m**	m	m	**m**	m	m	**m**
	Brazil	m	m	**m**	m	m	**m**	m	m	**m**	m	m	**m**
	China	m	m	**m**	m	m	**m**	m	m	**m**	m	m	**m**
	India	m	m	**m**	m	m	**m**	m	m	**m**	m	m	**m**
	Indonesia	m	m	**m**	m	m	**m**	m	m	**m**	m	m	**m**
	Saudi Arabia	m	m	**m**	m	m	**m**	m	m	**m**	m	m	**m**
	South Africa	m	m	**m**	m	m	**m**	m	m	**m**	m	m	**m**
	G20 average	m	m	**m**	m	m	**m**	m	m	**m**	m	m	**m**

Note: The definition of school heads' minimum qualifications is based on a broad concept, including the typical ISCED level of attainment and other criteria. See *Definitions* and *Methodology* sections for more information. Data available at: http://stats.oecd.org, *Education at a Glance Database*.
1. Year of reference 2020.
2. Includes data on the majority, i.e. kindergarten school heads only for pre-primary education.
3. Data apply to school heads in charge of pre-primary and primary schools with 10 classes or more, i.e. with teaching responsibilities accounting for 50% or less of their working time.
4. Actual base salaries.
5. Minimum salary refers to the most prevalent qualification (master's degree or equivalent) and maximum salary refers to the highest qualification (education specialist or doctoral degree or equivalent).
6. Excludes countries for which either the starting salary (with minimum qualifications) or the salary at top of scale (with maximum qualifications) are not available. It refers to the average value for the ratio, and is therefore different from the ratio of the average maximum salary to the average minimum salary.
Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/6yntdc

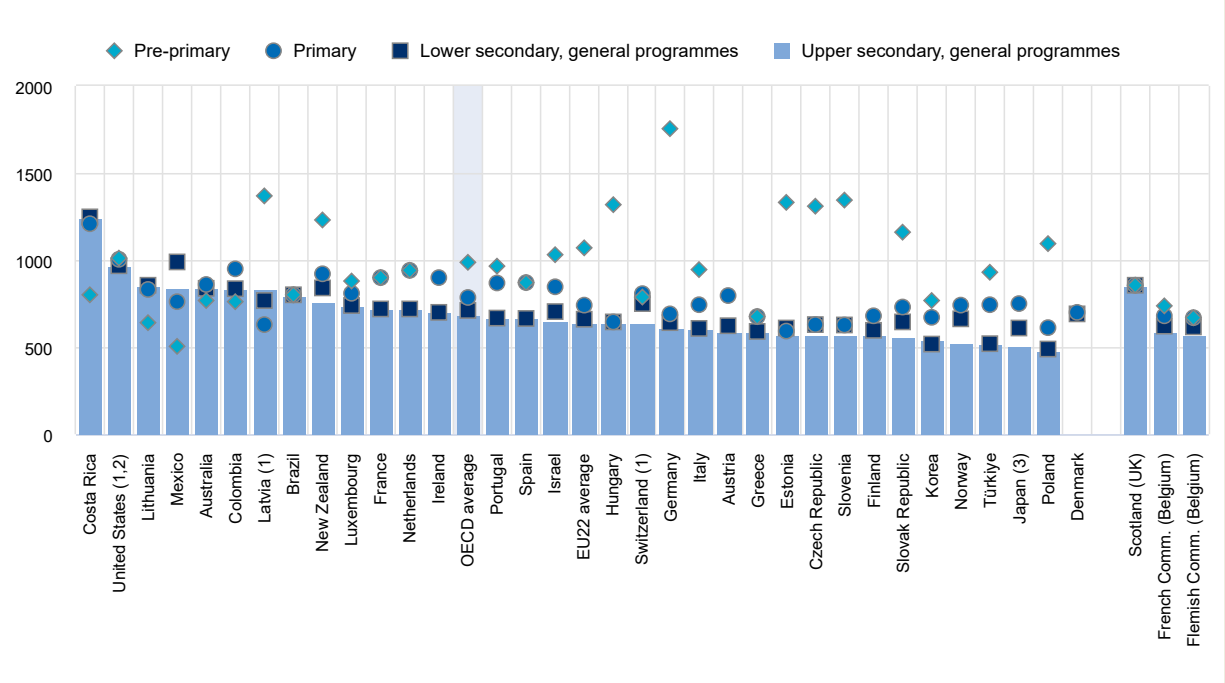
Indicator D4. How much time do teachers and school heads spend teaching and working?

Highlights

- Based on official regulations or agreements, teachers in public schools in OECD and partner countries are required to teach on average 987 hours per year at pre-primary level, 784 hours at primary level, 711 hours at lower secondary level (general programmes) and 684 hours at upper secondary level (general and vocational programmes).
- The way teachers' total working time is divided between teaching and non-teaching activities, and the distribution of working hours taking place within the school or elsewhere, varies widely across countries.
- School heads in OECD countries and other participants work an average of 43-44 weeks per year, depending on the level of education. Their annual statutory working time averages 1 648 hours at pre-primary level, 1 613 hours at primary level, 1 612 hours at lower secondary level (general programmes) and 1 608 hours at upper secondary level (general programmes). In about two-thirds of OECD countries, school heads are required to work during students' school holidays.

Figure D4.1. Teaching time of teachers, by level of education (2021)

Net statutory teaching time in hours per year, in public institutions



1. Actual teaching time (in Latvia except for pre-primary level).
2. Reference year differs from 2021. Refer to the source table for details.
3. Average planned teaching time in each school at the beginning of the school year.

Countries and other participants are ranked in descending order of the number of teaching hours per year in general upper secondary education.

Source: OECD (2022), Table D4.1. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

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Context

Although statutory working and teaching hours only partly determine the actual workloads of teachers and school heads, they do offer valuable insights into the demands placed on teachers and school heads in different countries. Teaching hours and the extent of their non-teaching duties may also affect the attractiveness of the teaching profession. Together with salaries (see Indicator D3) and average class sizes (see Indicator D2 in (OECD, 2021[1])), this indicator presents some key measures of the working lives of teachers and school heads.

For teachers, the proportion of their statutory working time spent teaching provides information on the amount of time available for non-teaching activities, such as lesson preparation, correction, in-service training and staff meetings. A larger proportion of statutory working time spent teaching may indicate that a lower proportion of working time is devoted to tasks such as assessing students and preparing lessons, as stated in regulations. It could also indicate that teachers have to perform these tasks in their own time and hence work more hours than required by their statutory working hours. In some countries, actual working practices of teachers and school heads may have diverged from the statutory requirements during the COVID-19 pandemic, due to school closures and changes in learning environments related to the sanitary measures (e.g. remote learning and sanitary restrictions once schools reopened). Moreover, some countries introduced changes in statutory requirements on teaching and working time in the second year of the pandemic (see Box D4.2 and Annex 3 for more information).

In addition to class sizes and the ratio of students to teaching staff (see Indicator D2 in (OECD, 2021[1])), students' hours of instruction (see Indicator D1 in (OECD, 2021[1])) and teachers' salaries (see Indicator D3), the amount of time teachers spend teaching also affects the financial resources countries need to allocate to education (see Indicator C7 in (OECD, 2021[1]).

Other findings

- The number of hours per year teachers are required to teach in pre-primary, primary and secondary public schools varies considerably across countries but tends to decrease as the level of education increases.
- Across OECD countries and other participants, the required teaching time in public schools varies more widely across OECD countries and other participants at the pre-primary level than at any other level, ranging from 505 hours in Mexico to 1 755 hours in Germany.
- At the upper secondary level, teachers spend 43% of their working time on teaching on average, ranging from 33% or less in Japan, Norway and Türkiye to 63% in Latvia and Scotland (United Kingdom). Teachers in most countries are required to perform various non-teaching tasks during their working time, such as lesson planning/preparation, marking students' work and communicating or co-operating with parents or guardians.
- At the general secondary level, full-time teachers who teach more hours than their contract requires are rewarded with financial compensation in around two-thirds of countries.
- In 17 OECD and partner countries, teachers' statutory working time includes working during students' school holidays in at least one level of education. In most of these countries, working time during school holidays is required to be spent on specific activities, such as preparation for the next school term, or individual and/or collective professional development activities.
- In more than half of OECD countries, official documents explicitly state the additional tasks and responsibilities of school heads (e.g. teaching students, communication with parents) on top of their managerial and leadership roles.

Analysis

Teaching time of teachers

At the pre-primary, primary and secondary levels, countries vary considerably in their annual statutory teaching time – the number of teaching hours per year required of a full-time teacher in a public school. Variations in how teaching time is regulated and/or reported across countries may explain some of the differences in statutory teaching time between countries (Box D4.1). In addition, some of the changes in the statutory requirements on teaching time compared to previous years may result from response to the COVID-19 pandemic, also contributing to differences between countries (Box D4.2).

Box D4.1. Comparability of statutory teaching and working time data

Teaching time of teachers

Data on teaching time in this indicator refer to net contact time as stated in the regulations of each country. The international data collection exercise gathering this information ensures that similar definitions and methodologies are used when compiling the data in all countries. For example, teaching time is converted into hours (of 60 minutes) to avoid differences resulting from the varying length of teaching periods between countries. The impact on the comparability of data of differences in the way teaching time is reported in regulations is also minimised as much as possible.

Official documents might regulate teaching time as a minimum, typical or maximum time, and these differences may explain some of the differences reported between countries. While most data refer to typical teaching time, about one-third of countries report maximum or minimum values for teaching time (see Table X3.D4.3 in Annex 3).

Statutory teaching time in this international comparison excludes preparation time and periods of time formally allowed for breaks between lessons or groups of lessons. However, at the pre-primary and primary levels, short breaks (of ten minutes or less) are included in the teaching time if the classroom teacher is responsible for the class during these breaks (see the *Definitions* section).

Other activities of teachers, such as professional development days (including attending conferences) and student examination days, are also requested to be excluded from the teaching hours reported in this indicator, such as professional development days (including attending conferences) and student examination days. At each level of general education, about two-thirds of the countries and other participants with available information were able to exclude the number of days spent on these activities from statutory teaching time. However, in the rest of the countries, the regulations do not always specify the number of days devoted to some of these activities and/or whether teachers are required to conduct these activities outside of scheduled teaching times, making it difficult to estimate and exclude them from teaching time.

Less than 30% of countries and other participants cannot exclude professional development days from teaching time at all levels of general education. In these countries, the regulations specify some days of professional development activities for all teachers, but the impact on reported teaching time is difficult to estimate as the number of days and how they are organised during the school year may vary across schools or subnational entities. About one-quarter of countries and other participants with available information cannot exclude student examination days from teaching time at each level of general education. In many of these countries, regulations include some guidelines on the number of student examination days, but they are not clear about whether scheduled teaching time is reduced by the time devoted to examinations, or by how much. Overall, not excluding the time devoted to professional development and student examinations may result in annual teaching time being overestimated by a few days in these countries (see Table X3.D4.4 in Annex 3 for more information).

Other forms of professional development activities and student examinations may result in the overestimation of teaching time, even if countries are not asked to exclude them from teaching hours. Examples include professional development activities required for specific groups of teachers only (when regulations do not explicitly forbid them from participating during their scheduled teaching time) and compulsory standardised student assessments conducted for only a few hours of the school day. The complexity of estimation and the fact that only some teachers participate in these activities make it difficult to standardise reporting practices across all countries in order to exclude these activities from teaching time.

Working time for teachers and school heads

Total working time data in this indicator refer to required working hours during the reference year as indicated in the official documents such as legal documents and collective agreements for teachers and/or school heads, or general labour law with specific guidance for these professions. In some countries such as France, Japan, Korea (school heads), Portugal (school heads), Switzerland (teachers) and Türkiye, the statutory working time for teachers and/or school heads is not specific to these professions and refer to the working hours of civil servants. Since working time can be defined in various units (hours per week, per month or per annum, for example), some calculation may be required to estimate the annual working hours when working time is defined based on other units.

Total working time refers to the typical working time of teachers in 68% of countries and other participants and to the typical working time of school heads in 70% of them. In others, total working time refers to either maximum or minimum required working hours. For example, statutory total working time for teachers in England (United Kingdom), Korea and Denmark and for school heads in Ireland and Colombia refers to the minimum number of working hours. In contrast, total statutory working time of teachers and school heads is defined as a maximum number of working hours in some countries, such as Norway, Poland and Scotland (United Kingdom) (see Tables X3.D4.3 and X3.D4.8 in Annex 3).

More detailed information on the reporting practices on teaching time and working time for all countries and other participants is available in Annex 3 (Tables X3.D4.3 and X3.D4.8).

Across countries and other participants with available data, statutory teaching time in public schools varies more at the pre-primary level than at any other level. The number of teaching days ranges from 151 days per year in the Flemish Community of Belgium to 225 days in Germany and Norway. Annual teaching hours range from 505 hours per year in Mexico to 1 755 hours in Germany. These large variations across countries and other participants result from the combination of differences in the length of the school year and in the number of teaching hours per day. For example, pre-primary teachers teach an average of 2.7 hours per day over 190 days in Mexico, but 7.8 hours per day over 225 days in Germany (Table D4.1). On average across OECD countries and other participants, pre-primary teachers are required to teach 987 hours per year, spread over 41 weeks or 196 days (Table D4.1 and Figure D4.1).

Primary school teachers are required to teach an average of 784 hours per year in public institutions. In most countries and other participants with available data, daily teaching time range from three to six hours a day, with an OECD average of more than four hours per day. There is no set rule on how teaching time is distributed throughout the year. For example, primary school teachers in Norway teach 741 hours per year, 111 hours more than in Latvia (630 hours). However, as teachers teach on more days each year in Norway than in Latvia (190 days compared to 160 days), teachers in both countries teach nearly four hours a day on average (Table D4.1).

Lower secondary school teachers in general programmes in public institutions are required to teach an average of 711 hours per year. Teaching time is less than 600 hours in Finland, Greece, Korea, Poland and Türkiye, and exceeds 1 000 hours in Costa Rica (Table D4.1). However, the reported hours for Finland and Korea refer to the minimum time teachers are required to teach (Box D4.1).

A teacher in general upper secondary education in public institutions has an average teaching workload of 684 hours per year. Teaching time ranges from fewer than 500 hours per year in Poland to more than 1 000 hours in Costa Rica. Teachers in the Czech Republic, Finland, Japan, Korea, Norway, Poland, the Slovak Republic, Slovenia and Türkiye teach for three hours or less per day, on average, compared to six hours or more in Costa Rica (Table D4.1).

Box D4.2. Impact of COVID-19 on working conditions of teachers

In the first year of the pandemic, one immediate measure of the impact on education was the school closures which compelled national education ministries to find strategies to minimise the disruption in schooling, such as distance education or adjustments in school activities (OECD, 2021[2]). In the second year of the COVID-19 pandemic, these measures continued to be implemented (see chapter on COVID-19) and some OECD and partner countries and other participants introduced changes to their statutory requirements on teaching and working time, based on their experiences in the first year.

For the school year 2020/21 (2021 for southern hemisphere countries), 12 OECD countries and other participants implemented changes in the statutory working conditions of teachers. The levels of education affected by the implementation of the new regulations or agreements varied across countries. The pre-primary level was the least affected, with only three countries and other participants reporting changes in statutory working conditions of pre-primary teachers as a consequence of the pandemic. Four countries reported changes at the lower secondary level, five at the upper secondary level and six at the primary level.

The nature of these changes differed across countries and other participants. To avoid the spread of the virus during specific periods, school calendars were adjusted to extend the school holidays. As a result, teaching times fell (at all levels of the education) by around nine days in the Flemish and French Communities of Belgium, three days in Ireland, and four days in the Czech Republic (except at the pre-primary level). In Latvia, extending the school holidays reduced actual teaching time by 10 hours (over the year), but only at the primary level. In Greece, the regulations delayed the start of the 2020/21 school year by 3 days, and the end of the school year by 10 to 15 days, depending on the level of education.

During periods of school closure, Greece used remote learning at all levels of education, which resulted in reductions in lesson times, and also had a major impact on teaching hours at the pre-primary level. To ensure effective learning in an online setting, pre-primary teachers in Greece increased the time spent in lesson preparation, and this is reflected in the total working time. In some countries the pandemic may have affected the national exams and the assessment of students. For example, in Greece, final exams were not carried out at lower and upper secondary levels, and in Italy the national exams only included the oral component at these levels of education. In Portugal, secondary level exams were maintained, but the calendar was adjusted, which affected the teaching hours of teachers teaching the grades that are subject to the national exams (see notes on interpretation due to COVID-19 in Annex 3).

In some countries teaching time requirements may change throughout a teacher's career, or according to their qualification level (Box D4.3). In a number of countries, some new teachers have a reduced teaching workload during their induction programmes. Some countries also encourage older teachers to stay in the profession by reducing their teaching hours. For example, in Chile and Portugal, teachers may have a reduced teaching workload based on their number of years in the profession and/or age.

Box D4.3. Teachers' qualification levels

In this indicator, teaching time refers to statutory working conditions of full-time fully qualified teachers in the reference year, as defined in each country. While teachers should meet minimum qualification requirements to enter the teaching profession and become fully qualified teachers (see Indicator D6), some teachers may have higher qualification levels. However, they could also have lower qualification levels than the minimum to enter the teaching profession in the reference year, if the qualification requirement has changed over time, or when there are other pathways to enter the teaching profession (see Indicator D6). For example, in Iceland, the minimum qualification to enter the teaching profession is a master's degree, but teachers with 10 years or more teaching experience could have entered the profession with a bachelor's degree. In Greece, a bachelor's degree is required to become a teacher at the secondary level in 2021, but teachers with 10 years of experience or more could have become a teacher with a post-secondary non-tertiary qualification. This means the level of qualification of teachers at a given level of education may vary not only between countries, but also within countries.

In nearly all countries and other participants, a tertiary qualification is necessary to become a teacher in 2021 at pre-primary, primary and secondary levels (see Indicator D6). In 2021, most 25-64 year-old teachers at these levels had a bachelor's degree or equivalent, or a higher level of qualification. Among the 25 OECD countries and other participants with available data on the distribution of teachers by attainment level, the proportion of teachers with a short-cycle tertiary degree or lower level of qualification does not exceed 17% at the primary and secondary levels, except in Slovenia where it reaches 20% for lower secondary teachers. At these levels, the proportion of teachers without a bachelor's or higher qualification is less than 10% in nearly all other countries with available data. At the pre-primary level, a few countries have a larger share of teachers with lower levels of qualification. The share is 20-30% in Estonia, Finland, Iceland and Latvia; slightly over 30% in Sweden; and 70% in the Czech Republic (Table X2.8). In some of these countries, these shares are explained by the current qualification requirements for teachers: the minimum qualification level for a pre-primary teacher is an upper secondary qualification in the Czech Republic, and a short-cycle tertiary degree in Latvia. In

other countries, these proportions may result from previous qualifications' requirement to enter the teaching profession or from the existence of other pathways into the teaching profession, as a bachelor's degree is currently awarded at the end of initial teacher training (this is the case in Estonia, Finland and Sweden) (Table D6.1).

In some countries, teachers' qualifications may have an influence on their teaching hours. In this case, the data on teaching time refers to typical qualification levels, that it to say the most prevalent qualification of teachers. This is the case in France, where general secondary teachers can have two different tertiary qualifications (*certificat d'aptitude au professorat de l'enseignement du second degré (CAPES)* or *agrégation*) implying different teaching requirements.

Differences in teaching time by level of education

Teaching time tends to decrease as the level of education increases. In most countries, statutory teaching time at the pre-primary level is more than at the upper secondary level (general programmes). The exceptions are Brazil and Scotland (United Kingdom), where teachers are required to teach same hours at all levels of education, and Australia, Colombia, Costa Rica, Lithuania and Mexico, where upper secondary school teachers are required to teach more hours than pre-primary school teachers (Table D4.1).

The largest difference in teaching time requirements is between the pre-primary and primary levels of education. On average, pre-primary school teachers are required to spend about 25% more time in the classroom than primary school teachers. In the Czech Republic, Estonia, Germany, Hungary, Latvia and Slovenia, pre-primary school teachers are required to teach at least twice the number of hours per year as primary school teachers (Table D4.1).

In Austria, France, Ireland, Korea, the Netherlands, Poland, Portugal, Spain and Türkiye, primary school teachers have at least 25% more annual teaching hours than lower secondary school teachers, while there is no difference in Brazil, the Czech Republic, Hungary, Scotland (United Kingdom) and Slovenia. The teaching workload for primary school teachers is 3% lighter than for lower secondary school teachers in Costa Rica, Estonia and Lithuania; 18% lighter in Latvia; and 23% lighter in Mexico (Table D4.1).

In most countries, the teaching hours are similar for the lower and upper secondary levels. However, annual required teaching time at the lower secondary level is at least 25% more than at the upper secondary level in Norway (Table D4.1).

Actual teaching time

Statutory teaching time, as reported by most of the countries in this indicator, refers to teaching time as defined in regulations. However, individual teachers' teaching time may differ from the regulations, for example because of overtime. Actual teaching time is the annual average number of hours that full-time teachers teach a group or a class of students, including overtime (it also includes activities other than teaching, such as keeping order and administrative tasks), and it thus provides a full picture of teachers' actual teaching workload.

While only a few countries were able to report both statutory and actual teaching time, these data suggest that actual teaching time can differ from the statutory requirements. For example, upper secondary teachers actually teach 1-8% more hours than their statutory teaching time in Colombia, Lithuania and New Zealand, and up to 25% more hours in Poland (*Education at a Glance Database*).

Differences between statutory and actual teaching time could be the result of overtime due to teacher absences or shortages, or may be explained by the nature of the data, as figures on statutory teaching time refer to official requirements and agreements, whereas actual teaching time is based on administrative registers, statistical databases, representative sample surveys or other representative sources (Box D4.1).

Teaching time of school heads

Although teaching is the primary or main responsibility of teachers, it can also be one of the responsibilities of school heads in some countries. Among the 29 countries and other participants with available information at pre-primary level, all school heads are required to teach in 7 countries, and some school heads are required to under specific circumstances in a further 8 countries. Pre-primary school heads can also voluntarily teach in 4 countries and are not required to teach in 10 countries. Some primary school heads are required to teach in more than half of the countries with available data (19 out of 34 countries). However, this requirement only applies to all school heads in 6 countries. Teaching responsibilities become less common for

school heads at the secondary level (general programmes). At this level, all school heads are required to teach in only 6 countries; and some school heads in a further 10 countries with available data. School heads are free to teach at their own discretion in 6 countries, and are not required to teach in 12 countries (Table D4.6, available on line).

Most of the countries where teaching is one of the responsibilities of school heads, do not set a specific number of teaching hours for them, but rather define minimum and/or maximum teaching hours. In upper secondary general programmes, for example, the minimum statutory teaching time for school heads (converted into hours per year) ranges from 0 hours (i.e. exempt from teaching) to 194 hours, and the maximum statutory teaching time from 149 hours to 594 hours. In most of these countries, teaching represents up to 22% of school heads' statutory working time, but the proportion exceeds 74% in Ireland (Table D4.6, available on line). The maximum teaching time is usually only required for school heads in specific circumstances. For example, in Ireland almost all school heads actually have either no or minimal teaching hours (for more information on minimum and/or maximum teaching time requirements, refer to Table X3.D4.9 in Annex 3).

Although teaching may be required for school heads at all levels of education in a given country, their minimum and maximum teaching requirements could vary across levels of education. In a majority of the countries with teaching requirements, the number of teaching hours required from school heads decreases as the level of education increases. The exception is Türkiye, where teaching requirements are the same for all school heads at all levels of education (Table D4.6, available on line).

In all countries where school heads have teaching responsibilities, except Türkiye, the requirements vary based on specific criteria. In a large majority of these countries, the key determinants of the teaching requirements are the characteristics of the school such as its size (number of students, teachers and/or classes) and/or the level of education it covers. Other criteria can also be considered, for example the socio-economic status of the regions in Ireland (Table X3.D4.9 in Annex 3).

Working time of teachers

In the majority of countries, teachers' working time is partly determined by the statutory teaching time specified in working regulations. In addition, teachers in most countries are formally required to work a specific number of hours per year, as stipulated in collective agreements or other contractual arrangements. This may be specified either as the number of hours teachers must be available at school for teaching and non-teaching activities, or as the total number of working hours. Both correspond to official working hours as specified in contractual agreements, and countries differ in how they allocate time for each activity.

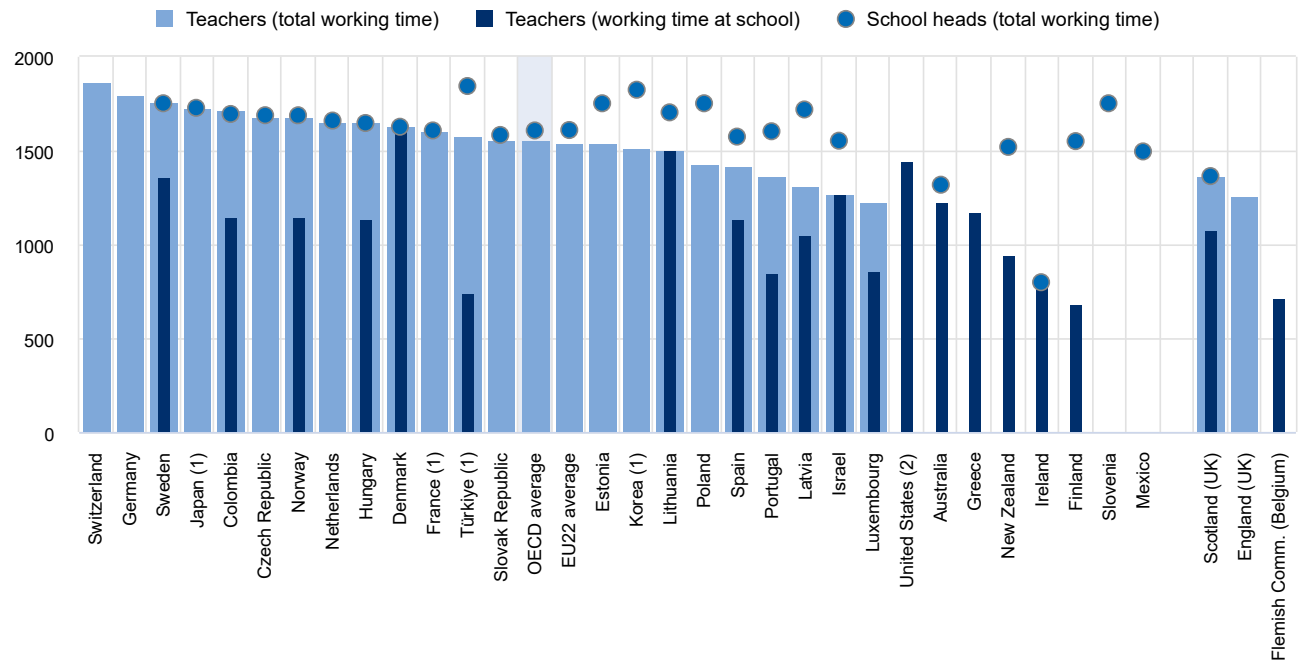
More than half of OECD countries and other participants specify the length of time teachers are required to be available at school, for both teaching and non-teaching activities, for at least one level of education. In over one-third of the countries with available data for pre-primary and upper secondary teachers, the difference in the times upper secondary and pre-primary school teachers are required to be available at school is less than 5%. However, in half of these countries and other participants (the Flemish Community of Belgium, Hungary, Latvia, Luxembourg, New Zealand, Portugal, Sweden and Türkiye), pre-primary teachers are required to be available at school for at least 20% more hours than upper secondary school teachers and the difference exceeds 40% in Latvia and New Zealand. In contrast, total statutory working time is the same for both levels in Hungary, Sweden and Türkiye (Table D4.2).

In some countries, regulations specify teachers' total annual statutory working time (at school and elsewhere), but not the allocation of time spent at school and time spent elsewhere (due to the COVID-19 pandemic, actual working practices could have been different from statutory requirements, see Box D4.2). This is the case in the Czech Republic, England (United Kingdom), Estonia (primary and secondary education), France (secondary education), the French Community of Belgium (pre-primary and primary education), Germany, Japan, Korea, the Netherlands, Poland, the Slovak Republic and Switzerland (Table D4.2 and Figure D4.2).

The variation across countries in teachers' annual working hours can be partly due to whether the total working time spans students' school vacations. For example, at general upper secondary level, total working time is 1 268 hours for teachers in Israel, where they are not required to work during school vacations, and 1 866 hours in Switzerland, where they work up to 8 weeks during school vacations (Figure D4.2). In 17 OECD countries and other participants, teachers' statutory working time includes working during students' school holidays in at least one level of education. In most of these, teachers are required to spend the working time during school holidays on specific activities, such as preparation for the next term, or individual and/or collective professional development activities (see Table X3.D4.2 in Annex 3 for details).

Figure D4.2. Working time of teachers and school heads in general upper secondary education (2021)

Statutory working time in hours per year, in public institutions



1. Teachers' working time requirements refer to those of civil servants.
2. Reference year differs from 2021. Refer to the source table for details.
Countries and other participants are ranked in descending order of teachers' total working hours and then working hours at school in general upper secondary education.
Source: OECD (2022), Tables D4.2 and D4.3. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

StatLink https://stat.link/i2fuwt

Non-teaching time

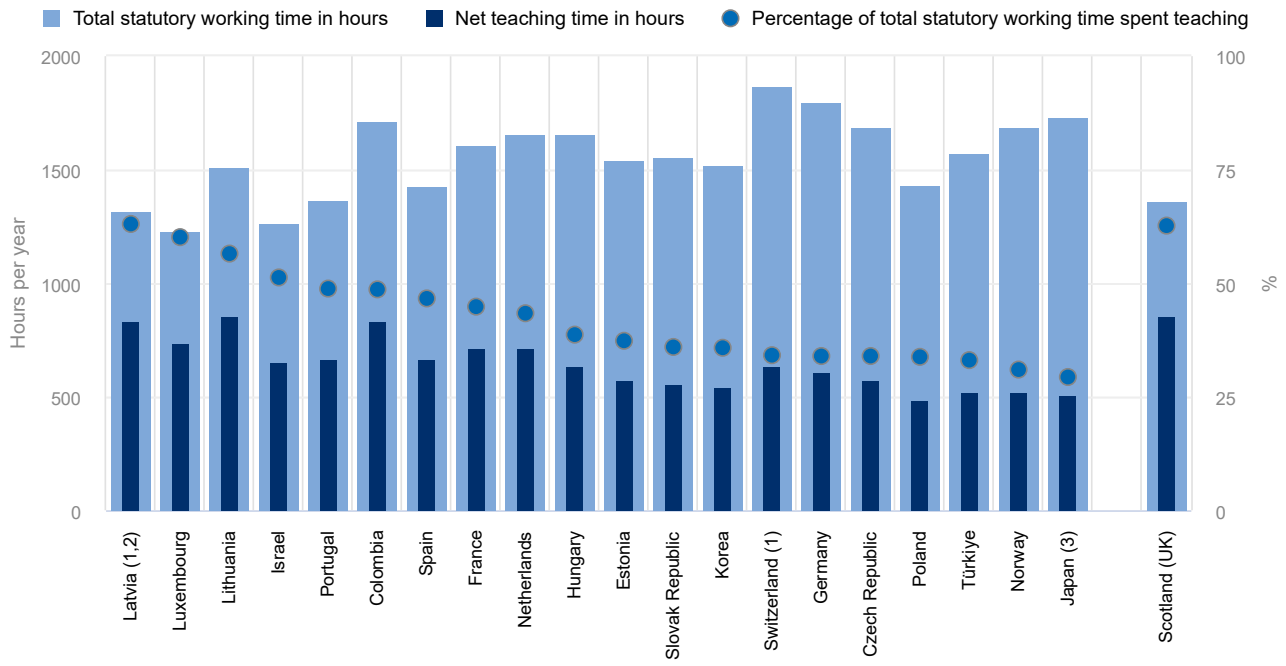
Although teaching time is a substantial component of teachers' workloads, other activities such as assessing students, preparing lessons, correcting students' work, in-service training and staff meetings should also be taken into account when analysing the demands placed on them in different countries. The amount of time available for these non-teaching activities varies across countries; a larger share of statutory working time spent teaching may indicate that a smaller share of time is devoted to these activities.

Even though teaching is a core activity for teachers, in a large number of countries they spend most of their working time on activities other than teaching. In the 21 countries and other participants with data for both teaching and total working time for upper secondary teachers, 43% of teachers' working time is spent on teaching on average, with the proportion ranging from less than 34% in the Czech Republic, Japan, Norway, Poland and Türkiye to at least 50% in Israel, Latvia, Lithuania, Luxembourg and Scotland (United Kingdom) (Figure D4.3).

While the proportion of working time spent teaching tends to increase with the number of teaching hours per year, there are some variations between countries. For example, Colombia and Latvia have a similar number of teaching hours at upper secondary level (836 hours in Colombia and 832 hours in Latvia), but 49% of teachers' working time is spent on teaching in Colombia, compared to 63% in Latvia. In some other countries, teachers devote similar proportions of their working time to teaching, despite having considerably different teaching hours. For example, in both Colombia and Portugal, upper secondary teachers spend about 49% of their working time teaching, but teachers teach for 667 hours in Portugal, compared to 836 hours in Colombia (Figure D4.3).

Figure D4.3. Number of hours of teaching and percentage of working time spent teaching for upper secondary teachers (2021)

Annual net teaching and total statutory working hours in general programmes in public institutions



Note: Please refer to source tables for information on whether the data refer to typical, minimum or maximum hours.
1. Actual teaching time.
2. Reference year differs from 2021. Refer to the source tables for details.
3. Average planned teaching time in each school at the beginning of the school year.
Countries and other participants are ranked in descending order of the percentage of total statutory working time spent teaching.
Source: OECD (2022), Tables D4.1 and D4.2. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

StatLink https://stat.link/9i15wx

In some countries, such as Austria (primary and secondary levels), Costa Rica, the French Community of Belgium (lower and upper secondary levels), Italy, Lithuania (pre-primary) and Mexico (upper secondary level), there are no formal requirements on the amount of time spent on all non-teaching activities. However, this does not mean that teachers are given total freedom to carry out other tasks. In Italy, teachers are required to perform up to 80 hours of scheduled non-teaching collegial work at school per year. Of these 80 hours, up to 40 hours are dedicated to meetings of the teachers' assembly, staff planning meetings and meetings with parents, with the remaining 40 compulsory hours dedicated to class councils (Table X3.D4.2).

Non-teaching tasks and responsibilities

Non-teaching tasks are a part of teachers' workloads and working conditions. The non-teaching activities required by legislation, regulations or agreements between stakeholders (e.g. teachers' unions, local authorities and school boards) do not necessarily reflect teachers' actual participation in non-teaching activities, but they provide an insight into the breadth and complexity of teachers' roles.

Individual teachers often do not have the authority to choose whether or not to perform certain tasks related to teaching. According to regulations for general upper secondary teachers, individual planning or preparing lessons, marking and correcting student work, and communicating and co-operating with parents are three non-teaching tasks that are mandatary for teachers during their statutory working time in at least 35 out of the 39 countries and other participants with available data.

General administrative work and teamwork, and dialogue with colleagues, are also required in 31 countries, and can be decided at the school level in at least 3 other countries with available data (Table D4.4, available on line).

Responsibilities such as being class/form teacher, participating in mentoring programmes and/or supporting new teachers in induction programmes, or participating in school or other management in addition to teaching duties are largely distributed among general upper secondary teachers in more than half of countries (as they are either mandatory for teachers or mandatory at the discretion of schools). Of the various responsibilities teachers might take on, full-time classroom teachers (in general upper secondary education) are either required or asked to perform student counselling in about two out of three countries and other participants with available information. However, in some countries, not all teachers can perform student counselling. For example, in Israel, only teachers with master's degree or higher can perform this duty (Table D4.5, available on line).

Teachers do not only take on the responsibilities they are required to by regulations or their school heads; they also often do so voluntarily. In 18 countries and other participants at the general upper secondary level, individual teachers decide themselves whether to engage in extracurricular activities or whether to train student teachers. Teaching more classes or hours than their full-time contract requires is also a voluntary decision by teachers in nearly half of countries and other participants (Table D4.5, available on line).

Participation in professional development activities is considered an important responsibility of teachers at all levels of education, as it is mandatory for all teachers at all levels in 25 countries and other participants. Participation is required at the discretion of individual schools in 10 countries for at least one level of education. Only four countries allow teachers to participate in professional development activities at their own discretion at all levels (Table D4.5, available on line). Regardless of the requirements, a large majority of teachers in OECD countries participate in professional development activities (OECD, 2019[3]).

In general, requirements to perform certain tasks and responsibilities do not vary much across levels of education. However, there can be some differences reflecting the changing needs of students at different levels of education. For example, upper secondary teachers are required to supervise students during breaks in 16 countries, but this is much more widespread at pre-primary and primary levels (22 countries) (Table D4.4).

Differences in tasks' requirements between countries could explain the differences in the proportion of statutory working time spent on non-teaching tasks and responsibilities. For example, Japan is one of the five countries where engaging in extracurricular activities is mandatory at lower secondary level (Table D4.5). Indeed, lower secondary teachers in Japan reported spending the highest proportion of actual working time (13%) among OECD countries on this responsibility (OECD, 2019[3]).

Regardless of whether they are mandatory or not, the performance of additional tasks and responsibilities may be accompanied by some compensation, either in the form of reduced teaching time or in the form of allowances or additional remuneration on top of the base salary according to different criteria (see Indicator D3 for the criteria for additional payments).

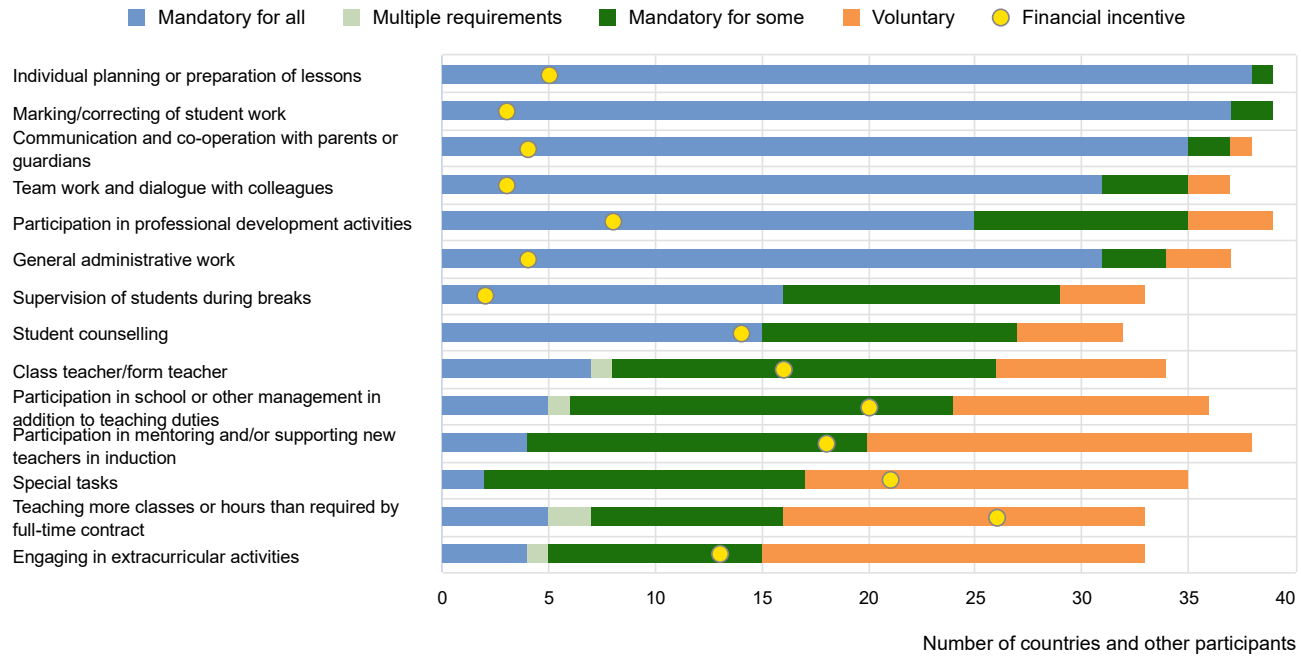
At the upper secondary level, as at other levels of education, the number of countries awarding teachers an allowance or additional payments varies according to the tasks and responsibilities concerned, and the number is larger for tasks that are voluntary for all teachers in a larger share of countries (Figure D4.4).

Tasks related to teaching such as individual planning or preparing lessons, marking and correcting student work, and communicating and co-operating with parents are rarely compensated. At upper secondary level, performing these tasks results in an additional payment or allowance in less than 13% (5 out 39) of the countries with available data (Figure D4.4 and Table D4.4 available on line). However, more than two-thirds of countries and other participants offer financial compensation to teachers at upper secondary level for teaching more classes or hours than their full-time contract requires (Figure D4.4 and Table D4.5, available on line). This may be explained by the fact that this task is directly related to teachers' main role and that the status of teachers clearly defines the number of hours they are expected to teach, so additional hours need to be compensated for.

Participation in school or other management activities can result in specific compensation for teachers in more than half of the countries and other participants with available data. In some, their teaching time might be reduced to balance the workload between teaching and other responsibilities, in addition to financial compensation (Figure D4.4 and Table D4.5, available on line).

Figure D4.4. Task requirements of teachers and financial incentives, by tasks and responsibilities (2021)

Upper secondary teachers in public institutions



Note: England (United Kingdom), the Flemish and French Communities of Belgium, and Scotland (United Kingdom) are included in the number of countries and other participants. "Mandatory for some" indicates that the specified task or responsibility is mandatory at the discretion of individual schools or in some subnational entities. "Financial incentive" indicates the task results in an allowance or additional payments for teachers.
Tasks and responsibilities are listed in decreasing order of the number of countries and other participants where the specified item is mandatory to some extent.
Source: OECD (2022), Tables D4.4 and D4.5, available on line. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

StatLink https://stat.link/lziay4

Working time of school heads

As with teachers' working time, many OECD and partner countries define school heads' statutory working time under relevant regulations or collective or individual contracts. In France, Japan, Korea, Mexico (upper secondary education), Portugal and Türkiye, civil servants' regulations apply for school heads' working time (as for teachers, except in Korea, Mexico and Portugal). Only in England (United Kingdom), the Flemish Community of Belgium, Germany (in most Länder), Greece, Italy and Luxembourg are there no official documents quantifying school heads' working time (Figure D4.2 and Table X3.D4.7 in Annex 3).

Depending on the level of education, on average across OECD countries and other participants, school heads work 43-44 weeks or 211-214 days per year. On average, their annual working hours do not vary much between levels of education: 1 613 hours at primary level, 1 612 hours at lower secondary level and 1 608 hours at upper secondary level. At pre-primary level, however, their annual statutory working hours are on average 40 hours longer than at upper secondary level. Across all levels of education, school heads in Türkiye have the longest hours (1 844 hours per year). Statutory working hours are lowest in Mexico (at pre-primary level) and Ireland (for primary and lower and upper secondary general programmes) where statutory working hours are below 1 300 hours per year (Table D4.3).

In 19 out of 27 countries and other participants with available data (70%), school heads' annual working hours do not vary much across levels of education. In the remaining eight countries where their statutory working time do vary, school heads in pre-primary or primary education generally work more hours per year than those in secondary education. For example, school heads' statutory hours in pre-primary schools are 1-14% higher than in primary and secondary schools in Australia, Estonia, Finland and New Zealand. In Mexico, school heads have shorter working hours at pre-primary and primary levels than at lower secondary level (by 14%) and at upper secondary level (by 17%) (Table D4.3).

In about two-thirds of the countries with available data, the statutory working time of school heads includes working during students' school holidays. The amount worked during school holidays ranges from about 1 week in Austria, Scotland

(United Kingdom) and the Netherlands (at the request of the school heads' employers) to 10 weeks in Türkiye. In some of these countries, school heads are required to prepare for the new school semester and arrange professional development programmes during school holidays. In the other one-third of countries, the regulations do not require school heads to work during students' school holidays. Nevertheless, the actual practice could be different. For example, school heads in Ireland may work during at least a part of students' school holidays although it is not included in their statutory working time (Table X3.D4.7 in Annex 3).

Tasks and responsibilities of school heads

In more than half of the OECD countries and other participants with available data, regulations explicitly state that school heads are expected to play managerial and leadership roles. In addition, school heads can be required to perform other tasks and responsibilities, such as management of human/financial resources, organising professional development activities, organising students' educational activities and teaching students as well as facilitating good relations with parents, education inspectorates, and/or the government. In a majority of countries, the tasks and responsibilities required from school heads do not vary across levels of education and educational programmes (for more details, refer to Table X3.D4.8 in Annex 3).

However, in about one-quarter of countries with available information (Denmark, Estonia, Finland, Italy, Mexico, the Netherlands, New Zealand, Norway and Sweden), official documents on the working conditions of school heads do not detail their responsibilities and tasks. School heads in these countries may have more autonomy to organise their work and responsibilities (Table X3.D4.7 in Annex 3).

Definitions

Actual teaching time is the annual average number of hours that full-time teachers teach a group or class of students. It includes all extra hours, such as overtime. Data on these hours can be sourced from administrative registers, statistical databases, representative sample surveys or other representative sources.

The **number of teaching days** is the number of teaching weeks multiplied by the number of days per week a teacher teaches, minus the number of days on which the school is closed for holidays

The **number of teaching weeks** refers to the number of weeks of instruction excluding holiday weeks

Statutory teaching time is defined as the scheduled number of 60-minute hours per year that a full-time teacher (or a school head) teaches a group or class of students, as set by policy, their employment contracts or other official documents. Teaching time can be defined on a weekly or annual basis. Annual teaching time is normally calculated as the number of teaching days per year multiplied by the number of hours a teacher teaches per day (excluding preparation time). It is a net contact time for instruction, as it excludes periods of time formally allowed for breaks between lessons or groups of lessons and the days that the school is closed for holidays. At pre-primary and primary levels, short breaks between lessons are included if the classroom teacher is responsible for the class during these breaks.

Total statutory working time refers to the number of hours that a full-time teacher or school head is expected to work as set by policy. It can be defined on a weekly or annual basis. It does not include paid overtime. According to a country's formal policy, working time can refer to:

- the time directly associated with teaching and other curricular activities for students, such as assignments and tests
- the time directly associated with teaching and other activities related to teaching, such as preparing lessons, counselling students, correcting assignments and tests, professional development, meetings with parents, staff meetings, and general school tasks.

Working time required at school (of teachers) refers to the time teachers are required to spend working at school, including teaching and non-teaching time.

Methodology

In interpreting differences in teaching hours among countries, net contact time, as used here, does not necessarily correspond to the teaching load. Although contact time is a substantial component of teachers' workloads, preparing for classes and necessary follow-up, including correcting students' work, also need to be included when making comparisons. Other relevant

elements, such as the number of subjects taught, the number of students taught and the number of years a teacher teaches the same students, should also be taken into account.

For more information please see the *OECD Handbook for Internationally Comparable Education Statistics 2018* (OECD, 2018[4]) and Annex 3 for country-specific notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

Source

Data are from the 2021 OECD-INES-NESLI Survey on Working Time of Teachers and School Heads and refer to the school year 2020/21 (statutory information) or school year 2019/20 (actual data).

References

OECD (2021), *Education at a Glance 2021: OECD Indicators*, OECD Publishing, Paris, https://doi.org/10.1787/b35a14e5-en. [1]

OECD (2021), *Education at a Glance Database*. [5]

OECD (2021), *The State of Global Education: 18 Months into the Pandemic*, OECD Publishing, Paris, https://doi.org/10.1787/1a23bb23-en. [2]

OECD (2019), *TALIS 2018 Results (Volume I): Teachers and School Leaders as Lifelong Learners*, TALIS, OECD Publishing, Paris, https://doi.org/10.1787/1d0bc92a-en. [3]

OECD (2018), *OECD Handbook for Internationally Comparative Education Statistics 2018: Concepts, Standards, Definitions and Classifications*, OECD Publishing, Paris, https://doi.org/10.1787/9789264304444-en. [4]

Indicator D4 Tables

Tables Indicator D4. How much time do teachers and school heads spend teaching and working?

Table D4.1	Organisation of teachers' teaching time (2021)
Table D4.2	Organisation of teachers' working time (2021)
Table D4.3	Organisation of school heads' working time (2021)
WEB Table D4.4	*Teachers' tasks, by level of education (2021)*
WEB Table D4.5	*Teachers' other responsibilities, by level of education (2021)*
WEB Table D4.6	*School heads' teaching requirements (2021)*

StatLink https://stat.link/osgxer

Cut-off date for the data: 17 June 2022. Any updates on data can be found on line at http://dx.doi.org/10.1787/eag-data-en. More breakdowns can also be found at http://stats.oecd.org, *Education at a Glance Database*.

Table D4.1. Organisation of teachers' teaching time (2021)

Number of statutory teaching weeks, teaching days and net teaching hours in public institutions over the school year

		Number of weeks of teaching					Number of days of teaching					Net teaching time, in hours				
		Pre-primary	Primary	Lower secondary, general programmes	Upper secondary, general programmes	Upper secondary, vocational programmes	Pre-primary	Primary	Lower secondary, general programmes	Upper secondary, general programmes	Upper secondary, vocational programmes	Pre-primary	Primary	Lower secondary, general programmes	Upper secondary, general programmes	Upper secondary, vocational programmes
		(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(11)	(12)	(13)	(14)	(15)	(17)	(18)
OECD	**Countries**															
	Australia [1]	40	40	41	41	m	193	194	198	199	m	768	860	838	839	m
	Austria [1]	m	37	37	37	37	m	181	181	181	181	m	796	623	592	592
	Canada	m	37	37	37	m	m	185	185	185	m	m	m	m	m	m
	Chile	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Colombia [1]	40	40	40	40	40	190	190	190	190	190	760	950	836	836	836
	Costa Rica [1]	41	41	41	41	41	195	195	195	195	195	800	1 209	1 248	1 248	1 248
	Czech Republic [1]	44	39	39	39	39	211	191	191	191	191	1 308	630	630	573	573
	Denmark [1]	a	a	a	a	a	a	a	a	a	a	a	699	690	m	m
	Estonia [1]	46	35	35	35	40	222	174	174	174	199	1 332	592	609	574	a
	Finland [3]	m	38	38	38	a	m	189	189	189	a	m	680	595	567	a
	France [1]	36	36	36	36	36	162	162	a	a	a	900	900	720	720	720
	Germany [1]	46	40	40	40	40	225	193	193	193	193	1 755	691	641	610	626
	Greece [2]	37	37	35	35	35	180	180	171	171	171	675	675	590	590	590
	Hungary [2]	43	38	38	38	38	206	179	179	178	179	1 318	644	644	641	644
	Iceland	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Ireland [1]	m	37	33	33	m	m	180	164	164	m	m	900	700	700	m
	Israel [1]	37	37	36	36	36	182	182	176	176	176	1 030	846	704	650	650
	Italy [3]	42	38	38	38	38	189	169	169	169	169	945	744	608	608	608
	Japan [4]	m	41	41	39	39	m	203	203	196	196	m	750	609	507	507
	Korea [3]	36	38	38	38	38	180	190	190	190	190	767	672	517	544	541
	Latvia [5]	39	33	35	35	44	190	160	170	170	215	1 368	630	768	832	1 078
	Lithuania [2]	a	36	37	37	a	a	173	178	178	a	640	830	854	854	1 032
	Luxembourg [1]	36	36	36	36	36	176	176	176	176	176	880	810	739	739	739
	Mexico [1]	40	40	40	36	36	190	190	190	172	172	505	760	988	843	688
	Netherlands [2]	40	40	m	m	m	200	200	m	m	m	940	940	720	720	m
	New Zealand [1]	41	38	38	38	m	205	192	191	190	m	1 230	922	840	760	m
	Norway [2]	47	38	38	38	38	225	190	190	190	190	a	741	663	523	595
	Poland [2]	45	38	38	37	37	219	181	181	179	179	1 095	611	489	483	483
	Portugal [2]	40	40	38	38	38	193	193	182	182	182	965	869	667	667	667
	Slovak Republic [1]	44	38	38	38	38	211	187	187	187	187	1 161	729	645	561	598
	Slovenia [1]	46	38	38	38	38	224	190	190	190	190	1 344	627	627	570	570
	Spain [1]	37	37	37	37	37	176	176	176	176	176	871	871	665	665	665
	Sweden	47	a	a	a	a	224	a	a	a	a	m	a	a	a	a
	Switzerland [5]	39	39	39	39	39	188	188	188	188	188	788	806	750	638	713
	Türkiye [1]	38	38	38	38	38	186	186	186	186	186	930	744	521	521	521
	United States [5, 6]	36	36	36	36	a	180	180	180	180	a	1 011	1 004	966	966	a
	Other participants															
	Flemish Comm. (Belgium) [3]	35	35	35	35	35	151	151	152	152	152	669	669	616	575	605
	French Comm. (Belgium) [1]	37	37	37	37	37	170	170	170	170	170	736	680	621	588	621
	England (UK)	38	38	38	38	a	190	190	190	190	a	a	a	a	a	a
	Scotland (UK) [2]	38	38	38	38	a	190	190	190	190	a	855	855	855	855	a
	OECD average	41	38	38	37	38	196	184	183	182	185	987	784	711	684	684
	EU22 average	41	37	37	37	38	198	180	178	178	183	1 071	740	659	642	675
Partners	**Argentina**	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Brazil [3]	42	42	42	42	42	200	200	200	200	200	800	800	800	800	800
	China	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	G20 average	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m

Note: Due to the COVID-19 pandemic, the statutory requirements on organisation of teachers' teaching time may have been adjusted temporarily in some countries. See Box D4.2 and *Definitions* and *Methodology* sections for more information. Data on vocational programmes at lower secondary level (Columns 4, 10 and 16) are available for consultation on line. Data available at http://stats.oecd.org, Education at a Glance Database.

1. Typical teaching time (teaching time required from most teachers when no specific circumstances apply to teachers).
2. Maximum teaching time.
3. Minimum teaching time.
4. Average planned teaching time in each school at the beginning of the school year.
5. Actual teaching time (in Latvia except for pre-primary level).
6. Year of reference 2016.

Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/kcwi4b

Table D4.2. Organisation of teachers' working time (2021)

Teachers' statutory working time at school and total working time in public institutions over the reference year

		Working time required at school, in hours					Total statutory working time, in hours				
		Pre-primary	Primary	Lower secondary, general programmes	Upper secondary, general programmes	Upper secondary, vocational programmes	Pre-primary	Primary	Lower secondary, general programmes	Upper secondary, general programmes	Upper secondary, vocational programmes
		(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(11)	(12)
OECD	**Countries**										
	Australia	1 339	1 233	1 224	1 224	m	a	a	a	a	m
	Austria	m	a	a	a	a	m	a	a	a	a
	Canada	m	m	m	m	m	m	a	a	a	a
	Chile	m	m	m	m	m	m	m	m	m	m
	Colombia	1 152	1 152	1 152	1 152	1 152	1 720	1 720	1 720	1 720	1 720
	Costa Rica	a	a	a	a	a	a	a	a	a	a
	Czech Republic	a	a	a	a	a	1 688	1 688	1 688	1 688	1 688
	Denmark	1 628	1 628	1 628	1 628	1 628	1 628	1 628	1 628	1 628	1 628
	Estonia	1 610	a	a	a	a	1 610	1 540	1 540	1 540	1 540
	Finland	m	818	733	686	1 125	a	a	a	a	1 500
	France [1]	954	954	a	a	a	1 607	1 607	1 607	1 607	1 607
	Germany	a	a	a	a	a	1 795	1 795	1 795	1 795	1 795
	Greece	1 164	1 164	1 176	1 176	1 176	a	a	a	a	a
	Hungary	1 476	1 146	1 146	1 139	1 146	1 656	1 656	1 656	1 656	1 704
	Iceland	m	m	m	m	m	m	m	m	m	m
	Ireland	m	1 058	798	798	m	a	a	a	a	a
	Israel	1 067	1 240	1 197	1 268	1 268	1 067	1 240	1 197	1 268	1 268
	Italy	a	a	a	a	a	a	a	a	a	a
	Japan [1]	a	a	a	a	a	1 728	1 728	1 728	1 728	1 728
	Korea	a	a	a	a	a	1 440	1 520	1 520	1 520	1 520
	Latvia	1 560	1 050	1 050	1 050	1 320	1 760	1 320	1 320	1 320	1 320
	Lithuania	a	1 512	1 512	1 512	1 512	a	1 512	1 512	1 512	1 512
	Luxembourg	1 060	990	859	859	859	1 500	1 394	1 229	1 229	1 229
	Mexico	772	890	1 167	a	a	a	a	a	a	a
	Netherlands	a	a	a	a	a	1 659	1 659	1 659	1 659	1 659
	New Zealand	1 820	1 536	1 243	950	m	a	a	a	a	m
	Norway	a	1 300	1 225	1 150	1 150	a	1 688	1 688	1 688	1 688
	Poland	a	a	a	a	a	1 752	1 448	1 448	1 432	1 432
	Portugal	1 101	1 005	852	852	852	1 423	1 423	1 368	1 368	1 368
	Slovak Republic	m	m	m	m	m	1 560	1 560	1 560	1 560	1 560
	Slovenia	m	m	m	m	m	m	m	m	m	m
	Spain	1 140	1 140	1 140	1 140	1 140	1 425	1 425	1 425	1 425	1 425
	Sweden	1 792	1 360	1 360	1 360	1 360	a	1 767	1 767	1 767	1 767
	Switzerland [1]	a	a	a	a	a	1 866	1 866	1 866	1 866	1 866
	Türkiye [1]	1 010	820	750	750	750	1 576	1 576	1 576	1 576	1 576
	United States [2]	1 441	1 443	1 449	1 446	a	m	m	m	m	a
	Other participants										
	Flemish Comm. (Belgium)	870	870	773	723	760	a	a	a	a	a
	French Comm. (Belgium)	a	a	a	a	a	962	962	a	a	a
	England (UK)	a	a	a	a	a	1 265	1 265	1 265	1 265	a
	Scotland (UK)	1 080	1 080	1 080	1 080	a	1 365	1 365	1 365	1 365	a
	OECD average	m	m	m	m	m	m	1 543	1 557	1 559	1 570
	EU22 average	m	m	m	m	m	1 573	1 524	1 547	1 546	1 546
Partners	Argentina	m	m	m	m	m	m	m	m	m	m
	Brazil	m	m	m	m	m	a	a	a	a	a
	China	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m	m	m	m	m
	G20 average	m	m	m	m	m	m	m	m	m	m

Note: Due to the COVID-19 pandemic, the statutory requirements on the organisation of teachers' working time may have been adjusted temporarily in some countries. See Box D4.2 and *Definitions* and *Methodology* sections for more information. Data on vocational programmes at lower secondary level (Columns 4 and 10) are available for consultation on line. Data available at http://stats.oecd.org, Education at a Glance Database.

1. Total working time requirements refer to those of civil servants.
2. Year of reference 2016.

Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

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Table D4.3. Organisation of school heads' working time (2021)

Number of statutory working weeks, working days and total working hours in public institutions over the reference year

		Number of weeks of working					Number of days of working					Total working time, in hours				
		Pre-primary	Primary	Lower secondary, general programmes	Upper secondary, general programmes	Upper secondary, vocational programmes	Pre-primary	Primary	Lower secondary, general programmes	Upper secondary, general programmes	Upper secondary, vocational programmes	Pre-primary	Primary	Lower secondary, general programmes	Upper secondary, general programmes	Upper secondary, vocational programmes
		(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(11)	(12)	(13)	(14)	(15)	(17)	(18)
OECD	**Countries**															
	Australia	41	41	41	41	m	199	199	198	199	m	1 505	1 319	1 318	1 319	m
	Austria	m	38	38	38	38	m	187	187	186	186	m	1 776	1 776	a	a
	Canada	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Chile	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Colombia	45	45	45	45	45	212	212	212	212	212	1 696	1 696	1 696	1 696	1 696
	Costa Rica	42	42	42	42	42	200	200	200	200	200	a	a	a	a	a
	Czech Republic	44	44	44	44	44	211	211	211	211	211	1 688	1 688	1 688	1 688	1 688
	Denmark	46	46	46	46	46	220	220	220	220	220	1 628	1 628	1 628	1 628	1 628
	Estonia	46	44	44	44	44	222	219	219	219	219	1 776	1 752	1 752	1 752	1 752
	Finland	43	44	44	44	44	215	211	211	211	211	1 666	1 551	1 551	1 551	1 551
	France [1]	a	a	a	a	a	a	a	a	a	a	1 607	1 607	1 607	1 607	1 607
	Germany	46	46	46	46	46	225	225	225	225	225	m	m	m	m	m
	Greece	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a
	Hungary	43	43	43	43	43	206	206	206	206	206	1 648	1 648	1 648	1 648	1 648
	Iceland	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Ireland	m	37	33	33	m	m	180	164	164	m	m	1 058	798	798	m
	Israel	a	42	40	40	40	a	205	199	199	199	a	1 602	1 552	1 552	1 552
	Italy	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a
	Japan [1]	m	45	45	45	45	m	223	223	223	223	1 728	1 728	1 728	1 728	1 728
	Korea [1]	48	48	48	48	48	228	228	228	228	228	1 824	1 824	1 824	1 824	1 824
	Latvia	44	44	44	44	44	215	215	215	215	215	1 720	1 720	1 720	1 720	1 720
	Lithuania	44	44	44	44	44	213	213	213	213	213	1 704	1 704	1 704	1 704	1 704
	Luxembourg	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a
	Mexico	43	43	43	39	39	205	205	205	187	187	1 230	1 230	1 435	1 496	1 496
	Netherlands	42	42	m	m	m	208	208	m	m	m	1 659	1 659	1 659	1 659	1 659
	New Zealand	41	38	38	38	m	205	192	191	190	m	1 640	1 536	1 528	1 520	m
	Norway	47	45	45	45	45	225	225	225	225	225	1 688	1 688	1 688	1 688	1 688
	Poland	45	45	45	45	45	219	219	219	219	219	1 752	1 752	1 752	1 752	1 752
	Portugal [1]	48	48	48	48	48	229	229	229	229	229	1 603	1 603	1 603	1 603	1 603
	Slovak Republic	44	44	44	44	44	211	211	211	211	211	1 583	1 583	1 583	1 583	1 583
	Slovenia	45	45	45	45	45	219	219	219	219	219	1 752	1 752	1 752	1 752	1 752
	Spain	42	42	44	44	44	200	200	210	210	210	1 500	1 500	1 575	1 575	1 575
	Sweden	46	46	46	46	46	219	219	219	219	219	1 752	1 752	1 752	1 752	1 752
	Switzerland	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Türkiye [1]	48	48	48	48	48	236	236	236	236	236	1 844	1 844	1 844	1 844	1 844
	United States [2, 3]	46	46	46	46	a	230	230	230	230	a	m	m	m	m	a
	Other participants															
	Flemish Comm. (Belgium)	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a
	French Comm. (Belgium)	42	42	42	42	42	210	210	210	210	210	a	a	a	a	a
	England (UK)	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a
	Scotland (UK)	39	39	39	39	a	195	195	195	195	a	1 365	1 365	1 365	1 365	a
	OECD average	44	43	43	43	44	214	212	211	211	214	1 648	1 613	1 612	1 608	m
	EU22 average	44	44	44	44	44	215	211	211	211	214	1 669	1 631	1 620	1 611	1 665
Partners	**Argentina**	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Brazil	42	42	42	42	42	200	200	200	200	200	m	m	m	m	m
	China	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	G20 average	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m

Note: Due to the COVID-19 pandemic, the statutory requirements on the organisation of school heads' working time may have been adjusted temporarily in some countries. See Box D4.2 and *Definitions* and *Methodology* sections for more information. Data on vocational programmes at lower secondary level (Columns 4, 10 and 16) are available for consultation on line. Data available at http://stats.oecd.org, Education at a Glance Database.

1. Total working time requirements refer to those of civil servants.
2. Actual data.
3. Year of reference 2016.

Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

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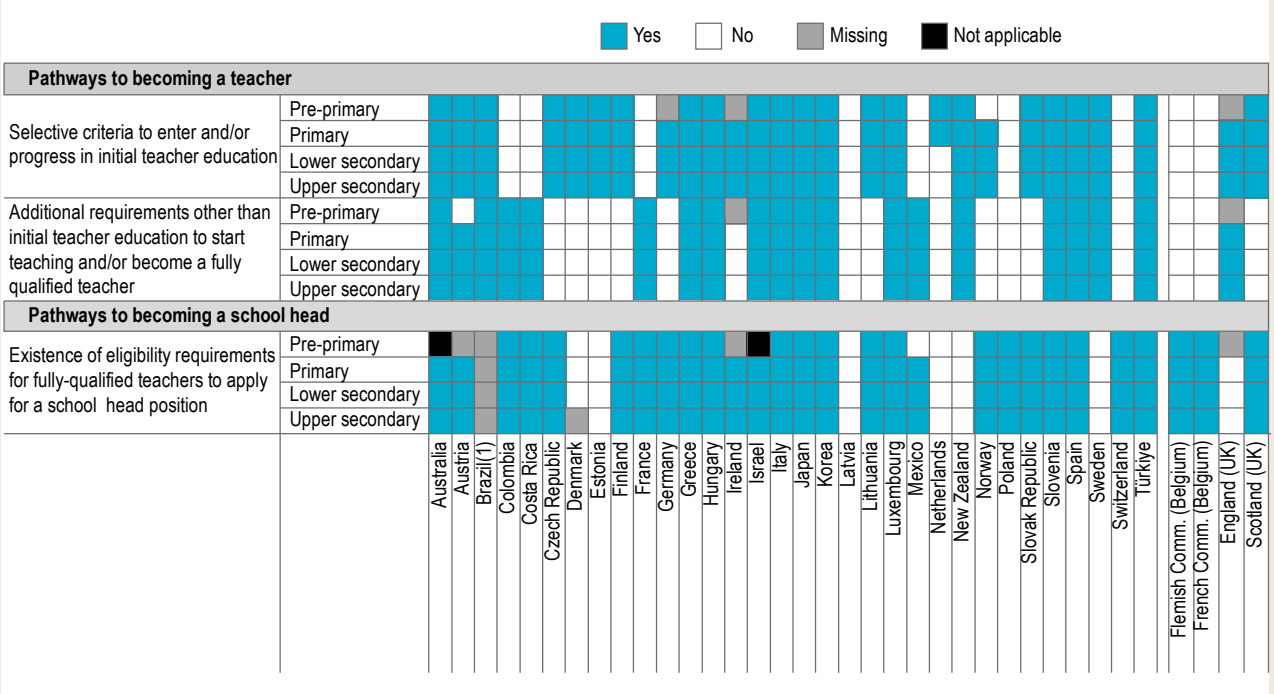
Indicator D6. What are the pathways to becoming a teacher and a school head?

Highlights

- Typically, the duration of initial teacher education programmes varies from 3 years in Costa Rica, the Flemish and French Communities of Belgium, and New Zealand to 6.5 years in Germany, for prospective lower secondary teachers of general subjects. Usually, the duration is similar for primary and secondary teachers, but shorter for pre-primary teachers. A tertiary qualification is awarded upon completion of the programme in most countries, regardless of the level of education at which the teacher will teach.
- Graduates from initial teacher education programmes for pre-primary, primary or secondary teachers can immediately start teaching in schools and acquire full teaching qualification in nearly half of the 36 countries and other participants with available data. To become a fully qualified lower secondary teacher of general subjects, the successful completion of a probation period is required in one-third of the 36 cases.
- School head positions for schools covering either primary, lower secondary general or upper secondary general programmes are open only to fully qualified teachers in nearly two-thirds of the countries and other participants with available data.

Figure D6.1. Pathways to becoming a teacher or school head, by level of education (2021)

For teachers teaching general subjects and school heads of general programmes in public institutions



1. Year of reference differs from 2021. Refer to the source table for more information.

Source: OECD (2022), Tables D6.1, D6.4 and D6.6. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

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Context

As schooling has expanded, raising the quality of education has become an important part of the policy agenda in most OECD countries. High-quality teachers and school heads are at the heart of high-quality student learning outcomes, and thus essential to achieving this goal (Schleicher, 2012[1]).

How candidates are chosen to train for and enter the teaching profession influences the supply of qualified teachers, both in quantity and quality. The criteria and requirements applied to prospective teachers also reflect the profiles of teachers who are prepared for the teaching – and non-teaching – responsibilities they will perform on the job (see Indicator D4). Adequate compensation (see Indicator D3) and the value placed on the teaching profession by society can also help to attract and maintain the pool of aspiring teachers.

Many countries are facing difficulties in attracting talented individuals to become teachers and replace those leaving the profession (see Indicator D7 in (OECD, 2021[2])). Offering pathways into teaching other than initial teacher education can help to mitigate immediate teacher shortages, and also to diversify the profiles of teachers (Musset, 2010[3]).

Initial education and pre-service training are only the starting points for teachers' and school heads' ongoing professional development. Given the constant changes in student demographics and the need to update their knowledge and competencies as society evolves, continuing professional development is essential to maintaining the quality of staff in the education system (see Indicator D7).

Other findings

- Initial teacher education of pre-primary, primary and lower secondary (general subject) teachers is organised according to the concurrent model (in which pedagogical and practical training are provided at the same time as courses in academic subject matter) in more than three-quarters of OECD and partner countries. However, for upper secondary school teachers, the consecutive model, in which pedagogical and practical training come after courses in the academic subject matter, is approximately as common as the concurrent model.
- Approximately two-fifths of countries and other participants set a limit on the number of student places for entry into initial teacher education of pre-primary, primary and secondary teachers of general subjects (i.e. a *numerus clausus* policy). Grade point averages from secondary school(s) or upper secondary examinations are the most widely used selective criteria to enter initial teacher education.
- In nearly all countries, studies that are closely related to teaching and pedagogy (such as pedagogical studies/didactics), the academic subjects that prospective teachers will teach and a teaching practicum are mandatory elements of initial teacher education programmes for prospective secondary teachers of general subjects.
- Formal inductions consist of structured and repeated activities to support the introduction of new teachers into the profession, such as mentoring by experienced teachers or peer work with other new teachers. In most countries except Costa Rica, Latvia and Switzerland, such inductions are either mandatory for all prospective teachers or mandatory for prospective teachers at the discretion of individual schools in at least one level of education.
- Alternative pathways into the teaching profession (for individuals without teaching qualifications but with professional experience outside teaching) are available in half of the countries and other participants with available data at primary level, but in more than half at the secondary level.

Analysis

Pathways to becoming a teacher

Becoming a teacher usually requires the completion of initial teacher education. Once completed, graduates of initial teacher education may be required to fulfil additional requirements before they can start teaching or be considered fully qualified. Once new teachers start work, schools may be required to offer them a formal induction.

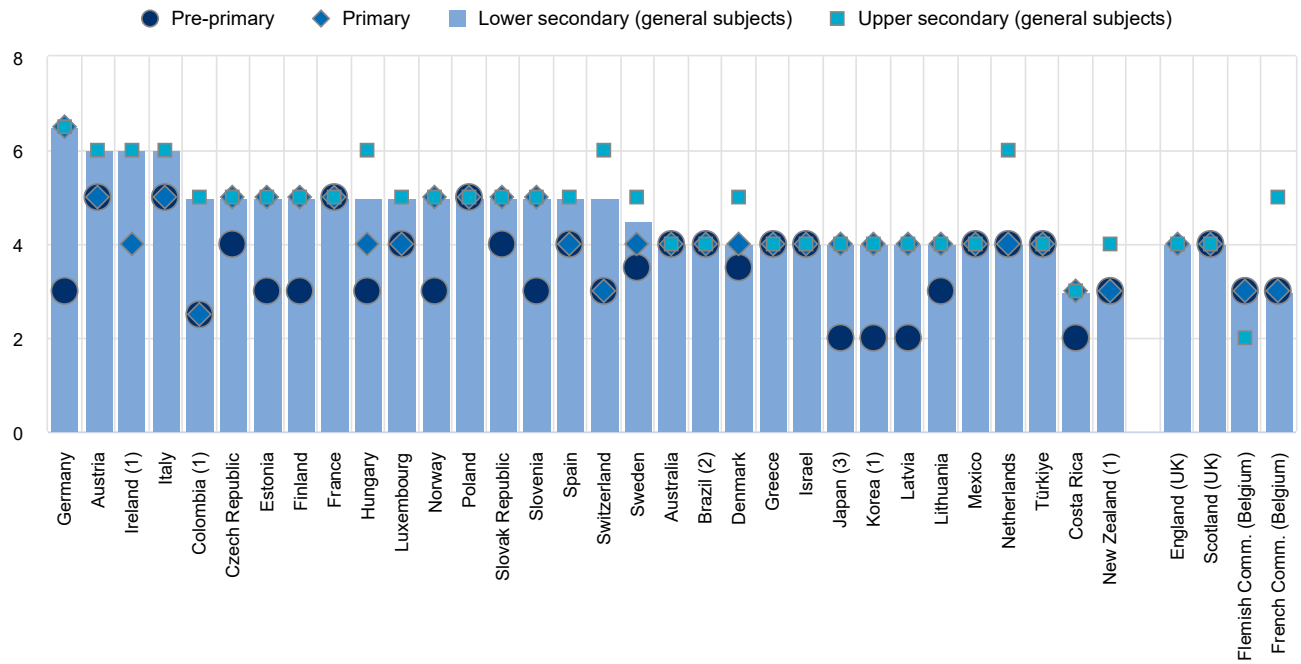
Initial teacher education

Organisation of initial teacher education

For prospective lower secondary teachers of general subjects, the duration of initial teacher education programmes ranges from 3 years in Costa Rica, the Flemish and the French Communities of Belgium, and New Zealand to 6.5 years in Germany. In nearly two-thirds of 36 OECD and partner countries and other participants, the duration of initial teacher education is the same for primary and lower and upper secondary teachers of general subjects. In less than two-thirds of the countries and other participants with comparable data, the duration of initial teacher education is 0.5 to 3.5 years shorter for pre-primary teachers than for lower secondary teachers of general subjects (Figure D6.2).

Figure D6.2. Duration of initial teacher education, by level of education (2021)

For teachers in public institutions, in number of years



1. Minimum duration reported in Colombia (pre-primary and primary), Ireland (primary), Korea (pre-primary) and New Zealand (lower secondary, general subjects).
2. Year of reference differs from 2021. Refer to the source table for more information.
3. Representative duration of programmes.

Countries and other participants are ranked in descending order of the duration of initial teacher education for lower secondary teachers.

Source: OECD (2022), Table D6.1. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

StatLink https://stat.link/ptnig8

These differences in the duration of initial teacher education may reflect differences in the organisation of pedagogical and practical training and in the qualification awarded. Across 36 countries and other participants with available data, no single model of initial teacher education prevails for prospective lower secondary teachers of general subjects. The concurrent model, where pedagogical and practical training are provided at the same time as courses in the academic subject matter to be taught, is available in 27 countries and other participants. Meanwhile, the consecutive model, where pedagogical and practical training are provided after subject matter courses, is available in 22. In most countries, only one model of initial education is used, but 13 countries and other participants offer both. The average duration of consecutive model programmes (5.1 years) is about half a year longer than the average duration of concurrent model programmes (4.6 years). This differences in length can largely be explained by the duration of the pedagogical and practical training in the consecutive model, ranging from 0.5 years in Mexico to 3 years in Italy (Table D6.1 and Figure X3.D6.3 in Annex 3).

The most prevalent model of initial teacher education does vary depending on the level of education to be taught. The concurrent model is predominant for initial teacher education of pre-primary, primary and lower secondary teachers in more than three-quarters of OECD and partner countries with available information. In contrast, for prospective upper secondary teachers (teaching either general or vocational subjects), concurrent and consecutive models exist in an equal number of countries and other participants. More systems use both concurrent and consecutive models for prospective lower and upper secondary teachers of general subjects (13-14 countries and other participants) than for prospective pre-primary and primary teachers (5-6 countries and other participants) (Table D6.1).

In most countries and other participants, a tertiary qualification is awarded upon completion of initial teacher education, regardless of the level of education at which the teacher will teach. This not only signals the level of knowledge and skills that the new teacher has acquired, but may also indicate the social status of teachers. For example, graduates of initial teacher education programmes for lower secondary teachers of general subjects are usually awarded a bachelor's degree (in 18 countries and other participants) or a master's degree (in 20 countries and other participants). In countries and other participants where initial teacher education lasts for three to four years, graduates are awarded a bachelor's degree, except in Costa Rica where a three-year programme leads to a master's degree. In contrast, in countries where initial teacher education lasts more than four years, graduates are awarded a master's degree, except in Colombia where a five-year programme leads to a bachelor's degree (Table D6.1).

However, the type of tertiary qualification awarded at the end of initial teacher education varies according to the level of education at which the teacher will teach, or the subject taught. For prospective pre-primary teachers, the most prevalent type of qualification is a bachelor's degree, but for prospective upper secondary teachers of general subjects a master's degree is more common. For prospective secondary teachers of vocational subjects, bachelor's or master's degrees are equally prevalent, although a short-cycle tertiary qualification can also be awarded in England (United Kingdom), the Flemish Community of Belgium and Mexico (teachers at lower secondary level only) (Table D6.1).

Selection into and during initial teacher education

The educational requirements for entry into initial teacher training, which are tertiary degree programmes, differ little. In most countries and other participants with available data, the minimum requirement is usually an upper secondary qualification. However, in a few countries, the minimum educational requirement for prospective pre-primary teachers is a lower secondary qualification (Austria, Brazil, the Czech Republic and the Slovak Republic). In Brazil this is also the case for prospective primary teachers. Costa Rica requires a short-cycle tertiary qualification for entry into initial teacher education at all levels of education, and in the Flemish Community of Belgium, a bachelor's degree or equivalent is required for entry into initial teacher training to become an upper secondary teacher of general subjects (Table D6.2).

Some countries limit the number of student places for entry into initial teacher education (i.e. a *numerus clausus* policy). For example, over one-third of countries and other participants with available data implement *numerus clausus* policies for initial teacher education of pre-primary, primary and secondary teachers of general subjects, and most of them have one or more selective criteria, except Italy (for secondary teachers) and Norway (for pre-primary teachers) (Table D6.2).

Over two-thirds of the countries and other participants with data have at least one selective criterion to enter and/or to progress through initial teacher education. In most cases, selection occurs at entry, except in Germany and Italy where there is no selection to enter the initial teacher education programme, but there is for students to progress into the later stages (Figure D6.1 and Table D6.1).

Regardless of the level of education to be taught, the most widespread criterion for entry into initial teacher education is grade point averages from secondary school(s) or upper secondary examinations. Among countries and other participants with at

least one criterion for prospective pre-primary, primary and secondary teachers of general subjects, nearly three-fifths use school grades or upper secondary examinations. Competitive examinations are used in about two-fifths of the cases with at least one criterion, interviews in less than two-fifths of the cases and a standardised test in less than one-fifth of the cases. Some countries use other criteria, such as portfolios of the candidates' work, minimum grades in specific subjects and/or aptitude or competence examinations, but each of these is used in very few countries. In the majority of cases where entry is selective, a combination of criteria are used: over four-fifths of these countries and other participants use more than one criterion, or more than one can be used at the autonomy of each institution (Table D6.2).

Initial teacher education following the consecutive model may also use selection before students can progress to the next stage, in addition to validating the courses and degrees taken in the first stage. Eleven countries and other participants have a *numerus clausus* policy limiting the number of students who can progress to the next stage. In Mexico and Slovenia, even though the number of student places in the next stage is fixed and limited, there are no criteria used for selection of students. About half of the 22 countries and other participants with a consecutive model use at least one criterion to select which prospective lower secondary teachers of general subjects can proceed to the next stage of initial teacher education. In the Czech Republic, criteria can vary within the country as they are set at the discretion of individual initial teacher education institutions. The criteria used include grade point averages from the first stage of initial teacher education, interviews, standardised tests and competitive examination (in four or less countries for each criterion). Four countries use other additional criteria, such as a professional suitability test, additional academic certifications/degrees and a minimum level of foreign language (Table D6.2).

Content of initial teacher education

The content of initial teacher education not only covers the academic subjects that prospective teachers will teach, but also pedagogical didactics, child and adolescent development, educational science, and sometimes research skills development. Prospective teachers are also usually required to participate in a teaching practicum.

In 20 out of 36 countries and other participants, all prospective teachers take a common set of courses, irrespective of the level of education or subject they will teach. For example, all students of initial teacher education in Japan are required to take certain courses (e.g. pedagogical studies/didactics and child/adolescent development studies). In the Flemish Community of Belgium, all initial teacher education programmes work towards the same framework, "Basic Competences", which is the reference framework for teacher education of knowledge, skills and attitudes that every teacher must have (Table D6.3).

In initial teacher education programmes for lower secondary teachers of general subjects, the academic subject to be taught are mandatory for all students in nearly all 36 countries and other participants, except in Costa Rica and the Netherlands, where it is at the discretion of individual institutions, and in France where students are only advised to choose academic subject courses that they intend to teach in the first stage of initial teacher education (bachelor's degree), but are required to take these courses in the second stage of initial teacher education (master's degree) (Figure D6.3).

The required content areas of initial teacher education differ between prospective teachers of general and vocational subjects, and between teachers intending to teach at different levels of education. For example, studying the academic subject to be taught is mandatory in initial teacher education programmes for all prospective lower and upper secondary teachers of general subjects in nearly all countries. However, fewer countries and other participants require this for prospective pre-primary and primary teachers, or for secondary teachers of vocational subjects. It may be due to the nature of these levels of education and subjects. For example, at pre-primary level the concept of academic subject may not be clear, and at the secondary level prospective teachers of vocational subjects may be required to acquire vocational subject matter knowledge prior to or outside of initial teacher education programmes (Table D6.3).

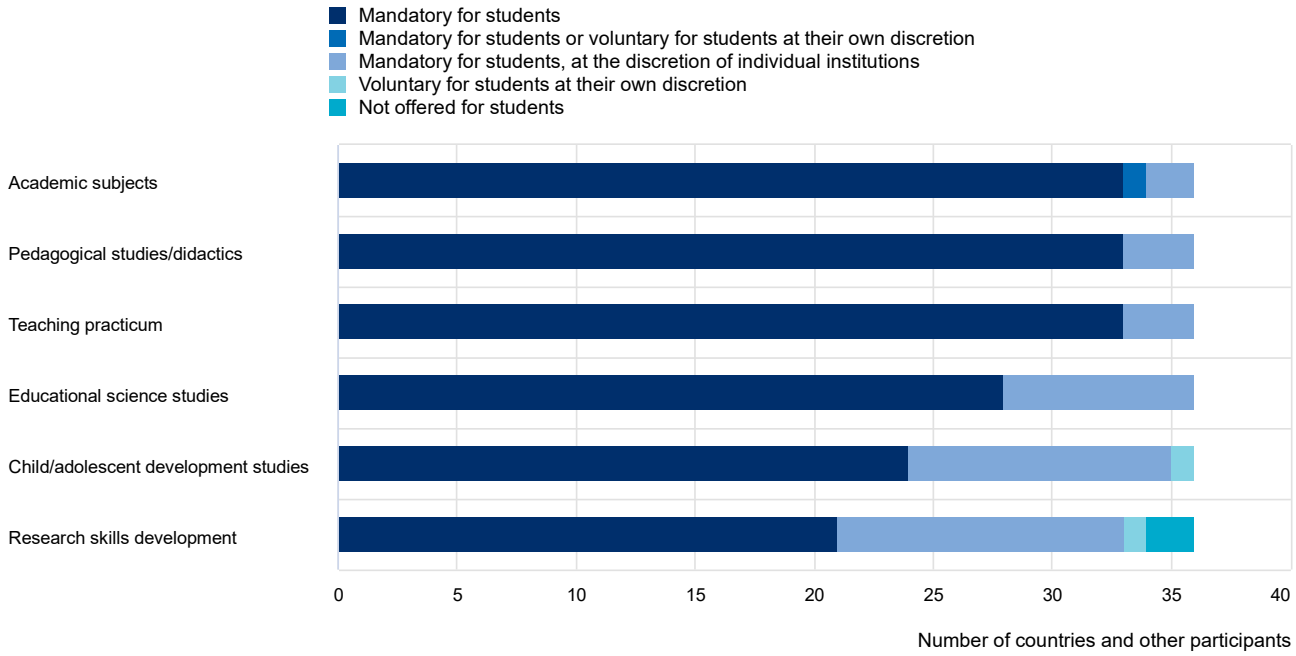
Studying a minimum number of academic subjects is mandatory for prospective lower secondary teachers of general subjects in 18 countries and other participants. One academic subject is mandatory in one-half of these countries and two or more in the other half. In a few of these countries, other specific subjects are also mandatory for all prospective teachers, such as academic writing in Israel and a foreign language in the Slovak Republic (Table D6.3).

Academic subject studies might be taught either specifically to prospective teachers or as part of a wider course alongside students studying the subject for purposes other than teaching. Courses in relevant subject areas are provided specifically to prospective pre-primary, primary and lower secondary (general subjects) teachers in about three-fifths of the countries, and to prospective upper secondary (general subjects) teachers in less than half of the countries. The difference across levels of education could be explained by the extent of the knowledge that prospective teachers need to acquire and the organisation

of initial teacher education: for example, the first stage of initial teacher education programmes following the consecutive model is often a bachelor's programmes in an academic discipline (Table D6.3). Academic subject studies specific to prospective teachers may make it easier to integrate in cross-curricular topics, such as global citizenship education and education for sustainable development (see Box D6.1).

Figure D6.3. Required content in initial teacher education (2021)

For lower secondary teachers teaching general subjects in public institutions



Note: The Flemish and French Communities of Belgium, England (United Kingdom) and Scotland (United Kingdom) are included in the number of countries and other participants.
Types of content are ranked in descending order of the number of countries and other participants where the specified content is a mandatory requirement for all students.
Source: OECD (2022), Table D6.3. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

StatLink https://stat.link/8p4xva

Box D6.1. Inclusion of global citizenship education (GCED) and education for sustainable development (ESD) in national education policies, curricula, teacher education and student assessment

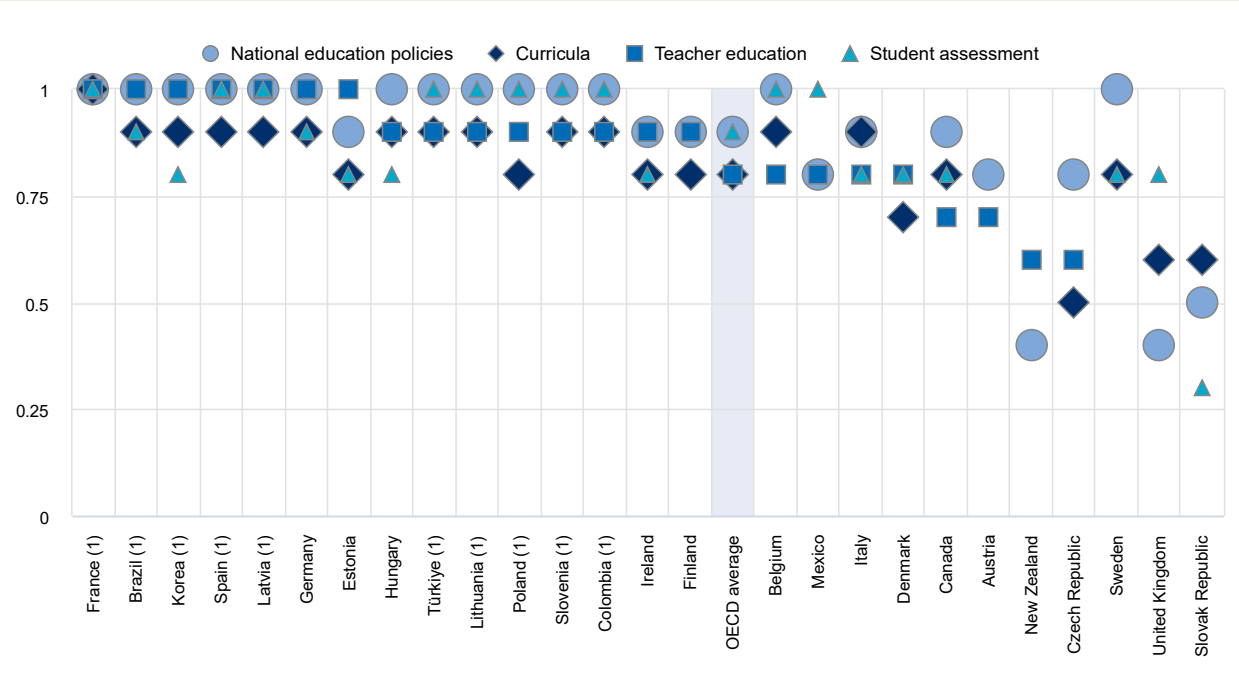
Beyond offering students literacy and numeracy skills, education should teach learners about building peace, sustainable development, greater justice, and social and gender equality. Providing students with the skills and competencies to allow them to live together and to live sustainably is central. Global citizenship education (GCED) and education for sustainable development (ESD) are recognised as integral elements of Sustainable Development Goal (SDG) 4 on quality education and a key enabler of all other SDGs. Indicator 4.7.1 measures the extent to which (i) global citizenship education and (ii) education for sustainable development are mainstreamed in (a) national education policies; (b) curricula; (c) teacher education; and (d) student assessment in primary and secondary education. Analysing the extent to which these subjects are included in national education policies, curricula, teacher education and student assessment gives an indication of future generations' awareness on these topics.

The Indicator 4.7.1 was first published in the UN's Global SDG Indicator database in July 2021 following the completion of the seventh consultation on the UNESCO's *1974 Recommendation concerning Education for International Understanding* (UNESCO, 1975[4]). Data are currently available for 26 OECD and partner countries. The indicator is presented using a separate index scoring between 0 and 1 for each of its four components: national education policies, curricula, teacher education and student assessment.

Brazil, France and Spain are the only three OECD and partner countries that report high levels of mainstreaming of GCED and ESD in primary and secondary education across all four components. About half of the countries reported that GCED and ESD were fully mainstreamed in national education policies (i.e. a score of 1) in primary and secondary education and a similar proportion in student assessment. In contrast, no country reported this for curricula and only 3 countries (Brazil, France and Korea) out of 23 reported it for teacher education (Figure D6.4).

Figure D6.4. Mainstreaming of global citizenship education and education for sustainable development in policies, curricula, teacher education and assessment (2020)

SDG Indicator 4.7.1.



Note: The closer the value is to 1, the greater the level of mainstreaming of global citizenship education (GCED) and education for sustainable development (ESD) in the component. GCED and ESD are "mainstreamed" in a component if they or their themes are mentioned explicitly in relevant documents related to the given component and are expected to be implemented by the relevant authorities.
1. The value for the national policies score equals 1 and is hidden by other scores.
Countries are ranked in descending order of the score for teacher education.
Source: Responses to the quadrennial reporting by UNESCO Member States on the implementation of the 1974 Recommendation concerning Education for International Understanding, Co-operation and Peace and Education relating to Human Rights and Fundamental Freedoms.

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Teacher education has a key role in promoting the basic theme of education for sustainable development. Teachers are in direct contact with students in class and they may guide better the young generation for sustainable consumption of resources (Esa, 2010[5]). Indicator 4.7.1 captures the teacher education component of the indicator by asking questions on the GCED and ESD components in the initial and pre-service training of teachers, trainers and educators. The indicator also measures the ESD themes incorporated in the teacher education such as cultural diversity and tolerance, gender equality, human rights, peace and non-violence, climate change, environmental sustainability, human survival and well-being, and sustainable consumption and production. Lastly, the two remaining questions are on the learning dimension (knowledge, skills, values and attitudes/behaviours) and teaching approaches (GCED/ESD as separate subjects, cross-curricular, integrated or whole school) (UNESCO-UIS, 2022[6]).

This is the first time these results have been available, so it is not yet possible to determine progress over time. Nevertheless, they set a baseline against which future comparisons can be made. In the meantime, reporting countries may reflect on their overall results and consider where they may need to make further efforts to fully mainstream GCED and ESD in their education systems – not just in primary and secondary education, as reflected in the global indicator, but across all levels and types of education. However, wide variations between components should be interpreted with caution, as the data are based on countries' self-reporting of GCED and ESD implementation in their education systems. There are also differences in the number and types of questions from which data have been drawn to compile the indicator, ranging from three questions for student assessment to five for curricula. Fewer and simpler questions make it more likely that component scores will be very high, while more and more complex question make it less likely.

Educational science studies (e.g. psychology of education, sociology of education) is mandatory for prospective teachers at all levels of education and types of subjects in about three-quarters of the countries and other participants, and mandatory at the discretion of individual institutions in less than one-quarter. It is not offered to prospective vocational secondary teachers or general upper secondary teachers in Mexico (Table D6.3).

In nearly all countries, the study of child/adolescent development, which helps to prepare teachers for various non-teaching activities (e.g. student counselling, communication with parents/guardians), is either mandatory for all prospective teachers or mandatory at the discretion of individual institutions. However, there is some variation across different levels of education. The subject is mandatory in nearly three-quarters of countries and other participants for all prospective pre-primary and primary teachers, but this falls below two-thirds for prospective lower and upper secondary (general subjects) teachers. The variation may be related to differences in the task requirements of teachers (see Indicator D4) (Table D6.3).

In contrast to studies that are closely related to teaching and pedagogy, research skills development is less often mandatory for prospective teachers. For prospective teachers at primary and secondary (general subjects) levels, for example, it is mandatory for all prospective teachers in nearly three-fifths of the countries and other participants, mandatory at the discretion of individual institutions in nearly one-third of the countries and other participants, offered on a voluntary basis in Japan and not offered in Denmark (as an independent course) and Mexico. Among the countries and other participants where it is mandatory, either for all prospective teachers or at the discretion of individual institutions, less than half of them require a dissertation on pedagogical issues based on students' own research (Table D6.3).

A teaching practicum provides initial teacher education students with a supervised/guided teaching experience where they can benefit from the instructional expertise of an experienced teacher. A teaching practicum is mandatory in order to teach at any given level of education in nearly all countries. The exceptions are Costa Rica (at all levels of education) and Greece (at the secondary level), where individual initial teacher education institutions decide whether a teaching practicum is mandatory, and Denmark (at upper secondary level) and Mexico (to teach vocational subjects at secondary levels, and general subjects at upper secondary level), where a practicum is not offered (Table D6.3).

In most countries where a teaching practicum is mandatory, its duration is the same for all prospective teachers at a given level of education (but can vary between levels of education). However, in Estonia, Greece (for prospective teachers at the pre-primary and primary levels) and the Slovak Republic, the duration of teaching practicum varies across initial teacher education institutions. In the Netherlands, the duration is at the discretion of the schools where student teachers perform teaching practicum. The length of the teaching practicum varies widely across countries. For example, for prospective teachers of general subjects at the lower secondary level, the teaching practicum ranges from 155 hours in Japan to 1 800 hours in Hungary, though the typical duration is less than 800 hours in three-quarters of the countries and other participants with data (Table D6.3).

As the teaching practicum is intended to allow student teachers to learn from an experienced teacher, mentor teachers take the main responsibility for supporting student teachers in all countries, except in Costa Rica where the support role is only filled by staff members of institutions in charge of the initial teacher education programme. Mentor teachers are engaged by a higher education institution in Ireland. Other people responsible for supporting student teachers during the practicum include staff from the teacher education institutions (in nearly 90% of the countries) and school management (in about 60% of the countries). In Italy, co-ordinating mentors oversee the organisation of school placements and liaise between mentor teachers and initial teacher education institutions (Table D6.3).

Although the mandatory content of initial teacher education programmes tends to be very similar within countries, the details of the curriculum may vary depending on the initial teacher education institutions providing them (see Box D6.2).

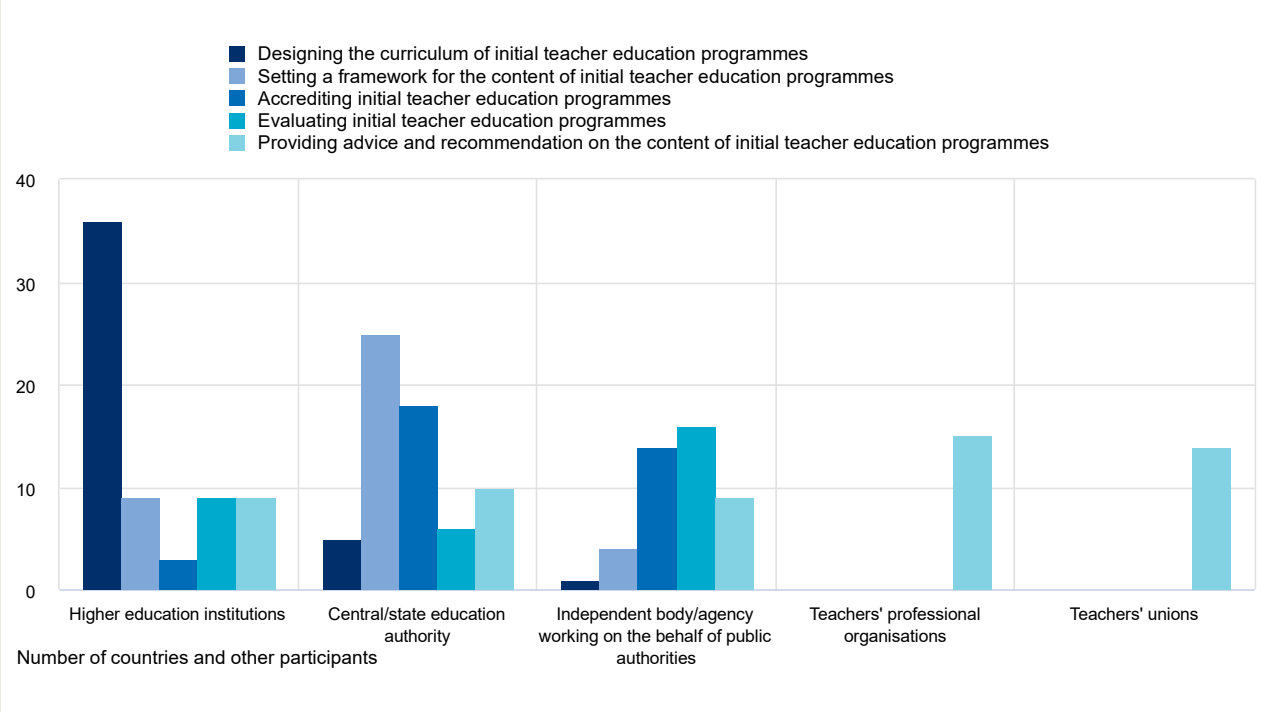
Box D6.2. Roles of entities and levels of government in deciding initial teacher education

Decisions about the content of initial teacher education – curriculum design, content frameworks, accreditation and evaluation of programmes, and advice and recommendation about content – are the responsibilities of various levels of government or institutions across countries. Among countries where data are available, the roles of various decision makers are very similar across levels of education and types of subjects. In about three-quarters of countries and other participants, one entity or level of government may have more than one role in deciding on the contents of initial teacher education (Table D6.5, available on line).

Higher education institutions play a large role in making decisions on initial teacher education. In most countries, these institutions typically provide initial teacher education and design the curriculum for it. The exceptions are Austria (at pre-primary level), the Czech Republic (at pre-primary level, when initial teacher education is provided in upper secondary schools), Luxembourg, Mexico (for vocational subjects at lower secondary level) and the Slovak Republic (at pre-primary level, when initial teacher education is provided in upper secondary schools). In less than half of countries and other participants, higher education institutions are also involved in setting content frameworks, accreditation, evaluation and/or providing advice and recommendation. For example, these refer to a self-feedback process in Greece, or an upward feedback to relevant stakeholders that could improve the frameworks and accreditation requirements of initial teacher education programmes in the Czech Republic (Figure D6.5).

Figure D6.5. Role of relevant bodies in deciding content of initial teacher education (2021)

For lower secondary teachers teaching general subjects in public institutions



Note: The Flemish and French Communities of Belgium, England (United Kingdom) and Scotland (United Kingdom) are included in the number of countries and other participants.
Source: OECD (2022), Table D6.5 (web only). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

StatLink https://stat.link/8bza91

Central/state government education authorities are involved in many decisions about the contents of initial teacher education programmes in nearly all countries and other participants except in England (United Kingdom) (for prospective

secondary teachers of vocational subjects), Mexico (for prospective lower secondary teachers of vocational subjects) and Scotland (United Kingdom). They have the main role in setting the frameworks for the contents of initial teacher education programmes in about two-thirds of countries and other participants where data are available, and provide accreditation to programmes in a little under half of them. This may help to harmonise curricula designed by individual higher education institutions, ensuring that all programmes across the country meet similar standards. In Brazil and Switzerland, where the education systems are decentralised, subnational level education authorities (at the regional and/or local/municipal level) are involved in setting the framework for the content of the programmes together with the central level education authorities (Table D6.5, available on line).

An independent body or agency working on behalf of the public authorities provides accreditation for or evaluates initial teacher education programmes in more than half of the countries and other participants with data. Their precise roles vary across countries, depending on their nature. In many countries, these independent bodies or agencies are specifically set up to perform accreditation and/or evaluation, such as the Quality Assurance Council in Austria or the National Agency for Quality Evaluation and Accreditation in Spain; to promote professional standards for teachers, such as the Teaching Council in Ireland and Scotland (United Kingdom); or to set policies for tertiary education programmes, such as the Council of Higher Education in Israel and Lithuania (Table D6.5, available on line).

Various actors provide advice and recommendations on the contents of initial teacher education programmes. In about half of the countries and other participants, teacher's professional organisations and/or teachers' unions are involved in providing advice and recommendations. These groups are consulted in many countries even where there may be no legal obligation to do so (e.g. the Czech Republic, Ireland, New Zealand, Poland and Sweden). Inspectorates provide advice and recommendations on the contents in five or fewer countries (Table D6.5, available on line).

Entry into teaching profession for graduates of initial teacher education

The requirements for entry into the teaching profession tend to be the same whatever the level of education or the type of subjects (general or vocational) the prospective teacher will teach. Graduates from initial teacher education programmes can immediately start teaching at the primary, lower secondary or upper secondary levels and acquire a full teaching qualification in about half of the 36 countries and other participants with available information. In the others, they need to meet additional requirements either before starting teaching or becoming fully qualified teachers. These include acquiring a credential or licence for teaching (in addition to the relevant academic qualifications), passing examinations and/or successfully completing an induction or probation period (Figure D6.1).

In about one-third of countries and other participants, graduates from initial teacher education programmes cannot start teaching until they fulfil some additional criteria. For example, candidates to teach general subjects at lower secondary level are selected on the basis of the results of competitive examinations in nine countries, need to acquire relevant credentials in five countries and must satisfy minimum performance requirements in a standardised test in four countries. Only one additional criterion is required to teach general subjects at lower secondary level in most of these countries where additional criteria exist, but more than one are required in Australia, Costa Rica, Greece, Italy, Japan and Türkiye (Table D6.6, available on line).

In almost half of the countries and other participants, new teachers must fulfil additional requirements to become fully qualified teachers, even if they are eligible to start teaching. For instance, new lower secondary teachers of general subjects need to acquire relevant credentials in Costa Rica, England (United Kingdom), New Zealand, Slovenia and Sweden; take an examination in Costa Rica, Hungary, Korea and Türkiye; or be selected through an open competitive process in Colombia. In one-third of the 36 countries and other participants, candidates must successfully complete a probation period before becoming a fully qualified lower secondary teacher of general subjects. The typical duration of the probation period ranges from 3 months in Costa Rica to 24 months in Greece, Hungary, Luxembourg and New Zealand. In England (United Kingdom), France, Greece, Hungary, Luxembourg, Spain and Türkiye, the probation period fully overlaps with the period of mandatory formal induction for new teachers (Table D6.6, available on line).

Formal induction for new teachers

Formal inductions help new teachers make a successful start to their teaching career. Apart from Costa Rica, Latvia and Switzerland, such programmes are mandatory (for all teachers or at the discretion of individual schools) in at least one level of education. These induction programmes last 12 months or less in 20 countries and other participants, but 24 months or

more in Hungary, Luxembourg, Mexico (at pre-primary, primary and general lower secondary levels), the Netherlands and New Zealand. Six countries and other participants either do not specify a duration, leaving induction programmes to be conducted at the discretion of individual schools (Australia, the Czech Republic, Denmark, and the Flemish and French Communities of Belgium) or do not define it at the national level (Colombia) (Table D6.6, available on line).

Formal induction often requires collaboration. Programmes are organised in collaboration between the school and the teacher education institution and/or ministry in nearly half of the countries and other participants where formal induction is mandatory (whether for all teachers or at the discretion of individual schools). More than one person and/or body is responsible for supporting new teachers during their formal induction in most countries which have it, except in Colombia where only mentor teachers support new teachers and in Korea where only local authorities support them (Table D6.6, available on line).

Almost four in ten countries and other participants with a mandatory formal induction programme require the individuals supporting new teachers to have formal training. In most countries, teachers can take on the responsibility as mentor teachers on a voluntary basis and/or at the request of their schools, and this additional responsibility often comes with a reduction in their teaching workload and/or financial compensation (see Indicators D3 and D4) (Table D6.6, available on line).

Legal employment status of new fully qualified teachers

In a large majority of countries, new teachers in public educational institutions become either public sector employees or civil servants (see *Definitions*) once they are fully qualified. For example, lower secondary teachers of general subjects are most commonly public sector employees (in 18 out of 36 countries and other participants), followed by civil servants (in 12 countries). In Brazil, no information on the status of new teachers is available, but 70% of all teachers in service are civil servants. In Luxembourg, most teachers are civil servants, but there are some with public sector employees status. New teachers in public educational institutions are subject to general employment legislation as for other workers only in Estonia, Latvia, the Netherlands and the Slovak Republic (Table D6.1).

In almost all countries, the employment status is the same for all new fully qualified teachers, whatever the level of education at which they teach. However, in Austria, Germany and New Zealand, new pre-primary teachers are general employees, while those in primary schools are public sector employees or civil servants. These subtle differences could result from different institutional arrangements between these levels (e.g. in New Zealand, pre-primary education is provided in early childhood education centres while primary and secondary education are provided in school settings) and/or differences in the level of qualification acquired through initial teacher education (Table D6.1).

The legal employment status is the same for secondary teachers of general and vocational subjects in all countries and other participants with data. In England (United Kingdom), all teachers of vocational subjects teach in government-dependent private institutions, and thus are not public sector employees, unlike teachers of general subjects in public institutions (Table D6.1).

Alternative pathways into the teaching profession

Many countries offer pathways into the teaching profession for individuals with professional experience outside teaching and without teaching qualifications. These pathways diversify the teaching workforce and could help mitigate immediate teacher shortages. Prospective teachers taking these alternative routes (referred to as side-entrants) may start teaching immediately without any additional requirements, or be required to take relevant teacher training in various formats (e.g. training in typical teacher education institutions or school-based training) before and/or while teaching.

In many countries and other participants, the existence and types of alternative pathways vary between levels of education, possibly reflecting varying degrees of teacher shortages. For example, Luxembourg only provides alternative pathways for primary teachers, due to a shortage of primary teachers in the school year 2020/21. Alternative pathways are slightly more common for teachers of vocational subjects than for general subjects: at upper secondary level, more types of pathways are available for teachers of vocational subjects than their counterparts teaching general subjects in five countries and other participants (Table D6.7, available on line).

There are alternative pathways to teaching for prospective lower secondary teachers of general subjects in more than half of the countries and other participants with available information (20 out of 36). Usually, there are just one or two alternative routes for side-entrant teachers per country, but in the Netherlands and the Slovak Republic there are four or more (Table D6.7, available on line).

Side-entrant teachers of general subjects at lower secondary level can start teaching with no requirement to complete training in 8 out of the 20 countries and other participants offering such routes. However, this pathway is limited to applicants meeting specific conditions (e.g. in Poland, for side-entrant teachers who will acquire a teaching qualification within a year) or for exceptional circumstances such as a lack of teachers in some areas or subjects (e.g. in Austria and the French Community of Belgium) (Table D6.7, available on line).

Training in typical teacher education institutions (e.g. providers of initial teacher education) is the most common form of training required for side-entrant teachers of general subjects at lower secondary level (in about four in five countries). About one-third of the countries provide other types of training that are mostly school-based, in other types of institutions (e.g. the "Choose to Teach" programme in Lithuania) and/or via distance learning (Table D6.7, available on line).

These alternative forms of training allow some flexibility as they can be attended on a part- or full-time basis and taken before and/or after starting teaching. Training is available on a full-time basis in three-fifths of the countries and on a part-time basis in a similar number of countries, lasting for between 12 and 60 full-time equivalent months (for countries for which the duration of the training can be reported). In nearly all countries with some information on training requirements, side-entrant teachers of general subjects at lower secondary level can choose to take training either before they start teaching or while they are working as teachers. Only Germany and New Zealand (for full-time training programmes) require side-entrants to take the training before starting their teaching activities. Side-entrants who have taken relevant training become fully qualified everywhere except in New Zealand, where they need to also successfully complete induction before they are awarded a full practising certificate, which is the same as for new teachers who completed typical initial teacher education programmes (Table D6.7, available on line).

Side-entrant teachers of general subjects at lower secondary level are paid according to the same salary scale as other teachers in most countries, except in Austria and the French Community of Belgium where side-entrant teachers who started teaching without training have different compensation. Although these side-entrants may bring some diversity into the teacher population, their past work experience is not likely to be taken into account in their starting salary: it is not considered when setting their starting salary in six countries and only considered at the discretion of the school or education authorities in another six countries and other participants. Prior experiences has some impact on starting salaries in Austria, where up to 10 years of work experience is considered; the French Community of Belgium, where public sector experience is considered; and the Slovak Republic, where experience in the subject taught is considered (Table D6.7, available on line).

Pathways to becoming a school head

Eligibility requirements for school heads

Becoming a school head can be a career development option for teachers wishing to take on leadership responsibilities, and the chance to benefit from higher salaries (see Indicator D3). Among the 36 countries and other participants with information on pathways to becoming teachers, most could also provide information on pathways to becoming a school head. The exception is Brazil where the relevant regulations are established by subnational education networks, so no information is available at the national level.

In more than four-fifths of these countries and other participants, teachers can apply for positions as heads of schools covering only lower secondary general programmes if they are fully qualified. Among others, candidates in Lithuania and Norway are not required to be fully qualified teachers, and in Denmark, Estonia, the Netherlands and Sweden, eligibility conditions to apply to these positions is not strictly limited to teachers (Table D6.4).

In four-fifths of the countries and other participants with data, teachers need to satisfy at least one selective criterion to apply for a school head position in schools covering only lower secondary general programmes. Teaching experience is the most common requirement, applied in three-quarters of the countries and other participants with at least one selective criterion (see Box D6.3 for more details). Other requirements are used in three to ten countries and other participants: professional development courses that do not give credentials upon completion, eligibility based on the results of competitive examinations, interviews, meeting minimum standards in a standardised test, credentials from professional development courses, additional academic experience, and one or two years of leadership experience. In Poland, the Slovak Republic and Slovenia, only teachers with senior teacher categories/positions are eligible to apply (Table D6.4).

Box D6.3. Years of teaching experience of school heads

School heads not only perform management and leadership duties, but can also be responsible for tasks related to students' learning (see Indicator D4). It is also important that they understand the work of teachers to better manage their schools and staff. Therefore, candidates for a school head position would benefit from having teaching experience.

Among 21 countries and other participants requiring a specific number of years of teaching experience to apply for a school head position in schools covering only lower secondary general programmes, the minimum requirement ranges from two years of experience in Mexico and Türkiye, to eight years in Greece in 2021 (Table D6.4). In practice, lower secondary school heads have much more teaching experience, with an average of 20 years across 30 OECD countries and other participants in 2018 (OECD, 2019[7]). However, some of these years of experience may have been gained after they had become school heads, because some or all school heads are required to teach a number of hours in less than one-third of the OECD countries and other participants (see Indicator D4). Among countries where teaching is voluntary or not required of school heads, the average number of years of actual teaching experience ranges from 13 years in Sweden to 29 years in Japan and Latvia (OECD, 2019[7]).

The difference between the minimum teaching experience required to apply for a school head position and the average years of actual teaching experience ranges from 10 years in Colombia (where at least 6 years of teaching experience is required) to 29 years in Latvia (where no teaching experience is required). Therefore, even where no or very little teaching experience is required, candidates have usually taught for at least 10 years before moving to the main leadership position of a school (Table D6.4). This could explain why the average age of school heads (52 years) is older than that of teachers (44 years) across the OECD countries and other participants (OECD, 2019[7]).

School head positions might also appeal to those who are not teachers, but have leadership ambitions or higher earnings expectations, as salaries for school heads are higher than the average for tertiary-educated workers (see Indicator D3). However, about one-third of countries and other participants with data available allow school heads to be recruited from outside the teaching profession. Even in countries offering this pathway, it has not usually been used by the majority of the current population of school heads (see Annex 3 for more information). The eligibility requirements for non-teachers applying for a school head position include a higher level of academic qualification than fully qualified teachers (e.g. in Lithuania and the French Community of Belgium), some leadership experience (e.g. in Estonia, Lithuania, Poland and Switzerland), success in a competitive examination (e.g. in France) or a minimum level of experience in the teaching or education sector (e.g. in Korea and Sweden). There is no specific or additional eligibility requirements for non-teachers to become a school head in Denmark (for schools covering primary and lower secondary general programmes only), England (United Kingdom) and Mexico (for schools covering only vocational programmes). In Denmark, the position of school head covering primary and lower secondary general programmes only is statutorily open to anyone who is interested and eligibility is not restricted by minimum requirements, although in practice, the applicants to these positions are qualified teachers (Table D6.4).

As with teachers who enter the teaching profession through alternative pathways, the starting salaries of school heads do not often reflect any work experience acquired outside education. For heads of schools covering only lower secondary general programmes, for example, any work experience outside the sector does not affect starting salaries in four countries, and may have an impact at the discretion of the school or education authorities in three countries and other participants. Only in France and Korea (where all years of work experience outside education are recognised), and in the French Community of Belgium (where only experience in the public sector is considered) is work experience outside education taken into account (Table D6.4).

Selection of eligible candidates

Eligible candidates for a school head position go through a selection process in most countries and other participants with data, except Denmark (for pre-primary schools), England (United Kingdom) (for schools covering only vocational programmes), Italy and Luxembourg. In Italy, all eligible candidates who pass a competitive examination are registered in a roster, and then assigned to vacancies (Table D6.8, available on line).

At the lower secondary level (general programmes only), 30 countries and other participants have a selection process for school heads. The national level (or central level) education authorities provide a specific list of criteria for a standardised competitive process and/or a framework-based competitive process in about nearly two-thirds. In 13 countries and other

participants, the selection process is at the discretion of local educational authorities, while in 8 it involves elections among the members of the school community (Table D6.8, available on line).

At this level, among the 19 countries where the national/central education authorities provide some guidelines on the selection process for school heads (whether standardised or based on a framework), nearly all of them assess more than one element in the selection process. The elements assessed in at least two-thirds of these countries are: pedagogical knowledge, academic qualifications, teaching experience, record of professional training in pedagogy, a presentation of a school development plan, experience in management/leadership, leadership skills, and record of professional training in management/leadership (Table D6.8, available on line).

In more than three-fifths of the countries with a standardised and/or framework-based selection process, multiple authorities and groups participate in the selection process. The most common levels of authority involved are local educational authorities (in 15 countries), followed by parents/guardians of the students in the school, teachers at the school, local networks of school heads, and central or national education authorities. In a few cases, the school's students (in Austria, Lithuania and Spain), non-teaching personnel (in France, the Slovak Republic and Spain) and teachers' organisations (in Israel and Poland) can also be involved in the selection process (Table D6.8, available on line).

There are hardly any differences in the school head selection process in schools at different levels of education or offering vocational programmes, compared to schools covering lower secondary general programmes only. Exceptions are England (United Kingdom) (schools covering only vocational programmes), Hungary (schools with vocational programmes), Israel (upper secondary schools), the Slovak Republic (upper secondary schools) and Slovenia (upper secondary schools) (Table D6.8, available on line).

Definitions

Alternative pathways are mechanisms that grant entry into teaching for individuals with professional experience gained outside education and who do not hold full teaching qualifications. Individuals entering the teaching profession by alternative pathways are referred to as side-entrants.

Competitive examination refers to an examination organised by local, regional or national authorities in order to select applicants with the best results for a limited and fixed number of places for student teachers and/or for teachers for the public education system.

Concurrent model is an organisation of initial teacher education in which pedagogical and practical training are provided at the same time as courses in the academic subject matter to be taught.

Consecutive model is an organisation of initial teacher education in which pedagogical and practical training follow courses in (academic) subject matter. Under this model, students first obtain a degree or qualification in one or more subject areas then study the theory and practice of education as an additional academic degree or qualification programme.

Credential or licence refers to a certification, licence or similar document granted by a government agency or institution that attests that a teacher is qualified and meets the standard to teach in the public education system. The requirements for a credential or licence exceed the education diploma.

Formal induction is defined as a range of structured and repeated activities to support new teachers' introduction into the teaching profession. It includes mentoring by experienced teachers, peer work with other new teachers, etc. Induction should be distinguished from a teaching practicum, which is part of initial teacher education.

Initial teacher education refers to the formal education and practical training that individuals must complete to obtain the diploma or degree required to become a public school teacher (excluding alternative pathways). Initial teacher education refers to both the study in particular field(s) of study and pedagogical and practical training, even when they are organised in consecutive stages.

Legal employment status for teachers could be: a **civil servant**, a **public sector employee** (an employee subject to specific legislation for public sector employees without being a civil servant) or a **general employee** (subject to the same general employment legislation as workers in the private sector).

Numerus clausus policies limit the number of student places for entry into initial teacher education and/or to progress to the next stage of the consecutive model of initial teacher education programmes.

Standardised test refers to a test organised by local, regional or national authorities in order to select applicants who meet the minimum performance requirements to become student teachers and/or teachers for the public education system.

Probation period refers to the employment status of starting teachers who get tenure on condition of satisfactory performance during a certain period. This mandatory work experience is required to be a licensed teacher in some countries.

Teaching practicum provides students (prospective teachers) with a supervised/guided teaching experience during their initial teacher education where they can benefit from the instructional expertise of an experienced teacher.

Coverage

Thirty-six OECD and partner countries and other participants contributed to the 2021 OECD-INES-NESLI survey on pathways to becoming teachers and school heads used to develop this indicator: Australia, Austria, Brazil, Colombia, Costa Rica, the Czech Republic, Denmark, England (United Kingdom), Estonia, Finland, France, the Flemish and French Communities of Belgium, Germany, Greece, Hungary, Ireland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Scotland (United Kingdom), the Slovak Republic, Slovenia, Spain, Sweden, Switzerland and Türkiye.

Methodology

See Annex 3 for country-specific notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

Source

Data are from the 2021 OECD-INES-NESLI survey on pathways to becoming teachers and school heads and refer to the school year 2020/21.

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Indicator D6 Tables

Tables Indicator D6. What are the pathways to becoming a teacher and a school head?

Table D6.1	Pathways to becoming a teacher (2021)
Table D6.2	Requirements for entering and progressing in initial teacher education (2021)
Table D6.3	Content of initial teacher education (2021)
Table D6.4	Pathways to becoming a school head (2021)
WEB Table D6.5	*Roles of entities and levels of government in deciding initial teacher education (2021)*
WEB Table D6.6	*Entry into the teaching profession (2021)*
WEB Table D6.7	*Alternative pathways into the teaching profession (2021)*
WEB Table D6.8	*Selection process for school heads (2021)*

StatLink https://stat.link/x4q5nb

Cut-off date for the data: 17 June 2022. Any updates on data can be found on line at http://dx.doi.org/10.1787/eag-data-en.

Table D6.1. Pathways to becoming a teacher (2021)

For lower secondary teachers (general subjects) in public institutions

		Initial teacher education						Beyond initial teacher education				
		Duration and model			Qualification level	Selectiveness						
		Total duration of initial teacher education, in years	For consecutive model, total duration of the pedagogical and practical training, in years	Predominant organisation of initial teacher education (concurrent or consecutive model)	ISCED qualification awarded at the end of initial teacher education	Existence of selective criteria for entry into initial teacher education	Existence of selective criteria to progress in initial teacher education	Graduates from initial teacher education can start teaching directly	New teachers become fully qualified directly	Requirements for schools to offer formal induction programme for new teachers	Most prevalent legal employment status of new fully qualified teachers	Existence of alternative pathways into the teaching profession
		(1)	(2)	(3)	(4)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
OECD	**Countries**											
	Australia	4	a	Both	ISCED 6	Yes	No	No	No	At the discretion of schools	Public sector employee	Yes
	Austria	6	a	Concurrent	ISCED 7	Yes	No	Yes	No	Mandatory	Public sector employee	Yes
	Canada	m	m	m	m	m	m	m	m	m	m	m
	Chile	m	m	m	m	m	m	m	m	m	m	m
	Colombia	5	a	Concurrent	ISCED 6	No	a	Yes	No	Mandatory	Public sector employee	Yes
	Costa Rica	3	1	Consecutive	ISCED 7	No	No	No	No	a	Civil servant	No
	Czech Republic	5	1	Both	ISCED 7	Yes	m	Yes	Yes	At the discretion of schools	Public sector employee	Yes
	Denmark	4	a	Concurrent	ISCED 6	Yes	a	Yes	Yes	At the discretion of schools	Public sector employee	Yes
	Estonia [1]	5	2	Consecutive	ISCED 7	Yes	Yes	Yes	Yes	At the discretion of schools	General employee	No
	Finland	5	a	Concurrent	ISCED 7	Yes	a	Yes	Yes	At the discretion of schools	Public sector employee	Yes
	France	5	2	Consecutive	ISCED 7	No	No	No	No	Mandatory	Civil servant	Yes
	Germany	6.5	1.5	Consecutive	ISCED 7	No	Yes	Yes	Yes	m	Civil servant	Yes
	Greece	4	1	Both	ISCED 6	Yes	Yes	No	No	Mandatory	Civil servant	No
	Hungary	5	1	Consecutive	ISCED 7	Yes	a	Yes	No	Mandatory	Civil servant	No
	Iceland	m	m	m	m	m	m	m	m	m	m	m
	Ireland	6	2	Consecutive	ISCED 7	Yes	Yes	Yes	Yes	Mandatory	Public sector employee	No
	Israel	4	2	Both	ISCED 6	Yes	Yes	Yes	No	Mandatory	Civil servant	No
	Italy	6	3	Consecutive	ISCED 7	No	Yes	No	No	Mandatory	Public sector employee	No
	Japan	2, 4, 6	a	Concurrent	ISCED 5, 6, 7	Yes	a	No	Yes	Mandatory	Civil servant	Yes
	Korea	4	a	Concurrent	ISCED 6	Yes	a	Yes	No	Mandatory	Civil servant	No
	Latvia	4	a	Concurrent	ISCED 6	No	a	Yes	Yes	Not offered	General employee	No
	Lithuania	4	1	Both	ISCED 6	Yes	Yes	Yes	Yes	At the discretion of schools	Public sector employee	Yes
	Luxembourg	5	m	Both	ISCED 7	Yes	m	No	No	Mandatory	Multiple	No
	Mexico	4	0.5	Both	ISCED 6	No	No	No	Yes	Mandatory	Civil servant	No
	Netherlands	4	a	Concurrent	ISCED 6	No	a	Yes	Yes	At the discretion of schools	General employee	Yes
	New Zealand [2]	3-4	1	Both	ISCED 6	Yes	No	No	No	Mandatory	Public sector employee	Yes
	Norway	5	a	Concurrent	ISCED 7	Yes	a	Yes	Yes	At the discretion of schools	Public sector employee	Yes
	Poland	5	a	Concurrent	ISCED 7	No	No	Yes	Yes	Mandatory	Public sector employee	Yes
	Portugal	m	m	m	m	m	m	m	m	m	m	m
	Slovak Republic	5	a	Concurrent	ISCED 7	Yes	a	Yes	Yes	Mandatory	General employee	Yes
	Slovenia	5	1	Both	ISCED 7	Yes	No	Yes	No	At the discretion of schools	Civil servant	No
	Spain	5	1	Consecutive	ISCED 7	Yes	Yes	No	No	Mandatory	Civil servant	No
	Sweden	4.5	a	Concurrent	ISCED 7	Yes	a	Yes	No	Mandatory	Civil servant	Yes
	Switzerland	5	1.5	Both	ISCED 7	No	No	Yes	Yes	Not offered	Public sector employee	Yes
	Türkiye	4	1	Both	ISCED 6	Yes	Yes	No	No	Mandatory	Public sector employee	No
	United States	m	m	m	m	m	m	m	m	m	m	m
	Other participants											
	Flemish Comm. (Belgium)	3	1	Both	ISCED 6	No	a	Yes	Yes	At the discretion of schools	Public sector employee	No
	French Comm. (Belgium)	3	a	Concurrent	ISCED 6	No	a	Yes	Yes	At the discretion of schools	Public sector employee	Yes
	England (UK)	4	1	Consecutive	ISCED 6	Yes	No	Yes	No	Mandatory	Public sector employee	Yes
	Scotland (UK)	4	1	Both	ISCED 6, 7	Yes	Yes	Yes	Yes	Mandatory	Public sector employee	No
Partner	Brazil [3]	4	a	Concurrent	ISCED 6	Yes	a	No	No	m	m	Yes

Note: Details of selective criteria (Columns 7 and 8) are available in Table D6.2. Data on teachers of pre-primary, primary, lower secondary (vocational subjects) and upper secondary (general or vocational subjects) levels and the percentage of new teachers and all current teachers with the relevant qualification in Column 3 (Columns 5 and 6) are available for consultation on line (see *StatLink* below). For definitions of the concurrent/consecutive models (Column 3) and types of legal employment status (Column 12), see *Definitions* and *Methodology* sections.

1. To solve the shortage of subject teachers, initial teacher education has been reduced temporarily to a concurrent two-year long master's degree programme in accordance with the teacher education framework.
2. The criteria for the first two years of lower secondary education (general programmes) follow those for primary education and those for the last two years of lower secondary education (general programmes) follow those of upper secondary education (general programmes).
3. Year of reference 2020.

Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/c2x6wp

Table D6.2. Requirements for entering and progressing in initial teacher education (2021)

For lower secondary teachers (general subjects) in public institutions

		Entry into initial teacher education								Progression to a later stage of initial teacher education							
					Types of selective criteria							Types of selective criteria					
		Minimum ISCED qualification for entry into initial teacher education	Limited number of student places for entry into initial teacher education (numerus clausus)	Existence of selective criteria	Competitive examination	Standardised test	Grade point average from secondary school or upper secondary examinations	Interview	Other	Limited number of student places for progression to a later stage of initial teacher education (numerus clausus)	Existence of selective criteria	Competitive examination	Standardised test	Grade point average from the first stage of initial teacher education	Interview	Other
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
OECD	**Countries**															
	Australia	ISCED 3	No	Yes	No	No	Yes	No	Yes	No	No	a	a	a	a	a
	Austria	ISCED 3	No	Yes	Yes	Yes	No	Autonomy	Yes	No	No	a	a	a	a	a
	Canada	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Chile	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Colombia	ISCED 3	No	No	a	a	a	a	a	a	a	a	a	a	a	a
	Costa Rica	ISCED 5	No	No	a	a	a	a	a	No	No	a	a	a	a	a
	Czech Republic	ISCED 3	No	Yes	Autonomy	Autonomy	Autonomy	Autonomy	Autonomy	No	m	m	m	m	m	m
	Denmark	ISCED 3	Yes	Yes	No	No	Yes	Yes	No	a	a	a	a	a	a	a
	Estonia	ISCED 3	No	Yes	Yes	No	No	Yes	Autonomy	No	Yes	Yes	Yes	No	Yes	Yes
	Finland	ISCED 3	Yes	Yes	Yes	No	Yes	Autonomy	Yes	a	a	a	a	a	a	a
	France	ISCED 3	No	No	a	a	a	a	a	No	No	a	a	a	a	a
	Germany	ISCED 3	m	No	a	a	a	a	a	Yes	Yes	No	Yes	No	No	a
	Greece	ISCED 3	Yes	Yes	Yes	No	Yes	No	No	Yes	Yes	No	No	Yes	No	Yes
	Hungary	ISCED 3	No	Yes	No	No	Yes	No	No	a	a	a	a	a	a	a
	Iceland	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Ireland	ISCED 3	Yes	Yes	No	No	Yes	Autonomy	Yes	Yes	Yes	No	No	No	Autonomy	a
	Israel	ISCED 3	No	Yes	Yes	Yes	Yes	Yes	Autonomy	Yes	Yes	No	No	Yes	Yes	a
	Italy	ISCED 3	Yes	No	a	a	a	a	a	Yes	Yes	m	m	m	m	m
	Japan	ISCED 3	Yes	Yes	Yes	Autonomy	Autonomy	Autonomy	Autonomy	a	a	a	a	a	a	a
	Korea	ISCED 3	Yes	Yes	Autonomy	Autonomy	Autonomy	Autonomy	Autonomy	a	a	a	a	a	a	a
	Latvia	ISCED 3	No	No	a	a	a	a	a	a	a	a	a	a	a	a
	Lithuania	ISCED 3	Yes	Yes	Autonomy	No	Yes	Yes	No	Yes	Yes	No	No	Yes	No	a
	Luxembourg	ISCED 3	a	Yes	Autonomy	Autonomy	Autonomy	Autonomy	Autonomy	m	m	m	m	m	m	m
	Mexico	ISCED 3	No	No	a	a	a	a	a	Yes	No	a	a	a	a	a
	Netherlands	ISCED 3	No	No	a	a	a	a	a	a	a	a	a	a	a	a
	New Zealand [1]	ISCED 3	No	Yes	Autonomy	Autonomy	Autonomy	Yes	Yes	No	No	a	a	a	a	a
	Norway	ISCED 3	Yes	Yes	No	No	Yes	No	Yes	a	a	a	a	a	a	a
	Poland	ISCED 3	No	No	a	a	a	a	a	No	No	a	a	a	a	a
	Portugal	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Slovak Republic	ISCED 3	No	Yes	No	Autonomy	Autonomy	No	No	a	a	a	a	a	a	a
	Slovenia	ISCED 3	Yes	Yes	No	No	Yes	No	No	Yes	No	a	a	a	a	a
	Spain	ISCED 3	No	Yes	Yes	No	Yes	No	No	Yes	Yes	No	No	No	No	Yes
	Sweden	ISCED 3	Yes	Yes	No	No	Yes	No	Yes	a	a	a	a	a	a	a
	Switzerland	ISCED 3	No	No	a	a	a	a	a	No	No	a	a	a	a	a
	Türkiye	ISCED 3	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	United States	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Other participants															
	Flemish Comm. (Belgium)	ISCED 3	No	No	a	a	a	a	a	a	a	a	a	a	a	a
	French Comm. (Belgium)	ISCED 3	No	No	a	a	a	a	a	a	a	a	a	a	a	a
	England (UK)	ISCED 3	No	Yes	No	No	Yes	No	Autonomy	No	No	a	a	a	a	a
	Scotland (UK)	ISCED 3	Yes	Yes	No	No	No	Yes	Autonomy	Yes	Yes	No	No	No	Yes	Autonomy
Partner	**Brazil** [2]	ISCED 3	No	Yes	Yes	Autonomy	Autonomy	Autonomy	Autonomy	a	a	a	a	a	a	a

Note: "Autonomy" indicates that specified criteria are applied at the discretion of individual initial teacher education institutions. Data on teachers of pre-primary, primary, lower secondary (vocational subjects) and upper secondary (general or vocational subjects) levels and details of other selective criteria (Columns 9 and 17) are available for consultation on line (see *StatLink* below). See *Definitions* and *Methodology* sections for more information.

1. The criteria for the first two years of lower secondary education (general programmes) follow those for primary education and those for the last two years of lower secondary education (general programmes) follow those of upper secondary education (general programmes).

2. Year of reference 2020.

Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/ntyvlj

Table D6.3. Content of initial teacher education (2021)

For lower secondary teachers (general subjects) in public institutions

		Academic subject/ subject matter studies		Pedagogical studies/ didactics	Educational science studies	Child/adolescent development studies	Research skills development
		Required as part of initial teacher education for students	Minimum number of subjects to be studied	Required as part of initial teacher education for students			
		(1)	(2)	(4)	(5)	(6)	(7)
OECD	**Countries**						
	Australia [1]	Yes	a	Yes	Yes	Yes	By institutions
	Austria [2]	Yes	2	Yes	Yes	Yes	Yes
	Canada	m	m	m	m	m	m
	Chile	m	m	m	m	m	m
	Colombia	Yes	a	Yes	By institutions	By institutions	Yes
	Costa Rica	By institutions	m	By institutions	By institutions	By institutions	By institutions
	Czech Republic	Yes	1	Yes	Yes	Yes	Yes
	Denmark	Yes	2	Yes	Yes	Yes	No, not offered
	Estonia	Yes	m	Yes	Yes	Yes	Yes
	Finland	Yes	3	Yes	Yes	By institutions	Yes
	France [2]	Yes / No, voluntary	a	Yes	By institutions	By institutions	Yes
	Germany	Yes	2	Yes	Yes	Yes	By institutions
	Greece	Yes	1	Yes	Yes	By institutions	By institutions
	Hungary	Yes	m	Yes	Yes	Yes	Yes
	Iceland	m	m	m	m	m	m
	Ireland [1]	Yes	1	Yes	Yes	By institutions	Yes
	Israel	Yes	3	Yes	Yes	Yes	Yes
	Italy	Yes	m	Yes	Yes	By institutions	By institutions
	Japan	Yes	m	Yes	Yes	Yes	No, voluntary
	Korea	Yes	1	Yes	Yes	Yes	Yes
	Latvia [1]	Yes	m	Yes	Yes	Yes	Yes
	Lithuania [1]	Yes	m	Yes	Yes	Yes	Yes
	Luxembourg	Yes	m	By institutions	By institutions	By institutions	By institutions
	Mexico	Yes	m	Yes	Yes	Yes	No, not offered
	Netherlands	By institutions	m	By institutions	By institutions	By institutions	By institutions
	New Zealand [1, 3]	Yes	a	Yes	By institutions	Yes	Yes
	Norway [1]	Yes	2	Yes	Yes	Yes	Yes
	Poland [1]	Yes	1	Yes	Yes	Yes	Yes
	Portugal	m	m	m	m	m	m
	Slovak Republic	Yes	3	Yes	Yes	Yes	By institutions
	Slovenia [1]	Yes	m	Yes	Yes	Yes	Yes
	Spain [1, 2]	Yes	a	Yes	Yes	Yes	Yes
	Sweden	Yes	2	Yes	Yes	Yes	Yes
	Switzerland	Yes	1	Yes	Yes	Yes	Yes
	Türkiye [2]	Yes	m	Yes	Yes	Yes	Yes
	United States	m	m	m	m	m	m
	Other participants						
	Flemish Comm. (Belgium) [2]	Yes	2	Yes	By institutions	By institutions	By institutions
	French Comm. (Belgium)	Yes	m	Yes	Yes	Yes	Yes
	England (UK) [1]	Yes	1	Yes	By institutions	By institutions	By institutions
	Scotland (UK)	Yes	1	Yes	Yes	Yes	By institutions
Partner	**Brazil** [4]	Yes	1	Yes	Yes	No, voluntary	By institutions

		Common courses for all prospective teachers, irrespective of the level of education they will teach	Teaching practicum							
			Required as part of initial teacher education for students	Typical total duration in hours (other information in parentheses: days, weeks or European Credit Transfer System [ECTS])	Main responsibility for supporting student teachers					
					Mentor teachers from the school	School management (school head, department heads)	Inspectorate	Staff from teacher education institution	Local education authority	Other
		(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
OECD	**Countries**									
	Australia [1]	No	Yes	(80 days)	Yes	Yes	a	Yes	No	m
	Austria [2]	No	Yes	(40 ECTS)	Yes	No	No	Yes	No	a
	Canada	m	m	m	m	m	m	m	m	m
	Chile	m	m	m	m	m	m	m	m	m
	Colombia	Yes	Yes	a	Yes	Yes	a	Yes	No	a
	Costa Rica	Yes	By institutions	m	No	No	No	Yes	No	a
	Czech Republic	Yes	Yes	720-900	Yes	No	No	No	No	a
	Denmark	No	Yes	(30 ECTS)	Yes	Yes	No	Yes	No	a
	Estonia	Yes	Yes	m	Yes	Yes	a	Yes	No	a
	Finland	m	Yes	540	Yes	m	a	Yes	m	m
	France [2]	Yes	Yes	324 (18 weeks)	Yes	No	No	Yes	No	a
	Germany	No	Yes	(12-32 weeks)	Yes	Yes	No	Yes	No	a
	Greece	No	By institutions	m	Yes	No	No	Yes	No	a
	Hungary	No	Yes	1800 (1 year)	Yes	Yes	a	Yes	No	a
	Iceland	m	m	m	m	m	m	m	m	m
	Ireland [1]	Yes	Yes	(24 weeks)	Yes	Yes	No	Yes	a	a
	Israel	Yes	Yes	176-352	Yes	Yes	Yes	Yes	Yes	a
	Italy	Yes	Yes	1500 (60 ECTS)	Yes	Yes	No	Yes	No	Yes (Coordinating mentors)
	Japan	Yes	Yes	155 (4 weeks)	Yes	Yes	a	No	No	a
	Korea	Yes	Yes	220	Yes	Yes	a	Yes	No	a
	Latvia [1]	Yes	Yes	800	Yes	Yes	No	Yes	No	m
	Lithuania [1]	Yes	Yes	469 (30 ECTS)	Yes	Yes	a	Yes	No	a
	Luxembourg	No	By institutions	m	Yes	Yes	a	Yes	a	a
	Mexico	No	Yes	246 (6 hours per week over 1 year)	Yes	Yes	Yes	Yes	Yes	a
	Netherlands	No	Yes	m	Yes	m	No	Yes	No	a
	New Zealand [1, 3]	Yes	Yes	(80-120 days)	Yes	Yes	No	Yes	a	a
	Norway [1]	No	Yes	(110 days)	Yes	No	No	Yes	No	a
	Poland [1]	Yes	Yes	150	Yes	Yes	No	No	No	a
	Portugal	m	m	m	m	m	m	m	m	m
	Slovak Republic	No	Yes	m	Yes	Yes	No	No	No	a
	Slovenia [1]	No	Yes	450 (15 ECTS)	Yes	Yes	No	Yes	No	a
	Spain [1, 2]	No	Yes	400 (16 ECTS)	Yes	No	No	Yes	No	a
	Sweden	Yes	Yes	(20 weeks)	Yes	No	No	Yes	No	a
	Switzerland	Yes	Yes	1440	Yes	No	No	Yes	No	m
	Türkiye [2]	Yes	Yes	224 (8 hours over 28 weeks)	Yes	Yes	No	Yes	Yes	a
	United States	m	m	m	m	m	m	m	m	m
	Other participants									
	Flemish Comm. (Belgium) [2]	Yes	Yes	1125-1350 (45 ECTS)	Yes	Yes	No	Yes	No	a
	French Comm. (Belgium)	No	Yes	480	Yes	No	No	Yes	No	a
	England (UK) [1]	No	Yes	360-480 (15 hours per week over 24-32 weeks)	Yes	No	No	Yes	No	a
	Scotland (UK)	Yes	Yes	1000 (30 weeks or 18 weeks)	Yes	Yes	No	Yes	No	a
Partner	Brazil [4]	Yes	Yes	800	Yes	No	a	Yes	No	m

Legend for columns on required content of initial teacher education for students:
Yes: Mandatory for students to take
By institutions: Mandatory for students, at the discretion of individual institutions
No, voluntary: Voluntary for students at their own discretion
No, not offered: Not offered for students

Note: Data on teachers of pre-primary, primary, lower secondary (vocational subjects) and upper secondary (general or vocational subjects) levels; data on the existence of academic subject studies specific to prospective teachers and requirement for a dissertation based on students' own research (Columns 3 and 8) are available for consultation on line (see *StatLink* below). See *Definitions* and *Methodology* sections for more information.
1. Total duration of the teaching practicum refers to minimum duration instead of typical duration.
2. Duration of the teaching practicum includes time spent on pedagogical practice courses or other activities related to teaching practicum.
3. The criteria for the first two years of lower secondary education (general programmes) follow those for primary education and those for the last two years of lower secondary education (general programmes) follow those of upper secondary education (general programmes).
4. Year of reference 2020.
Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/7a5yzj

Table D6.4. Pathways to becoming a school head (2021)

For lower secondary schools heads (general programmes) in public institutions

		Pathways for teachers											Pathways for non-teachers
				Types of selective criteria to apply for a school head position									
		Requirement to be a fully qualified teacher	Existence of selective criteria	Number of years of teaching experience	Number of years of leadership experience	Additional academic qualification	Competitive examination	Standardised test or examination	Interview	Professional development courses (without credentials)	Professional development courses (with credentials)	Other	Existence of pathways for non-teachers
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
OECD	**Countries**												
	Australia	Yes	Yes	m	m	No	No	No	No	m	m	m	No
	Austria	Yes	Yes	5	0	No	Yes	Yes	Yes	Yes	Yes	No	No
	Canada	m	m	m	m	m	m	m	m	m	m	m	m
	Chile	m	m	m	m	m	m	m	m	m	m	m	m
	Colombia	Yes	Yes	6	0	No	Yes	No	Yes	No	No	No	No
	Costa Rica	Yes	Yes	3	2	Yes	Yes	Yes	Yes	Yes	Yes	Yes (Higher scores in the selection bases)	No
	Czech Republic	Yes	Yes	4	0	No	No	No	No	No	Yes	No	No
	Denmark	No	No	a	a	a	a	a	a	a	a	a	Yes
	Estonia	No	No	a	a	a	a	a	a	a	a	a	Yes
	Finland	Yes	Yes	m	m	No	No	No	No	No	No	Yes (Excellent command of the language of instruction of the educational institution)	No
	France	Yes	Yes	4	0	No	Yes	No	No	No	No	No	Yes
	Germany	Yes	Yes	m	m	No	No	m	m	m	m	Yes (Formal appraisal)	No
	Greece	Yes	Yes	8	0	No	Yes	No	Yes	No	No	No	No
	Hungary	Yes	Yes	4	0	No	No	No	No	No	Yes	Yes (Practice as an employed teacher)	No
	Iceland	m	m	m	m	m	m	m	m	m	m	m	m
	Ireland	Yes	Yes	5	0	No	No	No	No	No	No	No	No
	Israel	Yes	Yes	5	0	Yes	Yes	No	Yes	No	No	No	No
	Italy	Yes	Yes	5	0	No	Yes	No	No	No	No	No	No
	Japan	Yes	Yes	5	m	Yes	m	No	m	m	m	m	Yes
	Korea	Yes	Yes	m	m	No	No	No	No	No	Yes	Yes (Vice-principal certification)	Yes
	Latvia	Yes	No	a	a	a	a	a	a	a	a	a	No
	Lithuania	No	Yes	3	0	No	No	No	No	No	No	No	Yes
	Luxembourg	Yes	Yes	5	0	No	No	No	Yes	No	No	No	No
	Mexico	Yes	Yes	2	1	No	Yes	Yes	No	Yes	Yes	No	No
	Netherlands	No	No	a	a	a	a	a	a	a	a	a	Yes
	New Zealand	Yes	No	a	a	a	a	a	a	a	a	a	No
	Norway	No	Yes	0	0	No	No	No	No	No	No	Yes (Pedagogical competencies and leadership skills)	a
	Poland	Yes	Yes	5	0	No	No	No	Yes	No	Yes	Yes (Appropriate position in the advancement scale (appointed or chartered teacher), degree or postgraduate studies in management or a qualification course in education management, evaluation on job or professional achievements etc.)	Yes
	Portugal	m	m	m	m	m	m	m	m	m	m	m	m
	Slovak Republic	Yes	Yes	5	0	No	No	Yes	No	No	No	Yes (First attestation certificate)	No
	Slovenia	Yes	Yes	5	0	No	No	No	No	No	Yes	Yes (Professional titles)	Yes
	Spain	Yes	Yes	5	0	No	No	No	No	No	Yes	No	No
	Sweden	No	No	a	a	a	a	a	a	a	a	a	Yes
	Switzerland	Yes	Yes	5	0	No	No	No	No	No	Yes	No	Yes
	Türkiye	Yes	Yes	2	1	No	Yes	Yes	Yes	No	No	a	No
	United States	m	m	m	m	m	m	m	m	m	m	m	m
	Other participants												
	Flemish Comm. (Belgium)	Yes	Yes	0	0	No	No	No	No	No	m	No	No
	French Comm. (Belgium)	Yes	Yes	3	0	No	No	Yes	No	Yes	No	No	Yes
	England (UK)	Yes	No	a	a	a	a	a	a	a	a	a	No
	Scotland (UK)	Yes	Yes	0	0	No	No	No	No	No	Yes	No	No
Partner	**Brazil**	m	m	m	m	m	m	m	m	m	m	m	m

Note: Data on teachers of pre-primary, primary, lower secondary (vocational subjects) and upper secondary (general or vocational subjects) levels, and additional information on pathways for non-teachers to apply for a school head position (Columns 13 to 16) are available for consultation on line (see *StatLink* below). See *Definitions* and *Methodology* sections for more information.

Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/wdq1ix

Indicator D7. How extensive are professional development activities for teachers and school heads?

Highlights

- Continuing professional development is compulsory to some extent for teachers of general subjects at least at one level of education in most countries with data, except Denmark, Italy, the Netherlands and New Zealand. It can be either generally compulsory for all teachers as a regular part of their work, or for some teachers for specific purposes such as promotion or salary increases, or in some cases, both.
- Continuing professional development is compulsory to some extent for heads of schools covering general programmes at various level of education, but in fewer countries than for teachers of general subjects.
- Decisions about which compulsory continuing professional development activities teachers will undertake usually involves them and their school management, while the central/state education authorities are more commonly involved in decisions about the compulsory continuing professional development of school heads.

Context

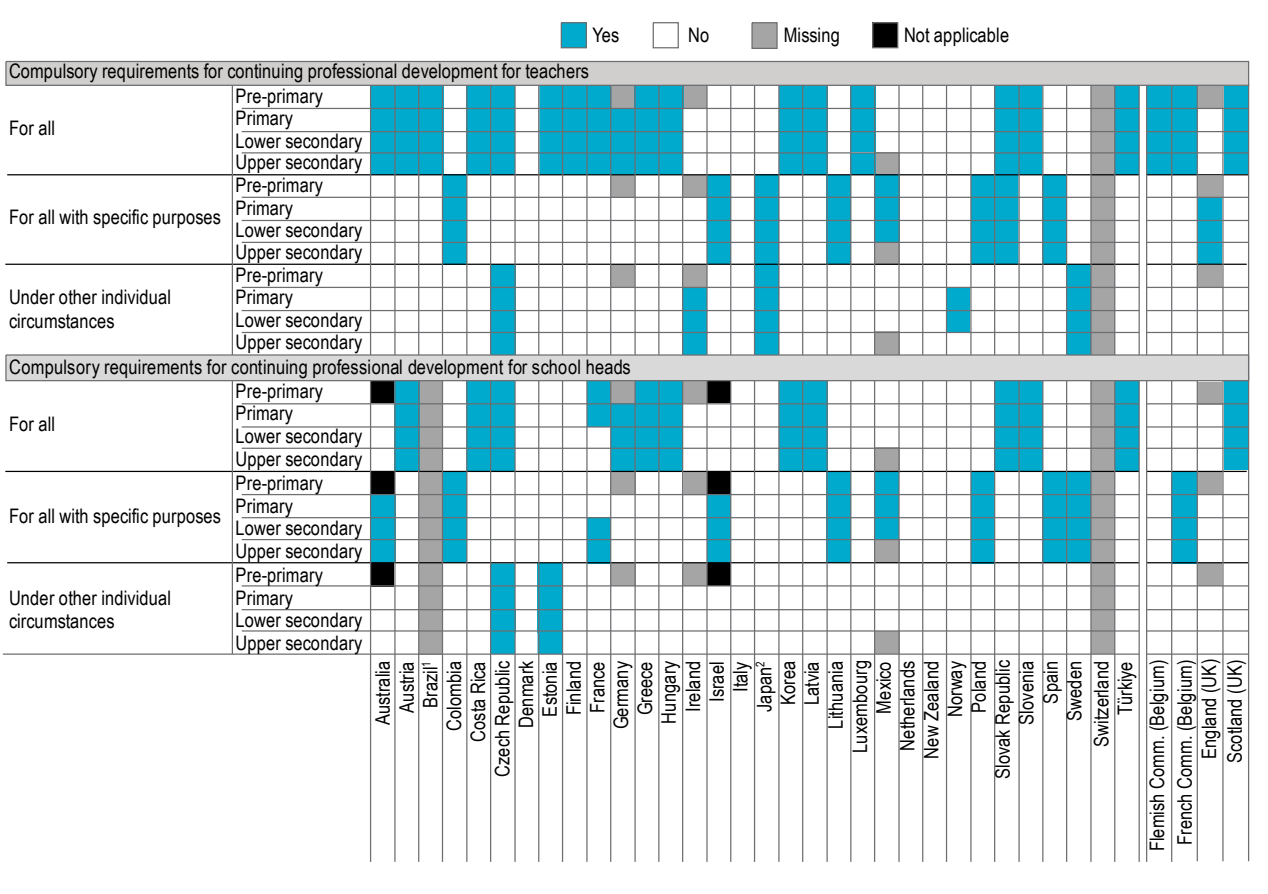
While initial teacher education provides the foundations for prospective teachers (see Indicator D6), continuing professional development supports teachers at all stages of their careers. For early-career teachers, it helps to ease the transition into the teaching profession as they face various challenges on the job. For teachers with experience, it gives them an opportunity to refresh, develop and broaden their knowledge and understanding of teaching. For teachers becoming school heads, it equips them with the management and leadership skills necessary for their role as school leaders. Above all, continuing professional development of teachers and school heads benefits students. Several studies find that sustained continuing professional development for teachers is correlated with significant learning gains for students (Yoon et al., 2007[1]). Opportunities for continuing professional development activities also help to retain high-quality teachers in the teaching profession, particularly in marginalised schools (Geiger and Pivovarova, 2018[2]).

Continuing professional development of teachers and school heads helps to continuously update and upgrade their skills and practices to adapt to an evolving learning environment: the growing diversity of students, the greater integration of students with special needs and the increasing use of information and communication technologies (ICT). In vocational education and training, it is essential for teachers to be up-to-date with the changing requirements of the modern workplace (OECD, 2005[3]). During the COVID-19 pandemic, professional development activities in digital technology played a key role in helping teachers to adapt to virtual teaching environment (OECD, 2021[4]).

Due to the high importance of continuing professional development, there is a great deal of policy interest around assessing continuing professional development in terms of its availability, cost-effectiveness and impact on teaching practices and student achievement (Hattie, 2008[5]; Yoon et al., 2007[1]).

Figure D7.1. Requirements for continuing professional development for teachers and school heads (2021)

For teachers teaching general subjects and school heads of general programmes in public institutions



1. Year of reference differs from 2021. Refer to the source table for more information.
2. Compulsory requirement for all teachers with specific purposes will be abolished as of 1 July 2022.

Source: OECD (2022), Tables D7.1 and D7.2. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

StatLink https://stat.link/5wfiq3

Other findings

- The majority of countries and other participants with available data require both compulsory and non-compulsory professional development activities of teachers and school heads to be planned (but not exclusively) in the context of their school's development priorities.
- In nearly all countries, professional development activities are provided to teachers and school heads by more than one type of provider, including public education authorities and related bodies, private entities, and higher education institutions.
- Teachers and school heads receive more often support (through financial subsidies, paid leave and/or to cover for their lessons via substitute staff) for compulsory professional development, than for non-compulsory professional development. For lower secondary teachers of general subjects, 17 countries and other participants fully subsidise the cost of compulsory professional development activities but only 6 do so for non-compulsory professional development.
- Monitoring of professional development activities is widely implemented across countries with available data, but evaluation is less often required by national regulations. Popular monitoring mechanisms include establishing standards and frameworks for the content of professional development activities, accrediting professional development providers, and setting qualification requirements for professional development providers.

Analysis

Continuing professional development for teachers

Continuing professional development provides teachers with opportunities for learning throughout their careers in education. It can encompass a whole range of activities: formal courses, seminars, conferences and workshops, online training, and formalised mentoring and supervision.

The requirement for professional development covers all levels of teaching. Professional development is compulsory for teachers of general subjects at all levels of education in 30 out of 35 countries and other participants with available data. Only in Norway do teachers of general subjects face different requirements depending on the level of education they teach: only primary and lower secondary teachers are required to update their skills and knowledge in certain subject areas (Figure D7.1).

The requirements are also similar for general and vocational secondary teachers in most countries and other participants with data, except England (United Kingdom), Finland and Mexico. In England (United Kingdom), this could be related to differences in the type of educational institutions in which they teach. Vocational subjects are only taught in government-dependent private institutions (no teacher in public institutions teaches vocational subjects), while the requirements for teachers of general subjects refer only to teachers in public institutions. In Finland, professional development is compulsory for all upper secondary teachers in general programmes, but not for those in vocational programmes (general and vocational subjects). In Mexico, lower secondary teachers of general subjects are required to take compulsory professional development in order to be promoted, but there is no such requirement for lower secondary teachers of vocational subjects (Table D7.1).

Participation in professional development is compulsory for lower secondary teachers of general subjects to some extent in most countries, except in Denmark, Italy, the Netherlands and New Zealand. Among the 35 countries and other participants with available information, more than half require all teachers to participate in professional development as a regular part of their work. In less than one-third of the countries and other participants, professional development is only compulsory for specific purposes, such as promotion (in Israel, Lithuania, Mexico and Poland), salary increases (in Colombia, Israel and Spain) and/or the completion of induction for early-career teachers (in England [United Kingdom]). In five countries, the requirements depend on teachers' individual circumstances: professional development is compulsory for individual teachers taking on specific responsibilities (in the Czech Republic and Ireland), for retraining or upskilling experienced teachers (in Japan and Norway), or for specific professional development activities set by municipalities and/or schools (in Sweden) (Table D7.1).

Four countries combine different types of compulsory professional development requirements at all levels of education. In the Czech Republic, requirements that apply to all teachers are combined with those for teachers in specific circumstances (professional development for specific responsibilities that they voluntarily carry out). In Japan, professional development is compulsory for all teachers to be recertified every ten years (but set to be abolished as of July 2022) and also for teachers who have completed the first ten years of their teaching career. Professional development is compulsory for teachers to get a promotion in Korea or salary increase in the Slovak Republic, in addition to the compulsory requirements for all teachers (Table D7.1).

Organisation of compulsory continuing professional development

The organisation of compulsory professional development does not vary by level of education or type of subject (general or vocational) in the majority of countries where the requirements for compulsory professional development are similar across levels and subjects. Then, the analysis that follows focuses on professional development for lower secondary teachers of general subjects, but it is also relevant to other levels of education in many countries (Table D7.1).

Minimum duration requirements

For lower secondary teachers of general subjects, the minimum duration of compulsory professional development is defined at the national level in three-fifths of 31 countries and other participants with some compulsory professional development. In the remainder, the minimum duration requirement varies either across subnational entities (e.g. Australia, Spain, Sweden), across months of the school year (Costa Rica), depending on teachers' individual circumstances (Norway) or is not clearly defined in national regulations (e.g. Estonia, Germany, Greece and Poland) (Table D7.1).

Depending on the requirements on teachers, conditions about how long they must spend on compulsory professional development activities can be defined in different ways. Of the 20 countries and other participants requiring all lower

secondary teachers of general subjects to undertake professional development, one-half set a minimum duration, although this is not defined for a similar period of reference in different countries. Six define a minimum annual duration, while the other four define the minimum duration over a longer time period. The minimum annual duration (or annual average for countries using a longer reference period) ranges from 10 hours in the Slovak Republic (20 hours every 2 years) to 5 days in Slovenia (Table D7.1).

Among the 14 countries and other participants where professional development is compulsory for a specific purpose or depends on individual circumstances (including 3 countries where there is also compulsory professional development for all teachers), more than two-thirds define a minimum duration. The minimum duration for compulsory professional development for specific purposes is generally defined in a recurring fashion (e.g. 100 hours every 6 years in Spain). In contrast, professional development which is compulsory under individual circumstances is usually required only once during a teacher's career – for example, in Ireland teachers are required to take 200 hours of professional development before taking on responsibility for the induction of new teachers (Table D7.1).

Planning of activities

Planning of professional development activities, whether at the school level or the individual teacher level or both, is often required in countries where professional development is compulsory for some or all teachers. Among the 31 countries and other participants where some compulsory professional development is required for lower secondary teachers of general subjects, about two-thirds have central regulations requiring teacher-level and/or school-level planning. The most common requirement is a plan for both individual teachers and schools. Five countries and other participants only require a school-level plan, while in Scotland (United Kingdom) and Türkiye, only individual teachers' plans are required (Table D7.1).

Most countries require compulsory professional development activities to be planned in the context of individual school development priorities. These activities must be planned (but not exclusively) in the context of individual school development priorities in about three-quarters of the countries and other participants for lower secondary teachers of general subjects. In the Slovak Republic, plans must be developed exclusively in this context. In seven countries, professional development activities can be planned independently from school development priorities and in Finland it can be decided locally. Four countries require professional development activities to be planned in the context of individual school development priorities even though they do not formally require these activities to be planned in the first place (Table D7.1).

The planning of compulsory professional development activities could take into account the requirements related to the contents of compulsory professional development activities by the relevant education authorities (Box D7.1).

Box D7.1. Content of compulsory professional development activities for teachers and school heads

The contents of school heads' and teachers' compulsory professional development activities are very similar across different levels of education with the same participation requirements. The analysis that follows focuses on lower secondary teachers of general subjects and school heads of schools covering lower secondary general programmes only.

For teachers, less than half of the countries with some compulsory professional development requirements mandate the content of these activities or align them with established standards at the national/central level. The contents are mandated in 7 out of 31 countries and other participants while in 7 others, the contents are not mandated, but they still have to be aligned with established national or central standards (Table D7.1).

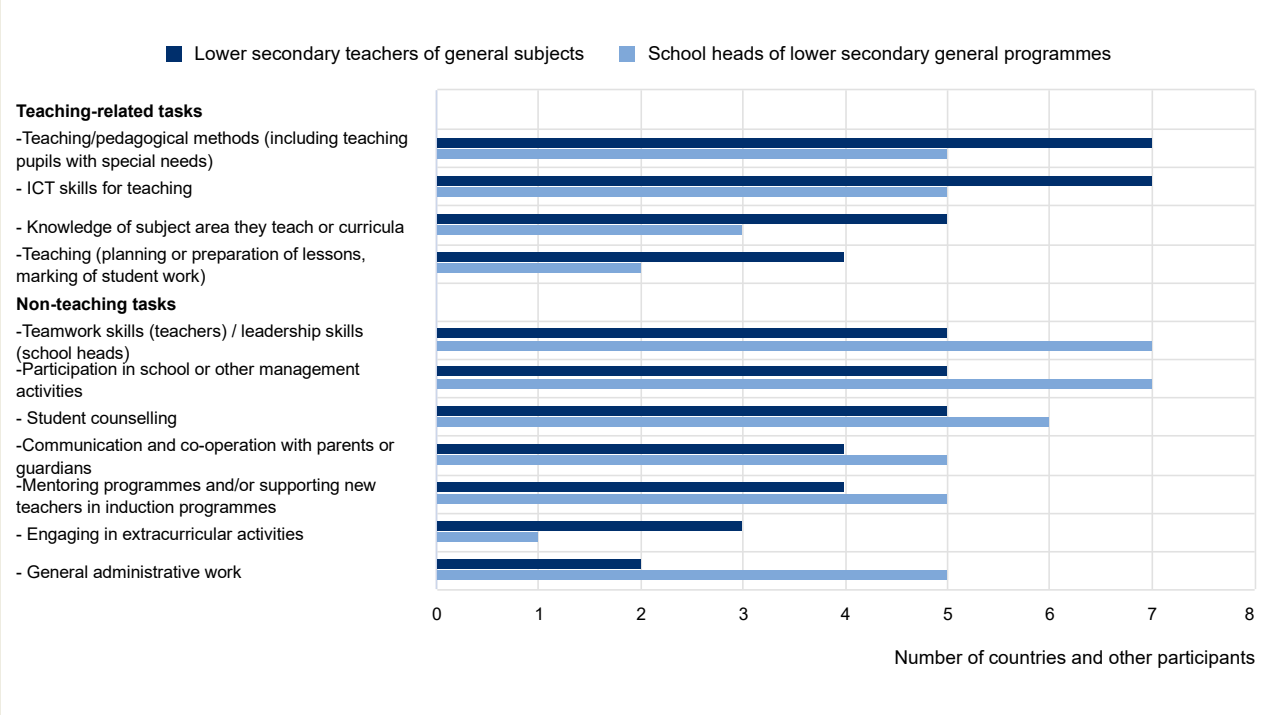
In all of these 14 countries except Sweden, central/state education authorities are responsible for decisions about the contents of teachers' professional development activities. Moreover, the central/state education authority is often the only level of authority involved. However, in Sweden, these decisions are taken at a more local level, with the local/municipal education authority and schools responsible for deciding the contents (Table D7.5, available on line).

Where the content of compulsory professional development activities is mandated or specified in a way, it usually includes some form of formalised teacher collaboration activities. Collaboration can occur at individual school level (in all countries and other participants with some form of formalised teacher collaboration), as well as outside school, such as at a municipal/local level (in six countries and other participants) or at a central level (in Costa Rica, Hungary and Israel) (Table D7.1).

The mandated contents of compulsory professional development cover teaching-related tasks more often than non-teaching ones. In particular, all the countries and other participants which mandate content include teaching/pedagogical methods (including teaching pupils with special needs) and the ICT skills required for teaching tasks (Figure D7.2).

Figure D7.2. Mandated contents of teachers' and school heads' compulsory continuing professional development (2021)

For teachers of general subjects and school heads of general programmes at lower secondary level



Note: The French Community of Belgium and England (United Kingdom) are included in the number of countries and other participants.
Tasks and responsibilities are ranked in the descending order of occurrence for teachers, by type of tasks (teaching and non-teaching tasks).
Source: OECD (2022), Tables D7.1 and D7.2. See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

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Regardless of the mandated contents of compulsory professional development activities of teachers, the COVID-19 crisis has increased teachers' need for training in ICT tools to support their increased use in teaching in many OECD countries (OECD, 2021[4]).

For school heads, the contents of their compulsory professional development activities are mandated in nine countries and other participants. In five other countries, contents are not mandated but they still have to be aligned with established standards (Table D7.2).

As with teachers, the central/state education authority takes responsibility for setting standards or content areas of compulsory professional development activities for school heads where the contents are either mandated or must be aligned with established standards, and it is the only responsible authority in nine countries and other participants. Other bodies such as subnational education authorities or school heads' professional organisations are not usually involved (Table D7.6, available on line).

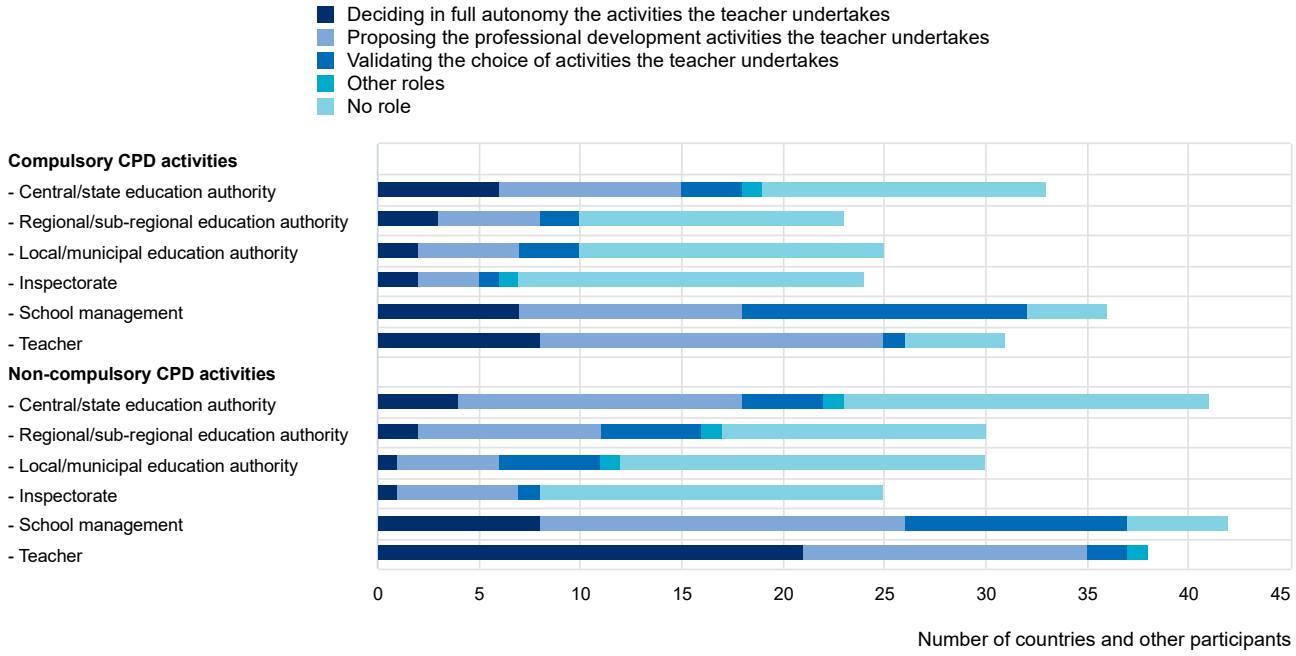
Where the contents of their compulsory professional development activities are mandated, they often cover management skills and leadership. In a few countries, the contents also include teaching/pedagogical methods (including teaching students with special needs) and ICT skills for teaching, which help school heads with their teaching responsibilities (Figure D7.2).

Deciding which activities are undertaken

Teachers and school management are usually involved in decisions about the compulsory professional development activities undertaken by individual teachers. In about two-fifths of the countries and other participants with some compulsory professional development for lower secondary teachers of general subjects, teachers propose the activities they want to do, and the school management (together with an education authority in some cases) validates these choices (i.e. accept or reject the proposal) or makes an autonomous decision. This process can help to ensure that teachers' professional development activities are at least partially consistent with the school's development priorities. In five other countries, teachers decide or validate the choice of activity, but the school management also validates these choices. In these countries, the content of these activities needs to be aligned (at least to some extent) with schools' development priorities. In Greece, Mexico and Spain, the education authorities at the national or regional levels rather than the school management have responsibility for validating or deciding, possibly because in these countries, activities do not have to be planned within the context of individual school development priorities (Figure D7.3, Table D7.1 and Table D7.5, available on line).

Figure D7.3. Decision making about individual teachers' continuing professional development (CPD) activities (2021)

For lower secondary teachers of general subjects, by type of role



Note: The Flemish and French Communities of Belgium, England (United Kingdom) and Scotland (United Kingdom) are included in the number of countries and other participants. Countries and other participants are counted multiple times if more than one role is undertaken. Therefore, the total number of countries and other participants may be higher than the number of countries and other participants with data.
Source: OECD (2022), Tables D7.5 and D7.9 (web only). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

StatLink https://stat.link/gmp4ul

Decision making about individual teachers' compulsory professional development activities is similar across different levels of education and between teachers of general and vocational subjects in nearly all countries. However, in Austria, the decision making depends on the level of education. The school management and the inspectorate propose compulsory professional development activities for pre-primary teachers, and teachers decide whether to undertake them. In contrast, at primary and secondary levels, teachers propose professional development activities, while the school management decide whether the

teachers should undertake them. In Ireland, teachers propose professional development activities and the school management and central education authorities decide on which activities primary teachers have to take, but only central education authorities decide for secondary teachers (Table D7.5, available on line).

Organisation of non-compulsory continuing professional development activities

The organisation of non-compulsory professional development activities for lower secondary teachers of general subjects is similar to those of teachers at other levels of education, except in Austria, Brazil, France, Israel, the Netherlands and Sweden. At secondary level, it also differs little between teachers of general and vocational subjects. In Japan, the requirements vary between upper secondary teachers in general and vocational programmes (Table D7.9, available on line).

Planning of activities

In most countries, teachers' non-compulsory professional development activities should be planned (but not exclusively) in the context of individual school development priorities. For lower secondary teachers of general subjects, this is the case in 22 out of 35 countries and other participants. In the remaining countries, there is no requirement on the planning of these activities (in nine countries and other participants) or the requirements may differ across subnational entities and/or schools (e.g. Australia and Finland) (Table D7.9, available on line).

Requirements on planning of non-compulsory professional development activities do not differ from planning of compulsory activities for all teachers, except in a few countries. In Greece, compulsory professional development activities for all teachers do not need to be planned in the context of individual school development priorities, but non-compulsory activities do. The opposite is the case in the Czech Republic, Estonia and the Slovak Republic. In Denmark, Italy and New Zealand, where there is no requirement for compulsory professional development, non-compulsory professional development activities do have to be planned at least partially in the context of individual school development priorities (Table D7.1 and Table D7.9, available on line).

Deciding which activities are undertaken

Similarly to decisions about compulsory professional development activities, teachers and school managements are the main stakeholders involved in the decisions on non-compulsory professional development activities undertaken by individual teachers (Figure D7.3).

However, the roles of teachers and school management differ between compulsory and non-compulsory activities. For example, lower secondary teachers of general subjects have full autonomy to decide which activities to undertake in 21 out of 35 countries when it comes to non-compulsory activities, but in only 8 out of 31 countries when it comes to compulsory activities. Similarly, proposals about teachers' non-compulsory professional development activities are usually made by school management and/or education authorities (generally at central/state level), whereas proposals for compulsory activities are also made by teachers (Tables D7.5 and D7.9, available on line).

School management often validate the choice of non-compulsory professional development activities, as is the case with compulsory activities, but in a smaller number of countries. The choice of non-compulsory activities undertaken by teachers needs to be validated by school management in a little less than one-third of countries (Figure D7.3).

Continuing professional development for school heads

Professional development is compulsory, at least to some extent, for the heads of schools with only general programmes in about two-thirds of the 34 countries and other participants with data. This share is lower than for teachers of general subjects. Eleven countries and other participants do not require any school heads to participate in professional development activities. Professional development requirements for school heads do not generally vary by level of education, which may simplify the implementation of these requirements considering that school heads may lead schools covering different levels of education. In Mexico, there is no difference between levels of education (for which data are available), but heads of lower secondary schools with general programmes are required to undertake professional development for promotion, whereas there is no such requirement for heads of schools with only vocational programmes (Figure D7.1 and Table D7.2).

Requirements for school heads vary across countries. Taking schools covering only general programmes at lower secondary level as an example, professional development activities are compulsory for all school heads in 12 countries and other

participants, and only compulsory for specific purposes in 10. In two countries they are compulsory for some school heads depending on their individual circumstances: when they have additional voluntary responsibilities such as counselling students (in the Czech Republic) or to align with the school development strategy (in Estonia). The Czech Republic is the only country with two types of compulsory professional development requirements for school heads (for all school heads and for specific individual circumstances), and it is also one of the countries with two types of professional development requirements for teachers (Table D7.1 and Table D7.2).

Organisation of compulsory continuing professional development activities

Only a few countries have different requirements for the organisation of compulsory professional development activities for school heads depending on the level of education or type of programme. In Austria, pre-primary school heads have different professional development requirements from their peers at other levels of education, in Hungary the requirements for the heads of schools covering upper secondary vocational programmes are different from those covering general programmes or other levels of education, and in Türkiye, pre-primary and primary school heads have different requirements from their counterparts in secondary schools. Then, the analysis that follows focuses on professional development for heads of schools covering lower secondary general programmes only, but it is also relevant to other levels of education and programmes in most countries (Table D7.2).

Minimum duration requirements

The minimum duration of compulsory professional development for school heads is defined in the regulations of 14 countries and other participants. The annual minimum duration of professional development required for all school heads (or an average per year if defined over a period of years) ranges from 12 hours in Latvia (36 hours every 3 years) to 64 hours in the Slovak Republic (320 hours every 5 years). For professional development required for specific purposes, the minimum duration reaches 180 hours in the French Community of Belgium (to obtain the certification to be permanently appointed as a school head) (Table D7.2).

Planning of activities

School heads are required to undertake professional development planning in about three-quarters of the countries and other participants where they have some compulsory professional development requirements. In a majority of them, professional development activities are planned (but not exclusively) in the context of individual school development priorities. In a few countries, school heads are not required to plan their professional development activities but these are planned (but not exclusively) in the context of individual school development priorities. Only in Estonia must compulsory professional development be planned exclusively in the context of individual school development priorities because individual professional development has to be based on each school's development strategy (Table D7.2).

Deciding which activities are undertaken

Central/state education authorities have full autonomy to decide which compulsory professional development activities are undertaken by individual school heads in 10 of the 23 countries and other participants with some compulsory professional development requirement. In most of these countries, the school management does not play any role in the decision making. In four other countries, the school management has autonomy to decide on compulsory activities, although the local/municipal education authority validates these decisions in two of them (in Hungary and Lithuania). In the remaining nine countries and other participants, neither central/state education authorities nor school management make decision in full autonomy, but one or more stakeholders can propose, validate choices, or take other roles in these decisions (Table D7.6, available on line).

Organisation of non-compulsory continuing professional development activities

Requirements on the organisation of non-compulsory professional development activities for school heads are the same across levels of education and types of academic programmes in most countries and other participants with available data. These requirements only differ from the arrangements in lower secondary general education in Austria (pre-primary), Denmark (pre-primary and upper secondary general programmes) and Hungary (upper secondary vocational programmes) (Table D7.10, available on line).

Planning of activities

It is quite common to align plans for non-compulsory professional development activities with individual school development priorities. For example, heads of schools covering lower secondary general programmes are required to plan these activities (but not exclusively) in the context of individual school development priorities in about three-fifths of the 34 countries and other participants with data, and exclusively in the context of individual school development priorities in France. Non-compulsory activities can be planned independently of school development priorities in eight countries and other participants (Table D7.10, available on line).

Deciding which activities are undertaken

Stakeholders play slightly different decision-making roles when comparing the compulsory and non-compulsory professional development activities undertaken by individual school heads. For heads of schools covering lower secondary general programmes only, decisions on which non-compulsory professional development activities they will undertake are taken autonomously by school management in 11 countries and other participants, and by the school heads themselves in Estonia and Italy. In 8 of these 13 countries, school heads are not required to undertake compulsory professional development activities, and even when required to do so, neither school management nor school heads have autonomy to decide about compulsory activities. In Finland, where school heads have no compulsory professional development requirements, decisions about which non-compulsory activities they undertake are made in agreement between school heads and their employers (Tables D7.6 and D7.10, available on line).

Education authorities at various levels (i.e. central/state, regional/sub-regional and/or local/municipal) can be involved in decision making, either deciding which activities school heads will undertake, proposing activities or validating choices about activities. Their most common role is proposing activities, seen in about half of the countries and other participants with data (Table D7.10, available on line).

Factors supporting continuing professional development for teachers and school heads

A number of factors can affect the participation of teachers and school heads in professional development: the range of providers, access to information about the existence and contents of professional development opportunities, and the financial support available to participants and their schools. As financial support for professional development can be limited and high-quality training is not guaranteed in all professional development activities, quality assurance mechanisms, such as monitoring and evaluation, can help with decisions about the best way to manage limited resources for professional development activities.

Providers of continuing professional development activities

All countries and other participants have more than one type of body or institution providing professional development activities for teachers. However, for school heads, a few countries have only one type of provider of professional development activities at some levels of education: in Austria at primary and lower secondary levels, in France at secondary level and in Hungary at vocational upper secondary level (Tables D7.7 and D7.8, available on line).

Providers of professional development activities can be either public or private entities, although no information was collected on the prevalence of either. In most countries, there is at least one type of provider in the public education system (outside of schools), such as education authorities at different levels of government, public agencies for teachers' professional development, inspectorates, professional organisations, and teachers' or school heads' unions. In more than three-quarters of the countries with data, private companies provide professional development activities to teachers and to school heads (Tables D7.7 and D7.8, available on line).

Higher education institutions are among the most common type of provider of professional development activities to teachers and school heads. They play this role in nearly all countries except Australia (for teachers at all levels of education) and Hungary (for upper secondary teachers of vocational subjects and heads of schools at vocational upper secondary level). They are even the only providers of professional development for school heads covering primary and lower secondary levels in Austria and for school heads covering lower and upper secondary levels in France. Box D7.2 gives some examples of the roles that higher education institutions play in providing professional development to teachers and school heads (Tables D7.7 and D7.8, available on line).

Box D7.2. Role of higher education institutions in continuing professional development of teachers and school heads

Higher education institutions are not only the main providers of initial teacher education programmes in most countries (see Indicator D6), but they also provide continuing professional development activities for teachers and school heads in many OECD countries.

Higher education institutions provide activities that are formal and academic in nature. In Norway, for example, teachers of specific subjects (particularly those with an older teaching qualification) are required to take courses provided by higher education institutions in order to meet new competence requirements. During the academic year 2017/18, about 8% of teachers of pre-primary, primary and secondary general programmes in Norway were enrolled in such courses. In Slovenia, higher education institutions offer study programmes to teachers who wish to teach additional subjects.

Higher education institutions may also be involved in the development of professional development activities. For example, the central education authority collaborated with higher education institutions to develop an online skill development course for new school heads in Denmark and a system of in-service training courses for teachers and school heads in Estonia.

Source: 2021 OECD-INES-NESLI survey on professional development of teachers and school heads.

Individual schools and initial teacher education institutions (which could include higher education institutions) also provide professional development activities to teachers in most countries with available information. Other providers for teachers and school heads include privately run continuing education institutions (Estonia), professional development organisations run by the school organising authorities (the Flemish Community of Belgium), different institutions cooperating such as *Rectorats* and the Regional Directorate of Cultural Affairs (France), Education Centres and Education and Training Boards (Ireland), and non-governmental organisations (Slovenia) (Tables D7.7 and D7.8, available on line).

The types of providers available are similar across levels of education for teachers (of general subjects), except in Austria, Israel, Latvia and Mexico, and for school heads (of schools covering general programmes only), except in Austria, Denmark and France. At secondary level, the types of providers are also similar between teachers of general and vocational subjects, except at lower secondary level in England (United Kingdom) and Mexico, and at upper secondary level in Brazil, England (United Kingdom), Estonia and Hungary. In Japan, the types of providers vary between upper secondary teachers in general and vocational programmes. Providers for school heads are similar for schools with general programmes, vocational programmes and both, except in England (United Kingdom) and Hungary (Tables D7.7 and D7.8, available on line).

Bodies disseminating information on continuing professional development activities

In most countries and other participants with available information, several bodies usually disseminate information about professional development activities for teachers and for school heads at any level of education. However, only one type disseminates this information for teachers in Finland and the Slovak Republic, and for school heads in Finland, the French Community of Belgium and the Netherlands. This is also the case at specific levels of education (for teachers or school heads) in Denmark and Hungary (Tables D7.7 and D7.8, available on line).

Information on professional development activities is often disseminated by education authorities and school managements. Central/state education authorities disseminate this information in most countries and other participants with data and regional/sub-regional and/or local/municipal education authorities do so in about two-thirds of them. School managements disseminate the information to teachers in about nine out of ten countries and other participants with data, and to school heads in about two-thirds of them (Tables D7.7 and D7.8, available on line).

Other types of bodies also collect and circulate information on professional development activities, but they vary across countries: for example, inspectorates have this role in less than one-third of countries and other participants with data, teachers' unions collect and circulate information for teachers in France and New Zealand, and tertiary or other educational institutions collect and circulate information for teachers and school heads in Latvia and Slovenia (Tables D7.7 and D7.8, available on line).

The types of bodies in charge of disseminating information to teachers of general subjects and to school heads of schools covering general programmes are similar across all levels of education in most countries, except Austria, Denmark and

Mexico. At secondary level, they are also similar between teachers of general and vocational subjects, except at lower secondary level in England (United Kingdom) and Mexico, and at upper secondary level in England (United Kingdom), Estonia and Hungary. In Japan, they vary between upper secondary teachers in general and vocational programmes. Similar bodies also disseminate information for school heads, whatever the type of programmes covered in schools (general or vocational), except at lower secondary level in England (United Kingdom) and Mexico, and at upper secondary level in England (United Kingdom) and Hungary (Tables D7.7 and D7.8, available on line).

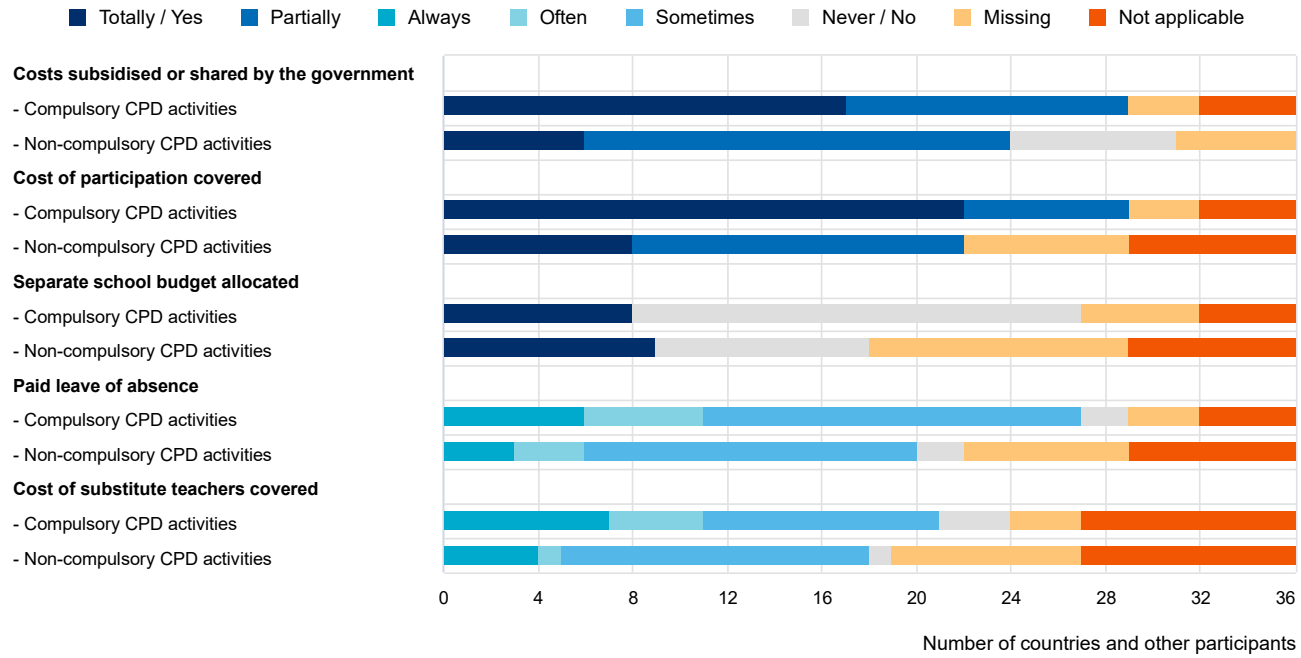
Funding and support strategies

Participation in professional development activities depends on teachers and school heads being able to fit these activities into their regular work schedule, and on the financial costs incurred by teachers, school heads or schools. In 2018, more than 40% of teachers and more than one-third of school heads reported that time conflicts with their work schedule and/or the high cost of professional development activities were barriers to participating in professional development, on average across the OECD countries in the Teaching and Learning International Survey 2018 (OECD, 2019[6]). Therefore, public funding and support strategies to share or subsidise the costs of professional development activities could encourage staff to engage in professional development.

Across the OECD countries and other participants with available data, funding and support strategies for professional development activities for teachers of general subjects are very similar for all levels of education. There are differences in support strategies for compulsory professional development depending on the level of education in Austria, Estonia, the Flemish Community of Belgium and France. For non-compulsory activities, the strategies differ across levels in Israel and the Netherlands (Tables D7.5 and D7.9, available on line).

Figure D7.4. Funding and support strategies for teachers' continuing professional development (CPD) activities (2021)

For lower secondary teachers of general subjects



Note: The Flemish and French Communities of Belgium, England (United Kingdom) and Scotland (United Kingdom) are included in the number of countries and other participants. For two countries with more than one response, the most representative response has been selected.
Source: OECD (2022), Tables D7.5 and D7.9 (web only). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

StatLink https://stat.link/p3yxv8

Funding and support strategies for teachers differ substantially between compulsory and non-compulsory professional development, with much more widespread support for compulsory activities than for non-compulsory ones (Figure D7.4).

The government fully covers the costs of compulsory professional development activities (including the cost of participation, paid leave of absence and the cost of substitute teachers) for lower secondary teachers of general subjects in about half of the 31 countries and other participants with compulsory professional development activities, and partly covers these costs in two-fifths of them. In comparison, the government fully covers the costs of non-compulsory professional development activities in less than one-fifth of the 35 countries and other participants with available information, and partly covers them in about half of them. Seven countries and other participants do not subsidise the costs incurred by non-compulsory activities at all, but at least partly cover the costs of compulsory activities (Figure D7.4).

All the countries and other participants with available information at least partially cover the cost of participation (the fees for participating in professional development activities) for both compulsory and non-compulsory professional development activities of lower secondary teachers of general subjects. Nearly three-quarters fully cover this cost for compulsory activities while only about one-quarter do for non-compulsory activities. Where these activities are compulsory for all teachers, they are fully covered by slightly more countries than where they are only compulsory for specific purposes or for teachers in particular circumstances (Figure D7.4 and Tables D7.5 and D7.9, available on line).

Schools are not usually allocated a separate budget for professional development. At lower secondary level, schools have a separate budget for both compulsory and non-compulsory professional development in only three countries (the budget may not necessarily distinguish between the two). In five countries and other participants, schools receive a separate budget just for compulsory professional development and in six they receive one just for non-compulsory professional development. However, it may not be necessary to allocate specific school budgets in systems where the budget for professional development is organised at the central level (e.g. for compulsory professional development for all teachers in the French Community of Belgium, Greece and Israel). In a few countries, the allocation of budget for non-compulsory professional development is a local/municipal level decision, so there is no top-level regulation on this matter (Tables D7.5 and D7.9, available on line).

Teachers who participate in professional development activities receive paid leave of absence in most countries with data, although the number of occasions is limited in the majority of these countries. The availability of paid leave differs between compulsory and non-compulsory activities: fewer countries always or often provide paid leave of absence to lower secondary teachers of general subjects attending non-compulsory activities (6 countries and other participants) than for compulsory activities (11 countries and other participants) (Figure D7.4).

The cost of substitute teachers is also covered in most countries and other participants with data, although the majority only sometimes offer this support. Three countries and other participants do not need to provide substitute teachers because professional development activities do not affect students' timetables, either because they are held outside school hours (e.g. Greece and Mexico) or because there are days when schools are closed for teachers' professional development activities (e.g. the French Community of Belgium) (Figure D7.4).

The funding and support strategies for school heads' professional development are similar to those for teachers. Nevertheless, in less than half of the 35 countries and other participants with data, the level or availability of funding and support differ between teachers and school heads in at least one aspect. For example, in Israel, both teachers and school heads are required to undertake professional development to get a salary increase, but teachers are fully subsidised for this compulsory professional development, and school heads only partially so (Tables D7.5, D7.6, D7.9 and D7.10, available on line).

Quality assurance mechanisms for continuing professional development activities for teachers

Monitoring of professional development activities for teachers

Quality assurance mechanisms are available to monitor professional development activities for teachers at all levels of education in more than three-quarters of the 34 countries and other participants with data. Among them, the most common mechanism is standards/frameworks for the contents of professional development activities, used in more than four out of five cases. Accrediting providers of professional development activities and qualification requirements for providers are implemented in about three-quarters of cases and guidelines on the expected outcomes of professional development activities are implemented in less than two-thirds of cases. Some countries with decentralised education systems monitor professional development activities at subnational level, so practices could vary within the country. In Brazil for example, there is no

national policy for monitoring the quality of teachers' professional development activities, but some municipalities and states have education systems which do have a policy (Table D7.3).

A majority of countries and other participants with data on the monitoring of professional development activities collect some quantitative data that could be used to monitor the quality of these activities. The two commonest type of data are participation rates in professional development activities and participants' satisfaction levels. These are collected in more than three-quarters of them. Completion rates of professional development activities are also widely collected, followed by the number of certificates issued after professional development activities (in more than half of countries and other participants where some type of data is collected). More than two-fifths of the countries and other participants collect all four of these types of data, while Denmark (at primary and lower secondary levels), Estonia and Lithuania collect just one type (Table D7.3).

The collected data are used for various purposes, but about three-quarters of the 28 countries and other participants (where some data is collected) report that they are used to evaluate the effectiveness of formats and resources for professional development activities. Two-thirds use them for identifying and scaling up successful opportunities for professional development and monitoring levels of teachers' participation in compulsory and non-compulsory professional development activities. More than half collect data to forecast or assess teachers' skills needs at the system level. Other less widely used purposes included improving future professional development activities (Estonia), identifying outcomes and impacts of national education strategies and priorities (New Zealand), and co-financing professional development programmes (Slovenia) (Table D7.3).

Evaluation of professional development activities for teachers

While most countries monitor professional development activities, central level regulations require evaluations of these activities in nearly half of the 33 countries and other participants with data available. In Australia, Brazil and Switzerland, regulations requiring the evaluation of professional development activities may vary at subnational level. In the remaining countries, there is either no requirement or no explicit requirement (in official documents) for the evaluation of teachers' professional development activities (Table D7.4, available on line).

Evaluation of professional development activities is the responsibility of the central/state education authorities in two-thirds of the countries and other participants which require it (5-10 countries, depending on the level of education and type of educational programmes). Lower-level education authorities (regional/sub-regional and/or local/municipal education authorities), inspectorates and/or individual schools are responsible in about two-fifths of the countries and other participants. Providers of professional development activities also have responsibility to self-evaluate in more than half of the countries and other participants. Evaluation of professional development activities is a shared responsibility among multiple parties, except in Hungary (where it is only the responsibility of providers of professional development activities for teachers of general subjects) and the Slovak Republic (where it is solely up to individual schools) (Table D7.4, available on line).

Where evaluation of professional development activities is required, the data used are collected through questionnaires or surveys of teachers in more than three-quarters of the countries and other participants. Other methods include impact evaluation studies of professional development activities and a mandatory part of school self-evaluations (both in less than half of the countries and other participants where evaluation is required) and external school evaluations such as inspections (in less than one-third of the countries and other participants where evaluation is required). More than half of the countries collect data through more than one method, while six use only one data collection method for at least one level of education (Table D7.4, available on line).

Nearly all countries and other participants require regular collection of the data used to evaluate professional development activities where such evaluation is required. In Spain and Türkiye, the data are also collected on an ad-hoc basis when needed (Table D7.4, available on line).

Definitions

Compulsory continuing professional development activities refer to continuing professional development activities that are required for a fully qualified teacher or a qualified school head during a school year, as specified in relevant official documents. They can be compulsory for all teachers/school heads as a part of their statutory role, compulsory for all teachers/school heads to satisfy specific purposes (e.g. recertification, salary increases or promotion), and compulsory in the

individual circumstances of teachers/school heads (e.g. prerequisite for a specific role in school, retraining targeted for a specific group of teachers).

(Continuing) professional development activities are activities designed to develop an individual's skills, knowledge and expertise as a teacher or a school head (or more generally, a professional). These activities are formal and can encompass a whole range of activities: formal courses, seminars, conferences and workshops, online training, and mentoring and supervision. It can also refer to formalised collaboration and participation in professional networks. Professional development does not refer to usual teaching and working practices which also are developing them professionally.

Evaluation of professional development activities refer to the formal evaluation of the activities that serve teachers. It does not refer to the evaluation or appraisal of individual teachers.

Coverage

Thirty-six OECD and partner countries and other participants contributed to the 2021 OECD-INES-NESLI survey on professional development of teachers and school heads used to develop this indicator: Australia, Austria, Brazil, Colombia, Costa Rica, the Czech Republic, Denmark, England (United Kingdom), Estonia, Finland, France, the Flemish and French Communities of Belgium, Germany, Greece, Hungary, Ireland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Scotland (United Kingdom), the Slovak Republic, Slovenia, Spain, Sweden, Switzerland and Türkiye.

Methodology

See Annex 3 for country-specific notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

Source

Data are from the 2021 OECD-INES-NESLI survey on professional development of teachers and school heads and refer to the school year 2020/21.

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Indicator D7 Tables

Tables Indicator D7. How extensive are professional development activities for teachers and school heads?

Table D7.1	Requirements for teachers' professional development (2021)
Table D7.2	Requirements for school heads' professional development (2021)
Table D7.3	Quality assurance mechanisms implemented for teachers' professional development activities (2021)
WEB Table D7.4	*Evaluation of teachers' professional development activities (2021)*
WEB Table D7.5	*Decision making, support, and standards and content setting for teachers' required professional development activities (2021)*
WEB Table D7.6	*Decision making, support, and standards and content setting for school heads' required professional development activities (2021)*
WEB Table D7.7	*Providers of and information dissemination about teachers' professional development activities (2021)*
WEB Table D7.8	*Providers of and information dissemination about school heads' professional development activities (2021)*
WEB Table D7.9	*Support for teachers' non-compulsory professional development activities (2021)*
WEB Table D7.10	*Support for school heads' non-compulsory professional development activities (2021)*

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Cut-off date for the data: 17 June 2022. Any updates on data can be found on line at: http://dx.doi.org/10.1787/eag-data-en.

Table D7.1. Requirements for teachers' professional development (2021)

For lower secondary teachers (general subjects) in public institutions

		Requirements for professional development		Minimum duration of professional development required	Type of professional development planning required	Professional development activities are planned in the context of individual school development priorities	Contents of professional development activities are specified
		Type of requirements	Specific purposes or circumstances requiring compulsory professional development				
		(1)	(2)	(3)	(4)	(5)	(6)
OECD	**Countries**						
	Australia	Compulsory for all	a	m	m	Yes, but not exclusively	m
	Austria	Compulsory for all	a	15 hours per year	Teacher and school plan	Yes, but not exclusively	Yes, contents specified
	Canada	m	m	m	m	m	m
	Chile	m	m	m	m	m	m
	Colombia	Compulsory for specific purposes	Salary increase	144 hours	No plan	Yes, but not exclusively	No, not mandated
	Costa Rica	Compulsory for all	a	m	No plan	No	No, but aligned with standards
	Czech Republic	Compulsory for all	a	a	School plan	Yes, but not exclusively	No, not mandated
		Compulsory for some	To conduct additional voluntary responsibilities	187.5 hours	School plan	Yes, but not exclusively	Yes, contents specified
	Denmark	Not compulsory	a	a	a	a	a
	Estonia	Compulsory for all	a	a	Teacher and school plan	Yes, but not exclusively	No, not mandated
	Finland	Compulsory for all	a	18 hours per year	No plan	m	No, not mandated
	France	Compulsory for all	a	a	Teacher and school plan	Yes, but not exclusively	Others
	Germany	Compulsory for all	a	a	No plan	Yes, but not exclusively	No, not mandated
	Greece	Compulsory for all	a	a	School plan	No	Yes, contents specified
	Hungary	Compulsory for all	a	90 hours every 7 years	School plan	Yes, but not exclusively	No, but aligned with standards
	Iceland	m	m	m	m	m	m
	Ireland	Compulsory for some	To support newly qualified teachers during induction	200 hours	Teacher and school plan	No	No, but aligned with standards
	Israel	Compulsory for specific purposes	Promotion or salary increase	120-210 hours every 3-4 years	Teacher and school plan	Yes, but not exclusively	Yes, contents specified
	Italy	Not compulsory	a	a	a	a	a
	Japan	Compulsory for specific purposes [1]	Recertification	30 hours every 10 years	Teacher and school plan	Yes, but not exclusively	No, not mandated
		Compulsory for some	Teachers with 10 years of experience	57 hours	Teacher and school plan	Yes, but not exclusively	No, not mandated
	Korea	Compulsory for all	a	m	Teacher and school plan	Yes, but not exclusively	m
		Compulsory for specific purposes	Promotion to a higher qualification	90 hours	a	No	No, but aligned with standards
	Latvia	Compulsory for all	a	36 hours every 3 years	Teacher and school plan	Yes, but not exclusively	No, but aligned with standards
	Lithuania	Compulsory for specific purposes	Promotion to a higher qualification	40 hours per year	School plan	Yes, but not exclusively	No, but aligned with standards
	Luxembourg	Compulsory for all	a	54 hours every 3 years	No plan	Yes, but not exclusively	No, not mandated
	Mexico	Compulsory for specific purposes	Promotion	40 hours per year	Teacher and school plan	No	Yes, contents specified
	Netherlands	Not compulsory	a	a	a	a	a
	New Zealand	Not compulsory	a	a	a	a	a
	Norway	Compulsory for some	To continue teaching in certain subjects	m	No plan	Yes, but not exclusively	Others
	Poland	Compulsory for specific purposes	Promotion	a	Teacher and school plan	Yes, but not exclusively	No, not mandated
	Portugal	m	m	m	m	m	m
	Slovak Republic	Compulsory for all	a	20 hours every 2 years	Teacher and school plan	Yes, exclusively	No, not mandated
		Compulsory for specific purposes	Salary increase	200 hours over a maximum of 7 years	Teacher and school plan	Yes, exclusively	Others
	Slovenia	Compulsory for all	a	5 days per year	Teacher and school plan	Yes, but not exclusively	No, not mandated
	Spain	Compulsory for specific purposes	Salary increase	100 hours every 6 years	No plan	No	No, not mandated
	Sweden	Compulsory for some	Mandatory activities set by municipality and/or school	a	Teacher and school plan	Yes, but not exclusively	Yes, contents specified
	Switzerland	m	m	m	m	m	m
	Türkiye	Compulsory for all	a	30 hours per year	Teacher plan	Yes, but not exclusively	No, not mandated
	United States	m	m	m	m	m	m
	Other participants						
	Flemish Comm. (Belgium)	Compulsory for all	a	a	School plan	Yes, but not exclusively	No, not mandated
	French Comm. (Belgium)	Compulsory for all	a	18 hours per year	Teacher and school plan	Yes, but not exclusively	Yes, contents specified
	England (UK)	Compulsory for specific purposes	As a part of induction for early career teachers	a	a	No	No, but aligned with standards
	Scotland (UK)	Compulsory for all	a	35 hours per year	Teacher plan	Yes, but not exclusively	No, not mandated
Partner	**Brazil** [2]	Compulsory for all	a	m	m	m	m

Note: Data on pre-primary, primary, lower secondary (vocational subjects) and upper secondary (general or vocational subjects) levels, as well as the tasks and responsibilities covered by the mandated contents and the type of formalised teacher collaboration for compulsory continuing professional development activities (Columns 7 to 25) are available on line (see *StatLink* below). See *Definitions* and *Methodology* sections for more information.

1. Recertification system is set to be abolished as of 1 July 2022.
2. Year of reference 2020.

Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/k1n89j

Table D7.2. Requirements for school heads' professional development (2021)

For lower secondary schools heads (general programmes) in public institutions

		Requirements for professional development compared to those of teachers	Requirements for professional development: Type of requirements	Requirements for professional development: Specific purposes or circumstances requiring compulsory professional development	Minimum duration of professional development required	Professional development planning is required	Professional development activities are planned in the context of individual school development priorities	Contents of professional development activities are specified
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
OECD	**Countries**							
	Australia	Different	Compulsory for specific purposes	m	m	Yes	Yes, but not exclusively	No, not mandated
	Austria	Same	Compulsory for all	a	15 hours per year	Yes	Yes, but not exclusively	Yes, contents specified
	Canada	m	m	m	m	m	m	m
	Chile	m	m	m	m	m	m	m
	Colombia	Same	Compulsory for specific purposes	Salary increase	144 hours	No	Yes, but not exclusively	No, not mandated
	Costa Rica	Same	Compulsory for all	a	m	No	No	No, but aligned with standards
	Czech Republic	Same	Compulsory for all	a	a	Yes	Yes, but not exclusively	No, not mandated
		Same	Compulsory for some	To conduct additional voluntary responsibilities	187.5 hours	Yes	Yes, but not exclusively	Yes, contents specified
	Denmark	Different	Not compulsory	a	a	a	a	a
	Estonia	Different	Compulsory for some	To align with school development strategy	a	Yes	Yes, exclusively	Others
	Finland	Different	Not compulsory	a	a	a	a	a
	France	Different	Compulsory for specific purposes	To initiate their responsibilities as school heads	154 hours	Yes	No	Yes, contents specified
	Germany	Same	Compulsory for all	a	a	No	Yes, but not exclusively	No, not mandated
	Greece	Same	Compulsory for all	a	a	Yes	No	Yes, contents specified
	Hungary	Same	Compulsory for all	a	90 hours every 7 years	Yes	Yes, but not exclusively	No, but aligned with standards
	Iceland	m	m	m	m	m	m	m
	Ireland	Different	Not compulsory	a	a	a	a	a
	Israel	Different	Compulsory for specific purposes	Salary increase	70 hours every year	Yes	Yes, but not exclusively	No, but aligned with standards
	Italy	Different	Not compulsory	a	a	a	a	a
	Japan	Different	Not compulsory	a	a	a	a	a
	Korea	Different	Compulsory for all	a	m	Yes	Yes, but not exclusively	m
	Latvia	Same	Compulsory for all	a	36 hours every 3 years	Yes	Yes, but not exclusively	No, but aligned with standards
	Lithuania	Different	Compulsory for specific purposes	Competencies for improvement based on an evaluation	m	No	Yes, but not exclusively	No, but aligned with standards
	Luxembourg	Different	Not compulsory	a	a	a	a	a
	Mexico	Same	Compulsory for specific purposes	Promotion	40 hours per year	Yes	No	Yes, contents specified
	Netherlands	Different	Not compulsory	a	a	a	a	a
	New Zealand	Same	Not compulsory	a	a	a	a	a
	Norway	Different	Not compulsory	a	a	a	a	a
	Poland	Same	Compulsory for specific purposes	Promotion	a	Yes	Yes, but not exclusively	No, not mandated
	Portugal	m	m	m	m	m	m	m
	Slovak Republic	Different	Compulsory for all	a	320 hours every 5 years	Yes	Yes, but not exclusively	Yes, contents specified
	Slovenia	Same	Compulsory for all	a	5 days per year	Yes	Yes, but not exclusively	No, not mandated
	Spain	Different	Compulsory for specific purposes	(1) Merits in the selection procedures ; (2) Salary increase	(1) 60 hours every 8 years; (2) 100 hours every 6 years	No	No	Yes, contents specified
	Sweden	Different	Compulsory for specific purposes	To continue working as school heads	a	Yes	No	Yes, contents specified
	Switzerland	m	m	m	m	m	m	m
	Türkiye	Same	Compulsory for all	a	30 hours per year	Yes	Yes, but not exclusively	No, not mandated
	United States	m	m	m	m	m	m	m
	Other participants							
	Flemish Comm. (Belgium)	Different	Not compulsory	a	a	a	a	a
	French Comm. (Belgium)	Different	Compulsory for specific purposes	Permanent appointment as school head	180 hours	a	No	Yes, contents specified
	England (UK)	Different	Not compulsory	a	a	a	a	a
	Scotland (UK)	Same	Compulsory for all	a	35 hours per year	Yes	Yes, but not exclusively	No, not mandated
Partner	**Brazil**	m	m	m	m	m	m	m

Note: Data on pre-primary, primary, lower secondary (vocational programmes) and upper secondary (general and/or vocational programmes) levels, as well as the tasks and responsibilities covered in the mandated contents for compulsory continuing professional development (CPD) activities (Columns 8 to 19) are available on line (see *StatLink* below). See *Definitions* and *Methodology* sections for more information.

Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/o7m8ku

Table D7.3. Quality assurance mechanisms implemented for teachers' professional development activities (2021)

For lower secondary teachers (general programmes) in public institutions

		Quality assurance mechanisms implemented					Information collected to monitor quality				
		Accreditation of providers of professional development activities	Qualification requirements for providers of professional development activities	Standards / frameworks for the contents of professional development activities	Specific guidelines on expected outcomes of professional development activities	Other	Participation rates	Completion rates	Number of certificates issued	Participant satisfaction	Other
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
OECD	**Countries**										
	Australia	m	No	Yes	No	m	m	m	m	m	m
	Austria	Yes	Yes	Yes	Yes	a	Yes	Yes	Yes	Yes	a
	Canada	m	m	m	m	m	m	m	m	m	m
	Chile	m	m	m	m	m	m	m	m	m	m
	Colombia	Yes	No	Yes	No	a	Yes	Yes	No	Yes	a
	Costa Rica	Yes	Yes	Yes	No	Yes (Model for evaluating activities)	Yes	Yes	Yes	Yes	a
	Czech Republic	Yes	Yes	Yes	No	a	No	No	No	No	a
	Denmark	Yes	No	No	No	m	Yes	No	No	No	m
	Estonia	No	Yes	Yes	Yes	a	No	No	No	Yes	a
	Finland	No	No	No	No	a	No	No	No	No	a
	France	Yes	Yes	Yes	Yes	a	Yes	Yes	Yes	Yes	a
	Germany	m	m	m	m	m	m	m	m	m	m
	Greece	Yes	Yes	Yes	Yes	a	Yes	Yes	No	Yes	a
	Hungary	No	No	No	Yes	Yes (Accreditation of professional development programme)	Yes	Yes	Yes	Yes	a
	Iceland	m	m	m	m	m	m	m	m	m	m
	Ireland	Yes	Yes	Yes	Yes	a	Yes	Yes	No	Yes	a
	Israel	Yes	Yes	Yes	Yes	a	Yes	Yes	Yes	Yes	a
	Italy	Yes	Yes	No	No	a	Yes	Yes	Yes	Yes	a
	Japan	a	m	m	m	m	Yes	No	No	m	m
	Korea	Yes	Yes	Yes	Yes	a	Yes	Yes	No	Yes	a
	Latvia	Yes	Yes	No	No	a	Yes	Yes	Yes	Yes	m
	Lithuania	Yes	Yes	Yes	Yes	a	No	No	No	No	Yes (A study consisting of self-evaluation and external evaluation)
	Luxembourg	Yes	Yes	Yes	Yes	a	Yes	Yes	Yes	Yes	a
	Mexico	Yes	Yes	Yes	Yes	a	No	No	Yes	Yes	a
	Netherlands	No	No	No	No	a	No	No	No	No	a
	New Zealand	Yes	Yes	Yes	Yes	a	Yes	Yes	Yes	Yes	Yes (Progress and impact reporting)
	Norway	No	No	Yes	Yes	a	Yes	Yes	a	Yes	a
	Poland	Yes	Yes	No	No	a	No	No	No	No	a
	Portugal	m	m	m	m	m	m	m	m	m	m
	Slovak Republic	Yes	Yes	Yes	Yes	a	Yes	Yes	Yes	Yes	a
	Slovenia	No	No	No	No	a	Yes	No	Yes	Yes	a
	Spain	Yes	Yes	Yes	No	a	Yes	Yes	Yes	Yes	a
	Sweden	No	No	No	No	a	Yes	Yes	Yes	Yes	a
	Switzerland	m	m	m	No	a	m	m	m	m	m
	Türkiye	Yes	Yes	Yes	Yes	a	Yes	Yes	Yes	Yes	a
	United States	m	m	m	m	m	m	m	m	m	m
	Other participants										
	Flemish Comm. (Belgium)	No	No	Yes	No	a	Yes	Yes	No	Yes	a
	French Comm. (Belgium)	No	Yes	Yes	Yes	a	Yes	Yes	No	Yes	a
	England (UK)	Yes	No	Yes	Yes	a	Yes	Yes	No	Yes	a
	Scotland (UK)	No	No	Yes	No	a	No	No	No	No	a
Partner	Brazil	m	m	m	m	m	m	m	m	m	m

		Purpose of collecting information				
		Monitoring levels of teacher participation in compulsory and non-compulsory professional development activities	Forecasting/assessing teachers' skills needs at the system level	Identifying and scaling up successful opportunities for professional development	Evaluating the effectiveness of formats and resources for professional development activities	Other
		(11)	(12)	(13)	(14)	(15)
OECD	**Countries**					
	Australia	m	m	m	m	m
	Austria	Yes	Yes	Yes	Yes	a
	Canada	m	m	m	m	m
	Chile	m	m	m	m	m
	Colombia	Yes	No	Yes	Yes	a
	Costa Rica	Yes	Yes	Yes	Yes	a
	Czech Republic	a	a	a	a	a
	Denmark	Yes	Yes	m	m	m
	Estonia	No	No	No	No	Yes (To improve future activities)
	Finland	a	a	a	a	a
	France	Yes	Yes	Yes	Yes	a
	Germany	m	m	m	m	m
	Greece	Yes	No	No	Yes	a
	Hungary	No	No	No	Yes	a
	Iceland	m	m	m	m	m
	Ireland	No	No	No	Yes	a
	Israel	Yes	Yes	Yes	Yes	a
	Italy	Yes	Yes	Yes	Yes	a
	Japan	m	No	No	No	m
	Korea	Yes	Yes	Yes	Yes	a
	Latvia	Yes	Yes	Yes	Yes	m
	Lithuania	Yes	No	Yes	Yes	a
	Luxembourg	Yes	Yes	Yes	Yes	a
	Mexico	No	No	Yes	Yes	No
	Netherlands	a	a	a	a	a
	New Zealand	Yes	Yes	Yes	Yes	Yes (Identifying outcomes and impacts of national education strategies and priorities)
	Norway	Yes	Yes	Yes	Yes	a
	Poland	a	a	a	a	a
	Portugal	m	m	m	m	m
	Slovak Republic	Yes	Yes	Yes	Yes	a
	Slovenia	No	No	No	No	Yes (Co-financing of professional development programmes)
	Spain	Yes	Yes	Yes	Yes	a
	Sweden	Yes	Yes	Yes	Yes	a
	Switzerland	m	m	m	m	m
	Türkiye	Yes	Yes	Yes	Yes	a
	United States	m	m	m	m	m
	Other participants					
	Flemish Comm. (Belgium)	No	No	Yes	Yes	a
	French Comm. (Belgium)	No	No	No	No	a
	England (UK)	Yes	Yes	Yes	Yes	a
	Scotland (UK)	a	a	a	a	a
Partner	Brazil	m	m	m	m	m

Note: Data on pre-primary, primary, lower secondary (vocational programmes) and upper secondary (general or vocational programmes) levels are available on line (see *StatLink* below). See *Definitions* and *Methodology* sections for more information.
Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/mvgp76

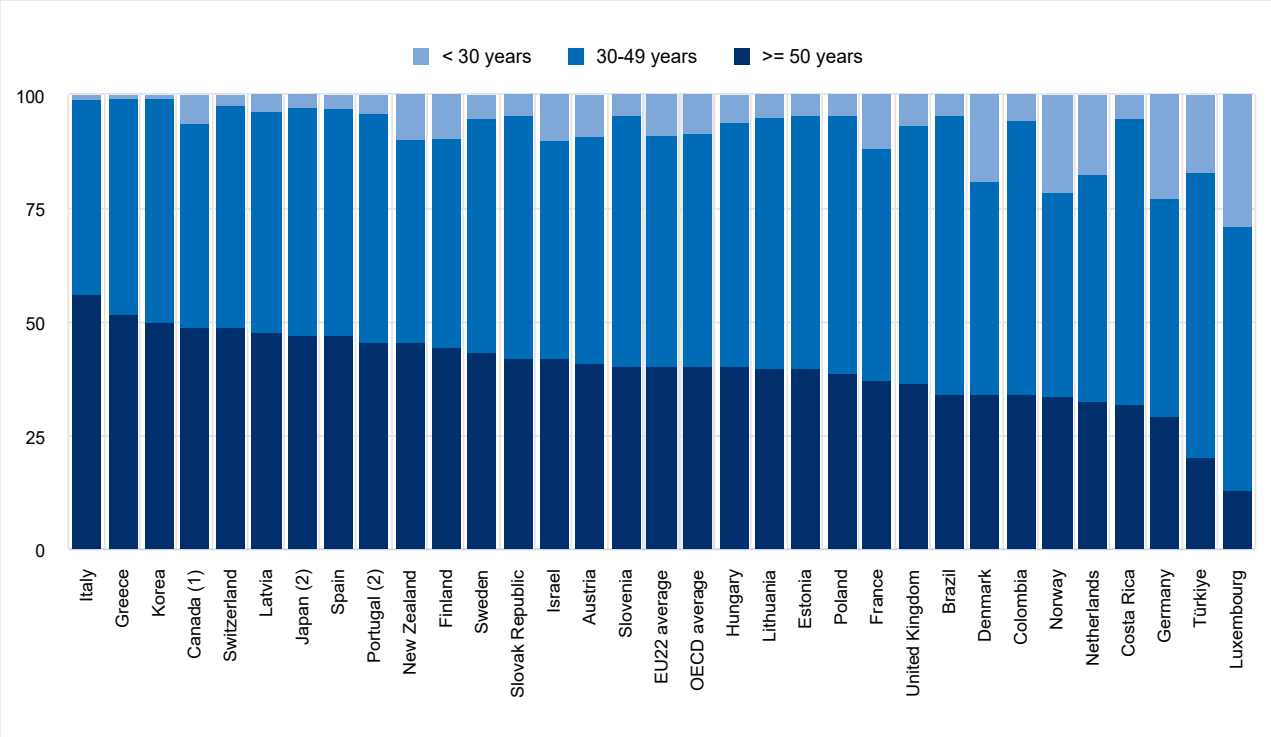
Indicator D8. What is the profile of academic staff and what is the student-academic staff ratio?

Highlights

- Across the OECD, the share of academic staff aged 50 or over has remained at 40% between 2015 and 2020. In Italy and Greece, more than half of the academic workforce are at least 50, which may have some significant implications for their capacity to replace retiring teachers in the near future.
- The representation of women among academic staff has been growing since 2005 in most OECD countries with available data, reaching 45% on average across OECD countries in 2020.
- The student-academic staff ratio is slightly lower in public institutions than in private institutions, with about 15 students per academic staff member in public institutions and 17 in private institutions on average across OECD countries.

Figure D8.1. Age profile of academic staff (2020)

In per cent



1. Public institutions only at tertiary level.
2. Post-secondary non-tertiary staff may teach at tertiary level - see Annex 3 for further details.

Countries are ranked in descending order of the share of academic staff aged 50 and over.

Source: OECD/UIS/Eurostat (2022), Table D8.2. See Source section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

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Context

The demand for academic staff across countries depends on a range of factors, including the workload models in use, the use of academic assistants and other non-classroom staff in institutions, and enrolment rates at different levels of education. In several OECD countries, a large proportion of the academic workforce are set to reach retirement age in the next decade. Combined with the pressure on higher education systems in many jurisdictions to play a greater role in upskilling and reskilling the adult population, and projected increases in demand driven by demographics in some countries, many systems face the need to recruit and train new staff. In addition, as men continue to predominate in certain academic fields and senior positions, many countries have developed policies to address barriers to women taking up academic careers and progressing in academia.

The student-academic staff ratio measures the academic resources that are available in a given country. At school, students are typically thought to be more likely to receive more support and attention when the student-teacher ratio is low. At the tertiary level, however, the interpretation of this indicator is affected by the definition and functions of academic staff as well as field specific teaching modes. Some may have limited academic responsibilities and could for example spend most of their time doing research (Box D8.2). In such cases, the student-academic staff ratio would not be representative of the level of support and attention students receive in the classroom (OECD, 2019[1]). However, the presence of research and teaching assistants whose primary role is to support academic staff in classroom or laboratory or in the conduct of research is also an additional resource. The ratio of students to academic staff may also affect staff working conditions and the quality of teacher-student interactions, which may in turn affect students' educational achivement.

The COVID-19 pandemic has accelerated the transition towards a digitalised education and shown the importance of technology when in-person learning is disrupted. Despite the virtual nature of this type of learning, it is vital to create effective and interactive teacher-student engagement as well as student-content engagement. In this regard, ensuring that a moderate ratio of students to academic staff for distance learning remains critical.

Other findings

- Young academic staff (under the age of 30) only account for a small proportion of the total: 7% in short-cycle tertiary education and 9% at bachelor's, master's and doctoral levels combined, on average across OECD countries. These young staff are usually entering academia, either during the preparation of their doctorate or directly after.
- Women are better represented among younger staff, accounting for about 50% of academic staff under 30 on average across OECD countries, a much larger share than among academic staff of all ages (45%).
- The largest difference in student-staff ratio between public and private institutions is in Brazil where, interestingly, the ratio is much higher in private institutions at 50 students per staff academic member, compared to 10 in public institutions.

Analysis

Age distribution of academic staff

The age distribution of the academic workforce varies considerably across countries and levels of tertiary education. It can be affected by a variety of factors, such as the level of development of tertiary institutions in the country, the size and age distribution of the population, the duration of tertiary education, and staff salaries and working conditions. Declining birth rates, for example, may drive down demand for new academic staff members, while more time spent in tertiary education can delay the entry of academic staff into the labour market. Competitive salaries, good working conditions for permanent staff, and career development opportunities may have attracted young people towards academic professions in some countries or helped to retain effective academic staff in others.

Young staff members (below the age of 30) only account for a small proportion of academic staff on average across OECD countries: 7% in short-cycle tertiary education and 9% at bachelor's, master's and doctoral level combined. At short-cycle tertiary level, young staff make up less than 10% of the academic workforce in all countries except for Costa Rica and New Zealand (Table D8.2). Young academic staff usually enter academia during their doctoral programme, or directly after. However, the inclusion of doctoral candidates within the category of academic staff is the subject of discussions across countries (Box D8.2).

On average across OECD countries, 40% of academic staff are aged 50 or over. However, there is a large degree of variation across countries, with the share ranging from 13% in Luxembourg (where the younger academic workforce is largely due to a quite recently established higher education system) to 56% in Italy (Table D8.2). A relatively large share of academic staff nearing retirement age indicates that tertiary systems are managing to retain prestigious senior scholars but may raise some concerns about the need to attract a large number of staff over the next decade. Having a relatively large share of older staff may raise some budgetary challenges due to salary structures for more senior staff and the lack of job opportunities for junior scholars (Kaskie, 2017[2]). Increasing competition in many fields for posts on the traditional academic career path combined with the trend towards project-based research funding has led to an increase in fixed-term contracts for researchers and deteriorating working conditions for early-career researchers.

The large adoption of digital technologies in higher education in recent years has highlighted the need to adjust the in-service training of teachers on digitalisation. In particular, greater support may be needed to equip tertiary teaching staff aged 50 and above with the necessary techno-pedagogical competencies they would need (Box D8.1).

Academics tend to have different retirement trajectories than other occupational groups. It takes them many years to develop their careers, they tend to have a lifelong commitment to their work, and they enter full-time positions later than many other professional groups (Sugar et al., 2005[3]). Among the factors that may affect the age profile of academic staff is legislation regulating the age of retirement (Eurydice, 2022[4]). However, many academics continue working even upon reaching retirement age, making it hard to predict actual retirement rates (Baldwin, Belin and Say, 2018[5]). In Italy, the country with the largest share of academic staff aged 50 or over (56%), retirement ages vary for different categories of academic staff. Full professors usually retire at the age of 70, and those who entered service before November 2005 are able to keep working for an additional two years. Associate professors retire at either 66 or 70 years old, depending on their starting date. In Greece, the other OECD country where more than half of the academic workforce are at least 50 years old (52%), the retirement age is set at 67 years (Eurydice, 2022[4]).

Box D8.1. Digitalisation is significantly affecting the organisation of academic work

Technology has significantly affected the educational environment as well as the roles of academic staff and learners. The model has shifted from one where the teacher is a pillar in the learning process to one where students take more responsibility for their own learning, using technology to access educational content and interact with classmates. Technology in education has affected all disciplines and redesigned learning spaces to varying degrees.

New research practices have emerged, leading researchers to adopt more open methods of disseminating and communicating their research findings. While alternative means of publishing research work have emerged in recent years, their use exploded with the COVID-19 pandemic. One of the most notable examples of practices that have expanded during the pandemic is the use of public preprint servers such as arXiv, which allow authors to publish their

manuscripts before submitting them to journals for peer review. Such tools have the advantage of overcoming the long publication delay resulting from peer review. In particular, the field of quantitative biology research (of relevance to the COVID-19 pandemic) has seen a 50% increase in the number of publications since the beginning of the pandemic, including publications authored by biologists using arXiv for the first time (Casey, Mandel and Ray, 2021[6]).

In the immediate crisis of the COVID-19 pandemic, tertiary institutions were forced to switch very quickly to distance learning wherever possible. Very little time was given to teachers to prepare, acquire or improve their information and communication technologies (ICT) skills. Having to manage online technologies for the first time highlighted some academic staff's lack of technological skills such as proficient computer use, specific communication skills in an online setting, proper use of various teaching and learning tools, and the need to solve specific problems quickly during learning sessions (Dwivedi et al., 2020[7]). In addition to coping with a new environment of virtual teaching, teachers were required to ensure the continuity of the quality of education, prepare digital materials, and maintain contact with all their students. As many institutions return to largely campus-based education, institutions and governments are keen to capitalise on and learn from this period of enforced digitalisation. This will require rethinking many areas of higher education policy and practice, to ensure that resource allocation models, infrastructure investments, staff competencies, pedagogical practices and student support systems are adapted to support high-quality teaching and learning regardless of the delivery mode.

Trends in academic staff's ages between 2015 and 2020

On average across OECD countries with available data, the share of academic staff aged 50 and older has remained constant at 40% over the past five years for all levels of tertiary education combined. Austria, Canada, Germany, Korea and Portugal saw increases of at least 4 percentage points over this period, although in Germany the share of academic staff aged 50 and older remains lower than the OECD average. In contrast, in Greece and Italy the share of older academic staff is already more than ten percentage points higher than on average across OECD countries (Table D8.2).

Less than one-third of countries with available data – Estonia, Finland, Hungary, Latvia, Luxembourg, Norway, the Slovak Republic, Slovenia and the United Kingdom – have experienced the opposite trend, and seen their academic workforce grow younger (Table D8.2). This may be explained, in part, by efforts to implement recruitment policies aimed at both national and international staff. Programmes such as the Dora Plus programme (focused on learning) and the Mobilitas programme (focused on R&D), largely funded by the EU, aim to raise awareness about employment opportunities among international researchers (and post-doctoral researchers) and support mobility through grants (OECD, 2019[8]). Similarly, the Research Council of Norway (RCN) has launched initiatives to increase an interest in research, such as the Science Knowledge Project for children (*Nysgjerrigper*), the Proscientia project (promoting interest in research and science among young people aged 12-21 years) and an Annual Science Week. The RCN also funds awards such as the Young Excellent Researchers award; applicants need to prove scientific quality, leadership skills, and international experience (OECD, 2019[8]).

Box D8.2. Classification of instructional and research academic staff

Academic staff include personnel whose primary assignment is instruction, research, or both instruction and research. Given the large variety of roles and responsibilities of academic staff members within higher education institutions, only a classification can help understand the specific dynamics of each group of academic staff and help provide policy-relevant recommendations.

Producing a one-size-fits-all categorisation of academic staff among all OECD countries is challenging due to differences in titles, levels of qualifications and the tasks, and responsibilities required for each position. In particular, whether doctoral candidates are full professional staff or students remains a central point of discussion among many countries. Indeed in some countries, such as Italy and the Slovak Republic, doctoral candidates have student status and cannot be employed by their respective tertiary institutions. Similarly, in the United Kingdom, doctoral candidates are not employees for the purpose of their doctoral studies (OECD/INES, 2021[9]).

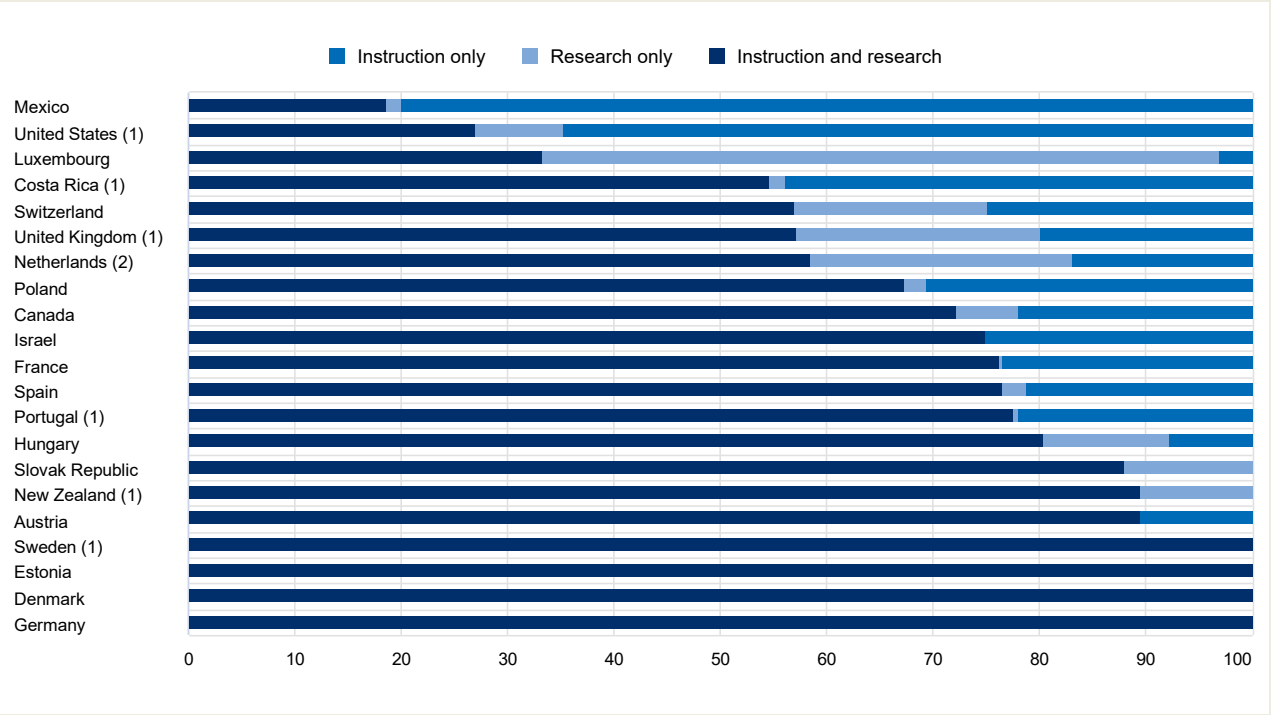
Even if they are considered to be employed, doctoral candidates can either be included within the group of academic staff or excluded from it, and countries' classifications in this regard remain heterogeneous. In Belgium, employed doctoral candidates support the work of senior staff and dedicate at least half of their working time to the preparation of their diploma, either through conducting research or receiving instruction. Other countries are more flexible and apply no

regulations on the research or instruction activities of academic staff. In the case of Germany, employed doctoral candidates are considered to be on an academic career track and their remuneration is aligned with that of junior academic staff. Similarly, in France, employed doctoral candidates who have teaching duties are considered full teachers. In Israel, the temporary status of employed doctoral candidates is the main distinction between them and junior research staff.

There are also significant differences in the distribution of academic staff between performing exclusively instructional or research duties or having to do both. In four countries, all academic staff hold both responsibilities at the same time. In countries where some staff have only one main function, academic staff are more likely to perform instruction tasks only, except in Hungary, Luxembourg and the United Kingdom, where the share of academic staff with only research duties is higher. Non-instructional staff (holding research only duties) represent less than 1% of academic staff in France and Portugal but exceed 63% in Luxembourg (Figure D8.2).

Figure D8.2. Distribution of academic staff by primary function (2020)

In per cent, full-time equivalent, for bachelor's, master's and doctoral levels combined



Note: This figure only includes countries where data for all categories are available or not applicable.
Please note that employed doctoral candidates are excluded from this figure.
1. Data cover all levels of tertiary education.
2. Data cover only academic institutions
Countries are ranked in ascending order of the share of instructional and research academic staff.
Source: OECD (2022), Feasibility survey on a classification of tertiary instructional and research personnel. See Source section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

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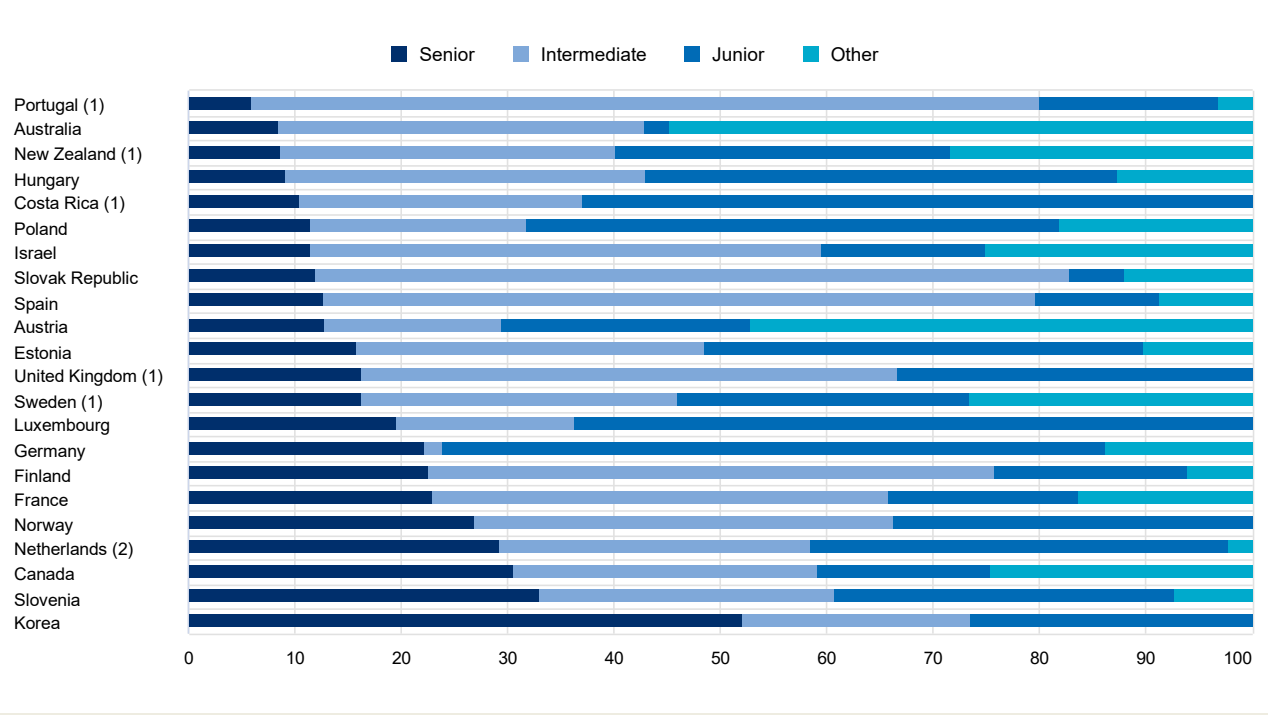
Seniority in academia refers to a combination of the level of competence and the types of tasks and responsibilities. Seniority can be divided into four levels – junior, intermediate, senior and other. *Junior* refers to entry grades/posts into which an individual would normally be recruited to begin their academic career. *Intermediate* includes academic staff pursuing an academic career working in positions below the top positions but more senior than entry-level positions. *Senior* refers to the highest grades/posts for academic staff pursuing an academic career. Lastly, the *other* category includes instructional and research personnel who are not considered to be on the academic career track and excludes doctoral candidates, teaching and research assistants.

The seniority of academic staff is one of the strongest determinants of contractual stability. Junior positions usually involve fixed-term or project-based contracts, whereas more advanced academic careers go hand in hand with more stable contractual arrangements (Eurydice, 2017[10]). In other words, young academics usually face periods of contractual uncertainty, while seniority generally brings an opportunity for permanent employment (Aarrevaara, Dobson and Wikstrom, 2015[11]). The term "research precariat" is used to describe postdoctoral researchers holding fixed-term positions without permanent or continuous employment prospects, and whose situation has worsened with the COVID-19 pandemic (OECD, 2021[12]).

The junior category makes up the largest share of academic staff in six countries: Costa Rica, Estonia, Germany, Hungary Luxembourg and Poland, while the intermediate category represents the largest share in almost half of the countries that submitted data. In Canada, Korea and Slovenia, senior staff make up the largest share of academic staff, peaking at 52% in Korea (Figure D8.3).

Figure D8.3. Distribution of instructional and research academic staff by seniority level (2020)

In per cent



Note: This figure only includes countries where data for all categories are available or not applicable.
Please note that employed doctoral candidates are excluded from this figure. Please also note that this figure displays data for instruction only, research only and instruction and research staff.
1. Data cover all levels of tertiary education.
2. Data cover only academic institutions
Countries are ranked in ascending order of the share of senior instructional and research academic staff
Source: OECD (2022), Feasibility survey on a classification of tertiary instructional and research personnel. See Source section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

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Gender profile of academic staff

Men make up the majority of academic staff across OECD countries. On average, women represent 45% of academic staff. The share of women among academic staff at all levels of tertiary education combined ranges from 30% in Japan to more

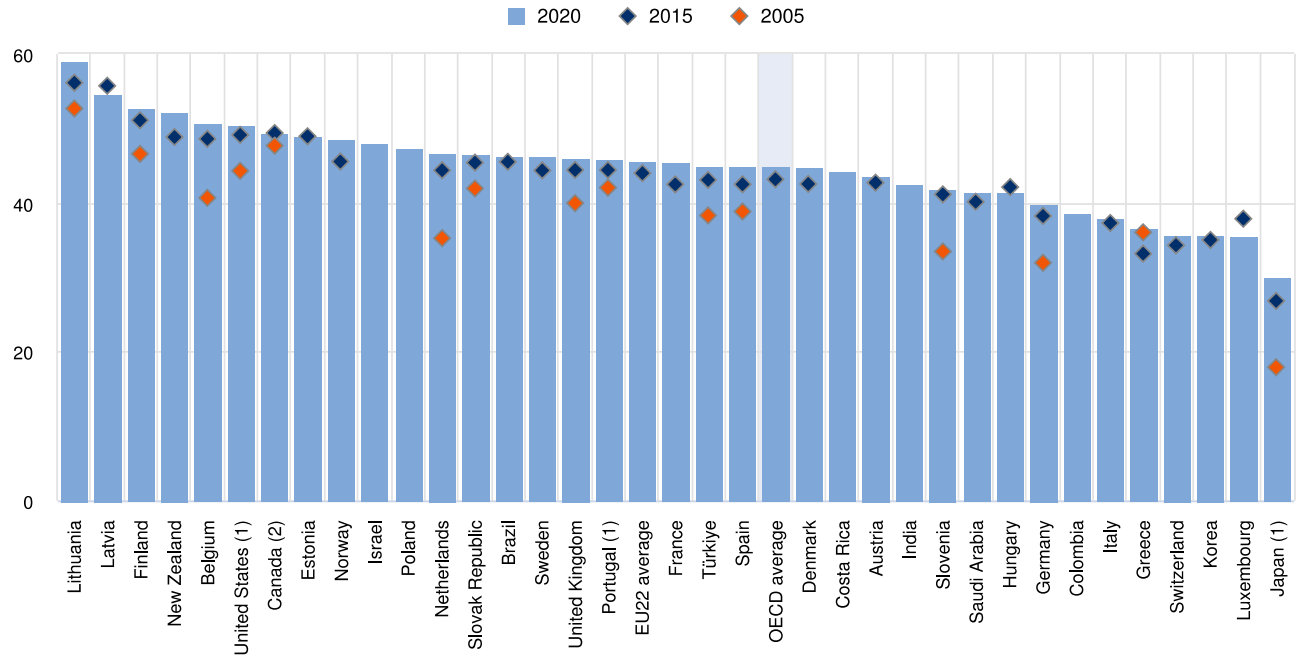
than 50% in Belgium (51%), Finland (53%), Latvia (55%), Lithuania (59%), New Zealand (52%) and the United States (51%) (Figure D8.4).

The gender profile of academic staff also varies across programmes within tertiary education. Women are more strongly represented in short-cycle tertiary programmes than in bachelor's, master's and doctoral programmes. Specifically, women make up less than 50 percent of the academic workforce at the bachelor's, master's and doctoral levels in over four-fifths of countries with available data, but more than 50 percent at the short-cycle tertiary level in about half of these countries. Women represent less than 50% of academic staff teaching at bachelor's, master's and doctoral level in all OECD countries with available data except Finland and Latvia (53%), Lithuania (59%) and New Zealand (52%) (Table D8.3).

Women are better represented among younger staff (those under 30), accounting for about 50% of academic staff on average across OECD countries. At country level, the same pattern is found in all countries except for Denmark, Finland, Latvia, Norway and Portugal. Among 30-49 year-olds, women represent 48% of academic staff across OECD countries on average but only 40% of academic staff aged 50 or older (Table D8.3 and *Education at a Glance Database*). This suggests that the oldest age group is driving the overall gender imbalance and that the future representation of women among academic staff in the OECD could increase if young female academic staff are retained. However, early-career female academics face the same challenges as ther male counterparts: precarious contracts and growing demand to produce articles to stay on the right career path, which may result in additional pressure if combined with family and household commitments.

Figure D8.4. Share of women among academic staff (2005, 2015, 2020)

In per cent



1. Post-secondary non-tertiary teachers may teach at tertiary level - see Annex 3 for further details.
2. Public institutions only at tertiary level.
Countries are ranked in descending order of the share of female teachers among tertiary teaching staff in 2020.
Source: OECD/UIS/Eurostat (2022), Table D8.3. See Source section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

StatLink https://stat.link/mgbu1a

Trends in the share of female academic staff between 2015 and 2020

Despite the current gender imbalance, the representation of women in tertiary education has been growing since 2005 in most OECD countries with available data (see *Education at a Glance Database*). Between 2015 and 2020, the average share of women among academic staff across OECD countries increased by 2 percentage points (from 43% to 45%). Among countries with available data, Japan and the Netherlands had the largest increase over this period: in Japan the share of women increased from 18% in 2005 to 30% in 2020, and in the Netherlands it increased from 35% to 47% (Figure D8.4 and Table D8.3).

Despite recent improvements, the gender imbalance in the academic profession is still a challenge in most OECD countries, starting among doctoral candidates and continuing through all academic career levels (European Commission, 2021[13]). Specifically, women remain under-represented in research and innovation careers. Across European countries, they account for only one-third of researchers (33%) and one-quarter of top academic staff (European Commission, 2021[13]), compared to nearly half of entrants at doctoral level (see Indicator B4). Female researchers are more likely than men to work under contract arrangements that are considered "precarious employment" and considerable pay gaps remain in scientific research and development occupations (European Commission, 2021[13]).

Women's careers and progress in academia are more likely to be constrained by family obligations and the lack of formal policies or programmes to reduce the gender gap (Winslow and Davis, 2016[14]). Recent policy efforts across OECD countries have aimed to bring about structural change to increase women's representation in academia. For example, the European Union has heavily invested in the Institutional Transformation for Effecting Gender Equality in Research (INTEGER) Project in order to improve the career paths of female researchers in European higher education and research institutions (European Commission, 2016[15]). In the United States, the National Science Foundation has funded research and interventions aiming at increasing the representation of women in academic science and engineering, including the ADVANCE Institutional Transformation grant programme (Winslow and Davis, 2016[14]). In Australia, the Universities Australia Strategy for Women (2011-14) aimed at encouraging universities to include equity targets in their strategic planning and promote women in academia (Winchester and Browning, 2015[16]). Most recently, Australian universities have implemented gender quotas, with some opening academic positions in the faculty of engineering, computer and mathematical sciences only to women (Pyke and White, 2018[17]). Despite these efforts, the continuing gender imbalance among academic staff in participation, working conditions and pay warrants further investments and research to close the gap in the future.

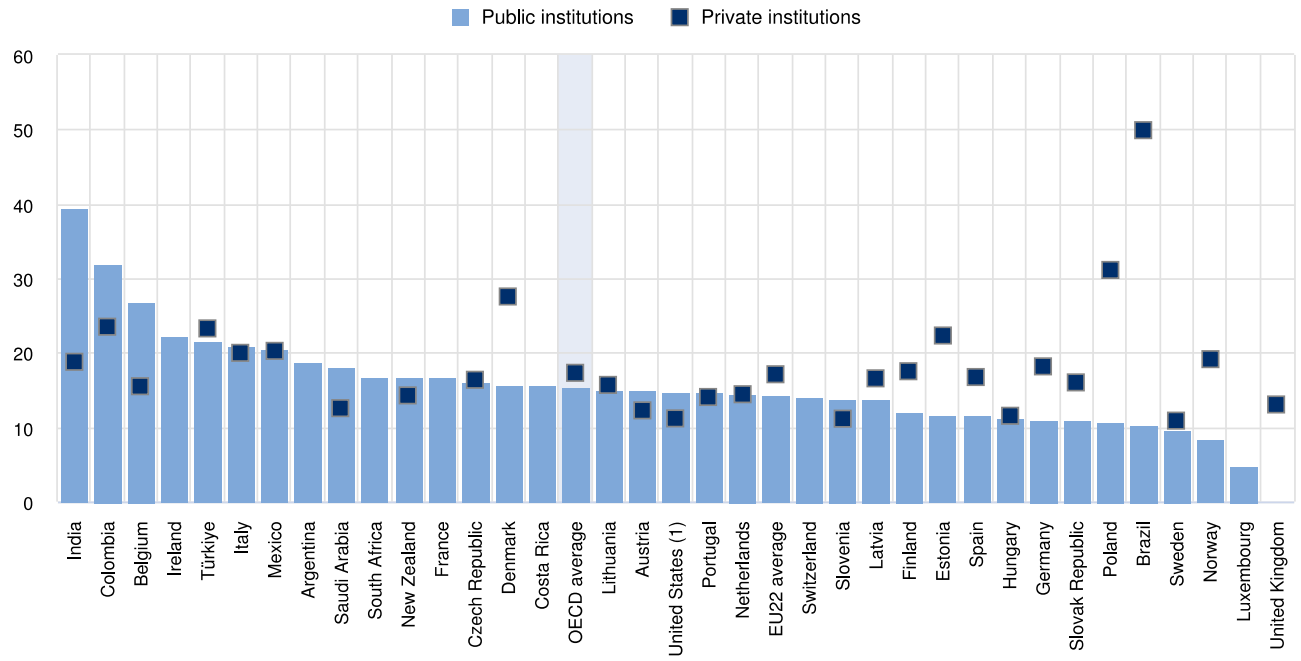
Ratio of students to academic staff across types of institution

At the tertiary level, there is little difference in student-staff ratios between public and private institutions on average across OECD countries, with 15 students per academic staff member in public institutions and 17 in private institutions (Table D8.1). The OECD average should be interpreted with caution, however, given the heterogeneity of institutional characteristics both within and across countries. Factors such as the structure, governance, mission and profile of higher education systems as well as the financial resources devoted to tertiary institutions may affect human resource levels of institutions.

In a few OECD countries, such as Norway and Poland, there are over twice as many students per academic staff members in private institutions as in public institutions. However, no more than 30% of tertiary students are enrolled in private institutions in either of these countries (see Indicator B1). The largest difference in student-academic staff ratios between public and private institutions is in Brazil where it is 50 to 1 in private institutions, compared to 10 to 1 in public institutions. In Brazil, about 75% of tertiary students are enrolled in private institutions, which are considered less selective than public institutions, and rely largely on distance learning, which may allow larger student-academic staff ratios. (OECD, 2018[18]). Brazilian students thus face either a performance barrier to accessing free but highly selective public institutions, or a financial barrier to accessing private institutions, which could limit their opportunities and raises significant equity concerns (McCowan, 2007[19]). The difference between public and private institutions is also significant in some other partner countries: in India and Indonesia, there are over twice as many students for each academic staff member in public institutions (40 to 1) as in private institutions (19 to 1) (Figure D8.5).

Differences in student-academic staff ratios between short-cycle tertiary and bachelor's, master's and doctoral or equivalent levels also vary across countries with available data (Table D8.1), but should be interpreted with caution, as the ratio remains a limited measure of the level of academic resources at tertiary level. Moreover, the relatively low levels of enrolment in short-cycle tertiary in some countries limits comparability with other levels (see Indicator B1).

Figure D8.5. Ratio of students to academic staff, by type of institution (2020)



1. Tertiary includes staff and students from post-secondary non-tertiary level.
Countries are ranked in descending order of the ratio of students to teaching staff in public institutions
Source: OECD/UIS/Eurostat (2022), Table D8.1. See Source section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

StatLink https://stat.link/shec76

At short-cycle tertiary level, the largest difference in the ratio of students to academic staff between public and private institutions is found in Colombia, where there are seven times more students per academic staff in public institutions than in private institutions. Short-cycle tertiary programmes which offer initial occupational preparation to students are a quite demanded tertiary qualification in Colombia and the public sector plays an important role in delivering education at that level of education, where 83% of short-cycle tertiary students are enrolled on average (see Indicator B1). At bachelor's, master's and doctoral programmes combined, the student-academic staff ratio is larger in public institutions than in private institutions in 6 countries, smaller in public institutions in 14 countries, and similar for both types of institution in 3 countries.

As short-cycle tertiary education usually provides a short-term vocational-oriented training in higher education, a lower ratio of students to academic staff might be expected than at bachelor's, master's and doctoral level. Even though this is not reflected in the average ratios across OECD countries in public and private institutions, in Belgium, there are over four times more students per academic staff member in public institutions at bachelor's, master's and doctoral level than in short-cycle tertiary. However, the pattern is reversed in other countries such as Colombia, Luxembourg, Norway and Türkiye where there are nearly twice as many students to academic staff in public institutions at short-cycle tertiary level than at bachelor's, master's and doctoral level (Table D8.1).

Definitions

There are two categories of instructional personnel:

- **Teachers' aides and teaching/research assistants** include personnel or students who support teachers in providing instruction to students.
- **Teaching staff** refers to personnel directly involved in teaching to students. The classification includes classroom teachers, special-education teachers and other teachers who work with a whole class of students in a classroom, in

small groups in a resource room, or in one-to-one teaching situations inside or outside a regular class. At the tertiary level, **academic staff** include personnel whose primary assignment is instruction or research, or both. Teaching staff also include departmental chairs whose duties include some teaching, but exclude non-professional personnel who support teachers in providing instruction to students, such as teachers' aides and other paraprofessional personnel.

Methodology

The ratio of students to academic staff is obtained by dividing the number of full-time equivalent students at a given level of education by the number of full-time equivalent academic staff at that level and in similar types of institutions.

For the ratio of students to academic staff to be meaningful, consistent coverage of personnel and enrolment data are needed. For instance, if academic staff in religious institutions are not reported in the personnel data, then students in those institutions must also be excluded.

For more information, please see *the OECD Handbook for Internationally Comparative Education Statistics 2018* (OECD, 2018[20]) and Annex 3 for country-specific notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

Source

Data refer to the academic year 2019/20 and are based on the UNESCO-UIS/OECD/Eurostat data collection on education statistics administered by the OECD in 2021 (for details, see Annex 3 at https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).

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Indicator D8 Tables

Tables Indicator D8. What is the profile of academic staff and what is the student-academic staff ratio?

Table D8.1	Ratio of students to academic staff by tertiary level of education and type of institution (2020)
Table D8.2	Age distribution of academic staff by tertiary level of education (2015, 2020)
Table D8.3	Share of women among academic staff, by tertiary level of education and age group (2015 and 2020)

StatLink https://stat.link/adfyhj

Cut-off date for the data: 17 June 2022. Any updates on data can be found on line at: at: http://dx.doi.org/10.1787/eag-data-en. More breakdowns can also be found at http://stats.oecd.org, *Education at a Glance Database*.

Table D8.1. Ratio of students to academic staff by tertiary level of education and type of institution (2020)

		Short-cycle tertiary				Bachelor's, master's and doctoral				All tertiary			
			Private institutions				Private institutions				Private institutions		
		Public institutions	All private institutions	Government-dependent private institutions	Independent private institutions	Public institutions	All private institutions	Government-dependent private institutions	Independent private institutions	Public institutions	All private institutions	Government-dependent private institutions	Independent private institutions
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
OECD	Countries												
	Australia	m	m	m	m	16	19	x(6)	x(6)	m	m	m	m
	Austria	8	9	x(2)	x(2)	17	13	x(6)	x(6)	15	12	x(10)	x(10)
	Belgium[1]	6	6	6	m	28	16	16	m	27	15	15	m
	Canada	m	m	m	m	21	m	m	m	m	m	m	m
	Chile	m	m	m	m	m	m	m	m	m	m	m	m
	Colombia	48	7	a	7	25	32	a	32	32	23	a	23
	Costa Rica	x(9)	m	a	m	x(9)	m	a	m	16	m	a	m
	Czech Republic	10	11	11	a	16	16	17	16	16	16	17	16
	Denmark	23	42	39	m	15	18	18	19	16	28	28	24
	Estonia	a	a	a	a	12	22	m	22	12	22	m	22
	Finland	a	a	a	a	12	18	18	a	12	18	18	a
	France	12	m	m	m	18	m	m	m	17	m	m	m
	Germany	11	13	x(2)	x(2)	11	18	x(6)	x(6)	11	18	x(10)	x(10)
	Greece	a	a	a	a	m	a	a	a	m	a	a	a
	Hungary	x(9)	x(10)	x(11)	x(12)	x(9)	x(10)	x(11)	x(12)	11	12	10	14
	Iceland	m	m	m	m	m	m	m	m	m	m	m	m
	Ireland	x(9)	m	a	m	x(9)	m	a	m	22	m	a	m
	Israel	m	m	m	m	16	16	15	33	m	m	m	m
	Italy	a	a	a	a	21	20	a	20	21	20	a	20
	Japan	m	m	a	m	m	m	a	m	m	m	a	m
	Korea	m	m	a	m	m	m	a	m	m	m	a	m
	Latvia	14	13	x(11)	13	a	18	x(11)	18	14	17	16	17
	Lithuania	a	a	a	a	15	16	a	16	15	16	a	16
	Luxembourg	12	a	a	a	5	a	a	a	5	a	a	a
	Mexico	x(9)	x(10)	a	x(12)	x(9)	x(10)	a	x(12)	20	20	a	20
	Netherlands	13	13	a	13	15	15	a	15	15	14	a	14
	New Zealand	16	13	13	85	17	16	16	3	17	14	14	59
	Norway	15	14	14	a	8	20	14	25	8	19	14	25
	Poland	8	a	a	a	11	31	a	31	11	31	a	31
	Portugal	x(9)	x(10)	a	x(12)	x(9)	x(10)	a	x(12)	15	14	a	14
	Slovak Republic	7	7	7	a	11	18	a	18	11	16	7	18
	Slovenia	17	11	40	9	14	11	9	15	14	11	10	12
	Spain	10	15	15	15	12	17	a	17	12	17	15	17
	Sweden	10	11	11	a	10	11	11	a	10	11	11	a
	Switzerland	a	a	a	a	14	m	m	m	14	m	m	m
	Türkiye	47	34	a	34	18	21	a	21	22	23	a	23
	United Kingdom	a	x(10)	x(11)	a	a	x(10)	x(11)	a	a	13	13	a
	United States[2]	x(9)	x(10)	a	x(12)	x(9)	x(10)	a	x(12)	15	11	a	11
	OECD average	16	m	17	m	15	18	15	m	15	17	15	21
	EU22 average	12	14	18	12	14	17	15	19	14	17	15	18
Partners	Argentina[3]	m	m	m	m	m	m	m	m	19	m	m	m
	Brazil	2	17	a	17	10	50	a	50	10	50	a	50
	China	m	m	m	m	m	m	m	m	m	m	m	m
	India	a	a	a	a	m	m	m	m	40	19	m	m
	Indonesia	a	a	a	a	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	15	11	m	m	18	13	m	m
	South Africa[3]	m	m	m	m	m	m	m	m	17	m	m	m
	G20 average	m	m	m	m	m	m	m	m	13	15	m	m

Note: See Definitions and Methodology sections for more information.
1. Data for short-cycle tertiary refer to the Flemish Community only.
2. Tertiary includes staff and students from post-secondary non-tertiary level.
3. Year of reference 2019.
Source: OECD/UIS/Eurostat (2022). See Source section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/pvw5x9

Table D8.2. Age distribution of academic staff by tertiary level of education (2015, 2020)

		2020									2015		
		Short-cycle tertiary			Bachelor's, master's and doctoral			All tertiary			All tertiary		
		< 30 years	30-49 years	> = 50 years	< 30 years	30-49 years	> = 50 years	< 30 years	30-49 years	> = 50 years	< 30 years	30-49 years	> = 50 years
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
OECD	Countries												
	Australia	m	m	m	4	57	40	m	m	m	m	m	m
	Austria	6	43	51	9	51	39	9	50	41	9	54	37
	Belgium [1]	9	62	29	m	m	m	m	m	m	m	m	m
	Canada [2]	9	45	47	3	45	51	6	45	49	9	47	45
	Chile	m	m	m	m	m	m	m	m	m	m	m	m
	Colombia	6	65	29	5	58	37	5	61	34	m	m	m
	Costa Rica	38	55	7	5	63	32	5	63	32	m	m	m
	Czech Republic	m	m	m	m	m	m	m	m	m	m	m	m
	Denmark	3	46	51	20	47	33	19	47	34	17	49	34
	Estonia	a	a	a	4	56	40	4	56	40	6	53	41
	Finland	a	a	a	9	46	45	9	46	45	6	45	49
	France	10	55	35	12	50	38	12	51	37	m	m	m
	Germany	4	41	55	23	48	29	23	48	29	25	50	25
	Greece	a	a	a	1	47	52	1	47	52	1	48	52
	Hungary	x(10)	x(11)	x(12)	x(10)	x(11)	x(12)	6	54	40	5	54	41
	Iceland	m	m	m	m	m	m	m	m	m	m	m	m
	Ireland	m	m	m	m	m	m	m	m	m	m	m	m
	Israel [3]	6	52	42	10	48	42	10	48	42	m	m	m
	Italy	a	a	a	1	43	56	1	43	56	1	43	56
	Japan [4]	6	51	43	2	50	48	2	50	47	3[d]	52[d]	45[d]
	Korea	1	53	45	1	48	51	1	49	50	2	57	41
	Latvia	3	50	47	4	49	48	4	49	48	6	45	49
	Lithuania	a	a	a	5	55	40	5	55	40	6	55	39
	Luxembourg	6	65	29	30	57	12	29	58	13	31	54	15
	Mexico	m	m	m	m	m	m	m	m	m	m	m	m
	Netherlands	6	50	44	18	50	32	17	50	33	19	47	33
	New Zealand	11	42	47	10	45	45	10	45	46	12	44	44
	Norway	9	44	47	22	45	33	21	45	34	16	44	39
	Poland	0	55	45	4	57	39	4	57	39	m	m	m
	Portugal [4]	x(10)	x(11)	x(12)	x(10)	x(11)	x(12)	4	50	46	4[d]	57[d]	39[d]
	Slovak Republic	5	44	51	4	54	42	4	54	42	6	50	45
	Slovenia	2	47	51	5	58	37	4	56	40	0	48	52
	Spain	5	56	39	2	48	49	3	50	47	2	54	44
	Sweden	5	52	43	5	51	43	5	51	43	5	52	43
	Switzerland	a	a	a	2	49	49	2	49	49	3	52	46
	Türkiye	10	75	15	18	61	21	17	63	20	23	60	17
	United Kingdom	x(10)	x(11)	x(12)	x(10)	x(11)	x(12)	6	57	37	6	52	42
	United States	m	m	m	m	m	m	m	m	m	m	m	m
	OECD average	7	52	40	9	51	40	8	52	40	9	51	40
	Average for countries with available data for both reference years							9	51	41	9	51	40
	EU22 average	5	51	44	9	51	40	9	51	40	9	50	41
Partners	Argentina	m	m	m	m	m	m	m	m	m	m	m	m
	Brazil	1	54	45	4	62	34	4	62	34	8	61	31
	China	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m	m	m	m	m	m	m
	G20 average	m	m	m	m	m	m	m	m	m	m	m	m

Note: See Definitions and Methodology sections for more information.
1. Data for short-cycle tertiary refer to the Flemish Community only.
2. Public institutions only at tertiary level.
3. Public institutions only at short-cycle tertiary level.
4. Post-secondary non-tertiary teachers may teach at tertiary level - see Annex 3 for further details.
Source: OECD/UIS/Eurostat (2022). See Source section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/w9ludv

Table D8.3. Share of women among academic staff, by tertiary level of education and age group (2015 and 2020)

Percentage of female teachers in public and private institutions

		2020									2015		
		Short-cycle tertiary			Bachelor's, master's and doctoral			All tertiary			All tertiary		
		All ages	< 30 years	> = 50 years	All ages	< 30 years	> = 50 years	All ages	< 30 years	> = 50 years	All ages	< 30 years	> = 50 years
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
OECD	Countries												
	Australia	m	m	m	48	51	45	m	m	m	m	m	m
	Austria	53	74	49	42	49	37	44	52	39	43	53	38
	Belgium [1]	84	79	85	49	61	46	51	62	48	49	65	44
	Canada [2]	54	63	48	44	51	40	49	60	44	49	58	45
	Chile	m	m	m	m	m	m	m	m	m	m	m	m
	Colombia	39	47	31	39	46	32	39	46	31	m	m	m
	Costa Rica	55	45	0	44	44	38	44	44	38	m	m	m
	Czech Republic	m	m	m	m	m	m	m	m	m	m	m	m
	Denmark	42	49	36	45	43	41	45	43	41	43	44	37
	Estonia	a	a	a	49	53	46	49	53	46	49	52	46
	Finland	a	a	a	53	45	52	53	45	52	51	46	51
	France	54	56	50	43	47	37	45	49	40	42	55	36
	Germany	32	31	33	40	45	32	40	45	32	38	45	27
	Greece	a	a	a	37	60	34	37	60	34	33	52	31
	Hungary	39	53	33	42	52	37	41	47	36	42	52	37
	Iceland	m	m	m	m	m	m	m	m	m	m	m	m
	Ireland	m	m	m	m	m	m	m	m	m	m	m	m
	Israel [3]	56	70	50	47	53	44	48	54	45	m	m	m
	Italy	a	a	a	38	53	34	38	53	34	37	56	33
	Japan [4]	50	57	48	25	35	22	30	45	27	27[d]	47[d]	23[d]
	Korea	45	71	34	34	63	23	36	65	25	35	67	21
	Latvia	63	69	68	53	52	52	55	54	55	56	55	53
	Lithuania	a	a	a	59	60	57	59	60	57	56	54	51
	Luxembourg	51	60	48	35	36	26	36	37	28	38	45	27
	Mexico	m	m	m	m	m	m	m	m	m	m	m	m
	Netherlands	52	61	43	47	49	38	47	49	38	44	51	34
	New Zealand	54	46	54	52	59	48	52	57	49	49	49	47
	Norway	41	33	34	49	46	46	48	46	46	46	41	43
	Poland	67	m	73	47	53	39	47	53	39	m	m	m
	Portugal [4]	x(7)	x(8)	x(9)	x(7)	x(8)	x(9)	46	44	41	44[d]	48[d]	38[d]
	Slovak Republic	61	50	60	46	57	43	47	56	44	45	57	41
	Slovenia	43	42	43	42	47	37	42	46	38	41	38	36
	Spain	51	55	49	43	52	37	45	53	39	42	60	36
	Sweden	45	46	43	46	48	44	46	48	44	44	48	42
	Switzerland	a	a	a	36	52	30	36	52	30	34	52	29
	Türkiye	42	55	27	46	54	33	45	54	33	43	53	30
	United Kingdom	x(7)	x(8)	x(9)	x(7)	x(8)	x(9)	46	48	42	44	49	40
	United States [4]	x(7)	m	m	x(7)	m	m	51	m	m	49	m	m
	OECD average	52	55	46	44	51	39	45	51	40	43	52	39
	Average for countries with available data for both reference years							45	51	40	43	51	38
	EU22 average	54	56	52	45	51	41	46	51	41	44	52	40
Partners	Argentina	m	m	m	m	m	m	m	m	m	m	m	m
	Brazil	48	0	47	46	52	43	46	52	43	45	50	42
	China	m	m	m	m	m	m	m	m	m	m	m	m
	India	a	a	a	m	m	m	42	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	29	m	m	42	m	m	42	m	m	40	m	m
	South Africa	m	m	m	m	m	m	m	m	m	m	m	m
	G20 average	m	m	m	m	m	m	m	m	m	m	m	m

Note: See Definitions and Methodology sections for more information.

1. Data for short-cycle tertiary refer to the Flemish Community only.
2. Public institutions only at tertiary level.
3. Public institutions only at short-cycle tertiary level.
4. Post-secondary non-tertiary teachers may teach at tertiary level - see Annex 3 for further details.

Source: OECD/UIS/Eurostat (2022). See Source section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3-D.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/cd7fta

Annexes

Annex 1. Characteristics of education systems

Tables Annex 1. Characteristics of education systems

Table X1.1	Typical graduation ages, by level of education (2020)
Table X1.2	Typical age of entry, by level of education (2020)
Table X1.3	School year and financial year used for the calculation of indicators, OECD countries
Table X1.4	School year and financial year used for the calculation of indicators, partner countries
Table X1.5	Starting and ending age of students in compulsory education, theoretical starting age and duration of education levels, and ages of entitlement to Early Childhood Education and Care (2020)

Note: All tables in Annex 1 are available on line, see the StatLink below

StatLink https://stat.link/3ha7ok

Table X1.1. Typical graduation ages, by level of education (2020)

The typical age refers to the age of the students at the beginning of the school year; students will generally be one year older than the age indicated when they graduate at the end of the school year. The typical age is used for the gross graduation rate calculation.

		Upper secondary		Post secondary non-tertiary		Tertiary								
						Short-cycle tertiary		Bachelor's or equivalent			Master's or equivalent			
		General programmes	Vocational programmes	General programmes	Vocational programmes	General programmes	Vocational programmes	First degree (3-4 years)	Long first degree (more than 4 years)	Second or further degree (following a bachelor's or equivalent programme)	Long first degree (at least 5 years)	Second or further degree (following a bachelor's or equivalent programme)	Second or further degree (following a master's or equivalent programme)	Doctoral or equivalent
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
OECD	**Countries**													
	Australia	17-18	18-32	a	18-37	19-24	18-30	20-23	22-25	22-34	a	23-26	29-44	26-35
	Austria	17-18	16-18	a	19-31	a	18-19	21-24	a	a	24-27	24-28	a	28-32
	Belgium	18-18	18-19	a	20-22	a	21-25	21-23	a	22-24	a	22-24	23-32	27-31
	Canada	17-18	19-34	m	m	a	20-24	22-24	22-24	22-29	22-26	24-29	24-29	29-34
	Chile	17-17	17-17	a	a	a	19-26	22-27	22-28	23-26	24-26	26-36	m	29-35
	Colombia	16-17	16-17	18-19	a	a	19-25	m	22-26	m	a	25-34	27-39	31-42
	Costa Rica	17-18	18-18	a	a	20-25	20-25	22-27	22-30	a	29-40	a	a	33-49
	Czech Republic	m	m	m	m	m	m	m	m	m	m	m	m	m
	Denmark	18-19	20-26	a	24-38	a	21-25	22-25	a	a	a	24-26	27-33	28-32
	Estonia	18-18	18-18	a	20-30	a	a	21-24	a	a	23-25	23-28	a	28-35
	Finland	19-20	18-26	a	32-46	a	a	23-26	a	a	26-28	25-30	30-41	29-37
	France	17-18	16-19	m	m	m	19-21	20-21	m	22-35	22-23	22-24	23-30	25-29
	Germany	18-19	19-22	20-23	21-24	a	22-28	20-24	a	24-30	21-25	24-27	24-27	28-32
	Greece	17-18	17-18	a	19-23	a	a	m	m	m	a	m	m	m
	Hungary	17-19	17-19	a	19-21	a	20-22	21-24	a	27-41	23-26	23-26	a	27-32
	Iceland	18-19	18-26	22-32	21-33	a	22-29	22-25	a	26-41	26-27	24-31	a	28-35
	Ireland	17-18	18-25	a	20-26	m	m	21-23	23-25	23-33	m	m	m	27-32
	Israel	17-18	17-18	m	m	m	m	24-29	27-29	24-36	m	27-36	m	31-38
	Italy	18-19	18-19	a	18-19	a	20-22	21-24	m	m	24-26	24-26	m	27-33
	Japan	17-17	17-17	18-18	18-18	19-19	20-21	22-22	a	a	24-24	23-23	m	26-26
	Korea	18-19	18-19	a	a	a	20-22	23-25	m	a	a	25-31	a	29-38
	Latvia	18-19	20-21	a	20-24	a	21-28	22-24	23-25	24-39	24-29	24-27	a	31-40
	Lithuania	17-18	19-20	a	19-26	a	a	21-22	a	22-31	23-24	24-26	27-29	28-32
	Luxembourg	17-19	18-20	a	21-30	a	21-23	22-24	a	a	a	23-28	25-31	28-32
	Mexico	17-18	17-18	a	a	a	20-22	20-24	m	a	a	23-26	a	24-28
	Netherlands	16-18	18-21	a	a	a	20-27	21-23	a	a	a	23-26		
	New Zealand	17-18	17-33	18-25	18-29	18-38	18-24	20-22	22-23	21-27	a	22-29	a	27-35
	Norway	18-18	18-21	a	20-34	22-26	21-26	21-24	a	24-30	23-27	23-28	23-28	28-37
	Poland	19-19	19-20	a	21-26	a	23-40	22-23	a	26-35	24-25	24-25	a	29-32
	Portugal	17-17	17-18	a	19-26	a	20-21	21-22	a	33-39	23-24	23-26	a	28-37
	Slovak Republic	18-18	18-19	a	19-26	a	20-23	21-22	a	a	24-25	23-24	24-31	26-30
	Slovenia	18-18	17-19	a	a	a	21-25	21-23	a	a	24-25	24-26	a	27-33
	Spain	17-17	17-21	a	22-36	a	19-23	21-23	a	a	22-25	22-26	27-32	27-36
	Sweden	18-18	18-18	19-24	19-33	21-28	21-28	22-26	a	a	24-26	24-29	a	28-34
	Switzerland	18-22	18-24	21-23	a	a	22-36	22-26	a	29-38	23-26	24-28	27-34	28-34
	Türkiye	17-17	17-17	a	a	a	19-24	22-24	a	a	23-24	24-29	a	30-35
	United Kingdom	15-17	16-19	a	a	19-25	18-30	20-22	22-24		a	22-25		25-32
	United States	17-17	a	a	19-22	20-21[d]	x	21-23	a	a	a	24-31[d]	x	26-32
Partners	**Argentina**[1]	18-20	18-20	m	m	22-24	22-24	22-24	22-24	m	a	24-26	m	27-29
	Brazil	17-18	17-18	a	18-27	m	18-19	21-27	a	m	a	24-31	a	28-35
	China	18-20	18-20	m	m	20-22	20-22	22-24	22-24	m	a	24-26	m	27-29
	India	16-18	16-18	m	m	21-23	21-23	21-23	21-23	m	23-25	23-25	m	28-30
	Indonesia[1]	19-21	19-21	m	m	20-22	20-22	23-25	23-25	m	a	25-27	m	28-30
	Saudi Arabia	18-20	18-20	m	m	20-22	20-22	22-24	22-24	m	24-26	24-26	m	28-30
	South Africa[1]	19-21	19-21	m	m	21-23	21-23	22-24	22-24	m	a	24-26	m	27-29

Note: The range of typical age contains at least 50% of the share of graduation rates.

1. Year of reference 2019.

Source: OECD/Eurostat/UIS (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/frcb0m

Table X1.2. Typical age of entry, by level of education (2020)

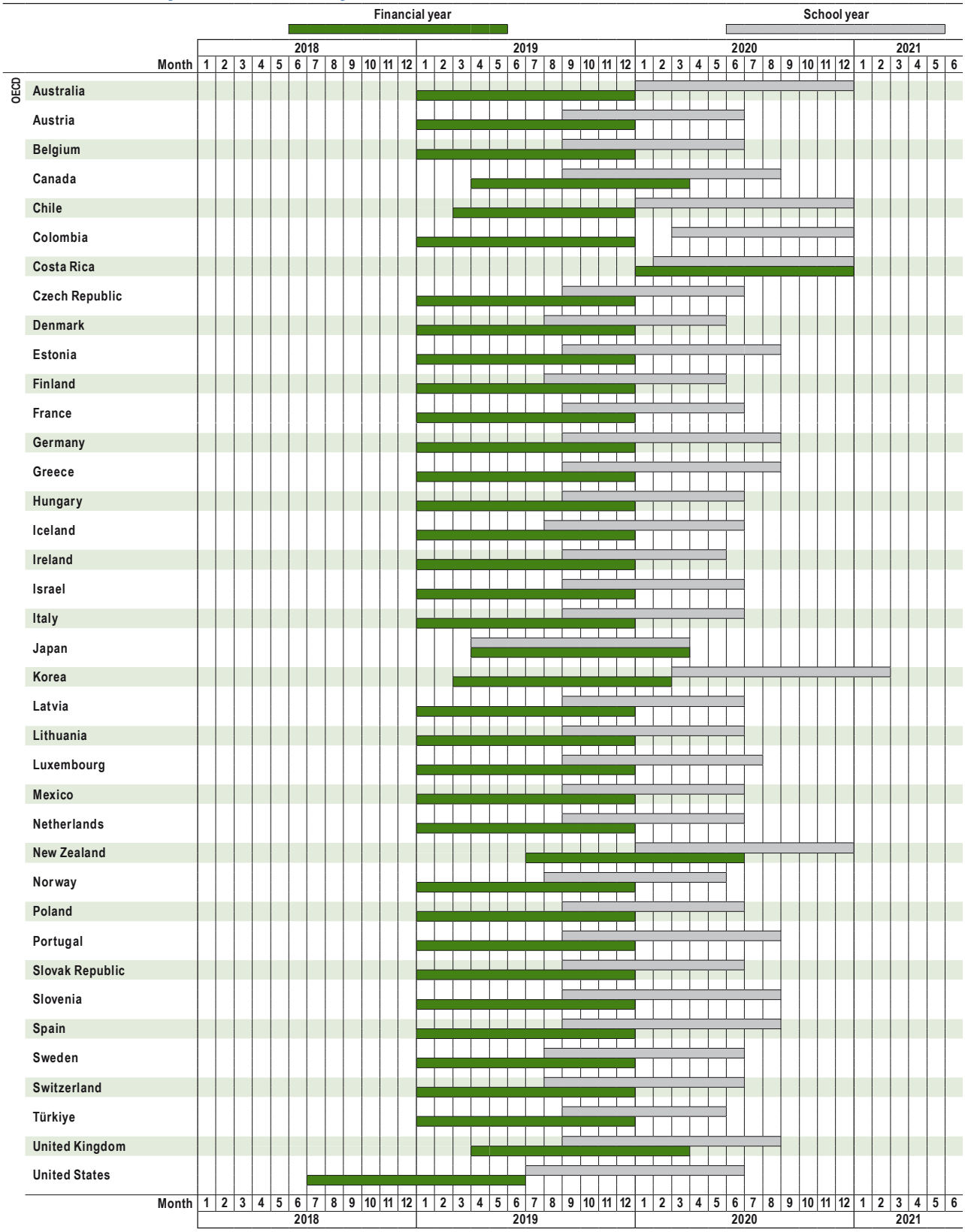
The typical age refers to the age of the students at the beginning of the school year

	Countries	Short-cycle tertiary (1)	Bachelor's or equivalent (2)	Master's or equivalent (3)	Doctoral or equivalent (4)
OECD	Australia	18-28	18-20	21-26	22-30
	Austria	17-18	18-21	22-26	25-29
	Belgium	19-21	18-20	21-23	23-27
	Canada	18-19	18-19	21-27	25-30
	Chile	18-21	18-19	18-31	25-32
	Colombia	17-21	17-20	24-34	30-41
	Costa Rica	17-21	18-19	23-42	32-48
	Czech Republic	19-21	19-20	22-24	24-28
	Denmark	19-27	20-22	23-25	24-29
	Estonia	a	19-20	19-25	24-29
	Finland	a	19-21	22-31	25-32
	France	18-20	18-20	20-23	23-26
	Germany	20-26	18-21	19-24	25-28
	Greece	a	18-19	22-28	23-32
	Hungary	19-21	19-20	19-23	24-28
	Iceland	20-32	19-21	23-30	25-34
	Ireland	18-32	18-19	22-28	22-28
	Israel	18-25	20-25	24-33	26-33
	Italy	19-20	19-19	19-23	24-27
	Japan	18-18	18-18	22-23	24-28
	Korea	18-18	18-18	22-28	23-32
	Latvia	19-24	19-22	19-25	24-31
	Lithuania	a	19-19	22-25	25-29
	Luxembourg	19-23	19-21	22-27	24-28
	Mexico	18-19	18-19	22-34	25-39
	Netherlands	19-23	18-20	22-24	23-27
	New Zealand	18-26	18-20	21-28	22-30
	Norway	20-24	19-20	19-24	25-31
	Poland	19-37	19-20	19-23	24-26
	Portugal	18-20	18-19	18-22	23-33
	Slovak Republic	19-21	19-20	22-23	24-27
	Slovenia	19-21	19-19	22-24	24-28
	Spain	18-20	18-18	18-24	23-30
	Sweden	19-27	19-22	19-24	24-30
	Switzerland	20-28	18-25	22-26	24-30
	Türkiye	18-22	18-20	22-28	25-30
	United Kingdom	17-29	18-21	21-30	21-30
	United States	18-22	18-19	22-28	22-27
Partners	Argentina[1]	m	m	22-24	24-26
	Brazil	m	m	m	m
	China	18-20	18-20	22-24	24-26
	India	18-20	18-20	21-23	23-25
	Indonesia[1]	19-21	19-21	23-25	25-27
	Saudi Arabia	18-20	18-20	22-24	25-27
	South Africa[1]	m	m	m	m

Note: The range of typical age contains at least 50% of the share of entry rates.
1. Year of reference 2019.
Source: OECD/Eurostat/UIS (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/qd1lhe

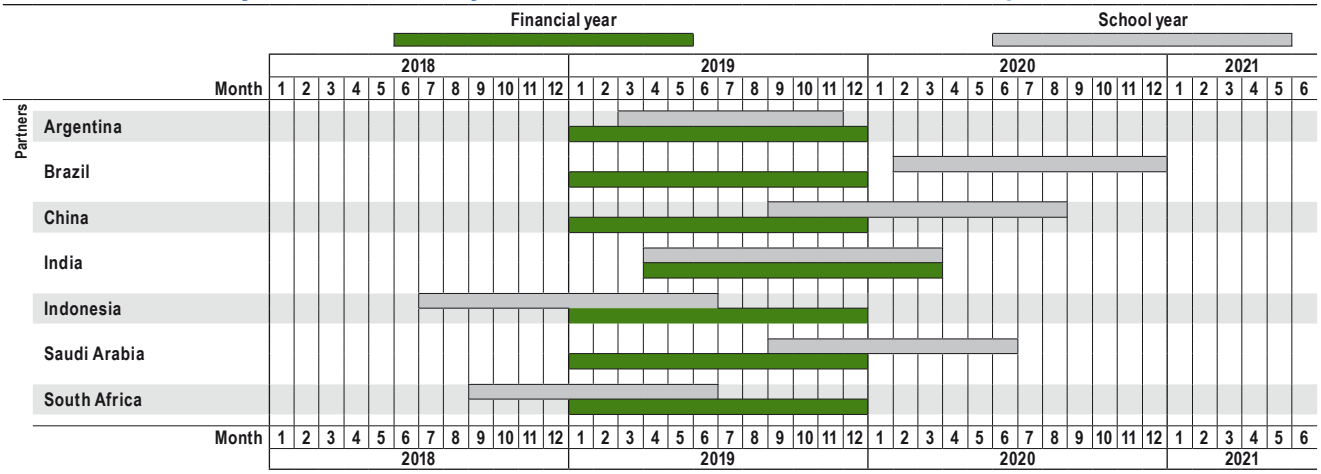
Table X1.3. School year and financial year used for the calculation of indicators, OECD countries



Source: OECD/Eurostat/UIS (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/an0gtd

Table X1.4. School year and financial year used for the calculation of indicators, partner countries



Source: OECD/Eurostat/UIS (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/m1tvby

Table X1.5. Starting and ending age of students in compulsory education, theoretical starting age and duration of education levels, and ages of entitlement to Early Childhood Education and Care (2020)

The age refers to the age of the students at the beginning of the school year

		Compulsory education		Entitlements to early childhood education and care		Theoretical starting age and duration									
						Early childhood educational development		Pre-primary education		Primary education		Lower secondary education		Upper secondary education	
		Starting age	Ending age	Starting age of universal entitlement	Starting age of free provision	Starting age	Duration	Starting age	Duration	Starting age	Duration	Starting age	Duration	Starting age	Duration
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
OECD	Countries														
	Australia	6	17	m	m	0	3	3	2	5	7	12	4	16	2
	Austria	6	15	m	5	0	3	3	3	6	4	10	4	14	4
	Belgium [1]	6	18	3	3	0	3	3	3	6	6	12	2	14	4
	Canada	6	16-18	0	5	0-2	1-3	3-5	1-3	6	6	12	3	15	2-3
	Chile	6	18	m	m	0	3	3	3	6	6	12	2	14	4
	Colombia	5	16	5	5	0	3	3	3	6	5	11	4	15	2
	Costa Rica	4	16	4	m	0	4	4	2	6	6	12	3	15	2
	Czech Republic	5	15	m	m	a	a	m	m	6	5	11	4	15	4
	Denmark	6	15	m	m	7 mo.	3	3	3	6	7	13	3	16	3
	Estonia	7	16	1	0	x(7)	x(8)	0 [d]	7 [d]	7	6	13	3	16	3
	Finland [2]	7	16	0	6	9 mo.	2	3	4	7	6	13	3	16	3
	France [3]	3	16	3	3	a	a	3	3	6	5	11	4	15	3
	Germany	6	18	1	m	0	3	3	3	6	4	10	6	16	3
	Greece	5	14-15	m	m	0	4	4	2	6	6	12	3	15	3
	Hungary	3	16	0	0	0	2.5	2.5	3.5	6	4	11	4	15	3-5
	Iceland	6	16	a	a	0	3	3	3	6	7	13	3	16	4
	Ireland	6	16	m	m	m	m	m	m	5	8	13	3	16	2
	Israel	3	17	3	3	0	3	3	3	6	6	12	3	15	3
	Italy	6	16	m	3	a	a	3	3	6	5	11	3	14	5
	Japan	6	15	3	3	a	a	3	3	6	6	12	3	15	3
	Korea	6	14	0	0	0	3	3	3	6	6	12	3	15	3
	Latvia	5	16	1	1	1.5	1.5	3	4	7	6	13	3	16	3
	Lithuania	7	16	0	0	0	3	3	4	7	4	11	6	17	2
	Luxembourg	4	16	m	m	a	a	m	m	6	6	12	3	15	4
	Mexico	3	17	m	m	0	3	3	3	6	6	12	3	15	3
	Netherlands	5	18	4	4	a	a	4	2	6	6	12	4	16	3
	New Zealand	5	16	m	5	0	3	3	2	5	6	11	4	15	3
	Norway	6	16	1	a	0	3	3	3	6	7	13	3	16	3
	Poland	6	15	3	3	a	a	3	4	7	4	11	4	15	4
	Portugal	6	18	m	m	0	3	3	3	6	6	12	3	15	3
	Slovak Republic	6	16	3	3	a	a	3	3	6	4	10	5	15	4
	Slovenia	6	14	0	m	11 mo.	2	3	3	6	6	12	3	15	4
	Spain	6	16	m	3	0	3	3	3	6	6	12	3	15	3
	Sweden	6	15	1	3	1	2	3	4	7	6	13	3	16	3
	Switzerland	4-5	15	4	4	a	a	4	2	6	6	12	3	15	4
	Türkiye	6	17	m	3	0	3	3	3	6	4	10	4	14	4
	United Kingdom	4-5	16	3	3	0	3	3	2	4-5	6	11	3	14	4
	United States	4-6	16-18	m	m	0	3	3	3	6	6	12	3	15	3
Partners	Argentina	4	17	m	m	m	m	3	3	6	6	12	3	15	3
	Brazil	4	17	0	4	0	4	4	2	6	5	11	4	15	3
	China	6	14	m	m	m	m	3	3	6	6	12	3	15	3
	India	6	13	m	m	m	m	3	3	6	5	11	3	14	4
	Indonesia	7	15	m	m	1	4	5	2	7	6	13	3	16	3
	Saudi Arabia	6	14	m	m	2	1	3	3	6	6	12	3	15	3
	South Africa	7	15	m	m	m	m	3	4	7	7	14	2	16	3

Note: The theoretical ages refer to the age of the students at the beginning of the school year except for the ending age of compulsory education which corresponds to the age at which compulsory schooling ends. For example, an ending age of 18 indicates that all students under 18 are legally obliged to participate in education. Since the ages indicated refer to the beginning of the school year, students may be older than the theoretical ending age at the end of the academic year.

1. Theoretical starting and ending ages for early childhood development refer to the Flemish Community only.
2. In 2015, Basic Education Act was revised and the participation of 6-year-olds in pre-primary education became mandatory. However, this is not encompassed by the Compulsory Education Act, which stipulates that compulsory education usually begins in the year when children turn 7 years old.
3. As of September 2020, 16-18-year-old students are required to train by several means: schooling, apprenticeship, training courses, civic service, and support or social and professional integration measures.

Source: OECD/Eurostat/UIS (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

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Annex 2. Reference statistics

Tables Annex 2. Reference statistics

Table X2.1	Basic reference statistics in current prices (reference period: calendar year, 2012, 2015, 2019)
Table X2.2	Basic reference statistics (reference period: calendar year, 2012, 2015, 2019)
Table X2.3	Pre-primary and primary teachers' statutory salaries, in national currencies, based on the most prevalent qualifications at different points in teachers' careers (2021)
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Note: All tables in Annex 2 are available on line, see the StatLink below

StatLink https://stat.link/dzf0ox

Table X2.1. Basic reference statistics in current prices (reference period: calendar year, 2012, 2015, 2019)

		Gross domestic product (GDP) (in millions of local currency, current prices)			Total government expenditure (in millions of local currency, current prices)		
		2012	2015	2019	2012	2015	2019
		(1)	(2)	(3)	(4)	(5)	(6)
OECD	Countries						
	Australia	1 518 129	1 640 476	1 963 547	558 406	621 964	826 060
	Austria	318 653	344 269	397 519	163 192	176 030	193 059
	Belgium	386 175	416 701	478 161	218 102	223 851	247 898
	Canada	1 787 348	1 993 784	2 251 054	762 378	812 749	957 831
	Chile	129 947 342	159 553 348	196 379 333	30 010 140	39 700 060	51 810 550
	Colombia	666 507 000	804 692 000	1 061 119 000	260 967 000	362 163 000	478 462 000
	Costa Rica	23 752 869	30 171 919	37 558 144	7 344 679	9 683 753	16 489 873
	Czech Republic	4 088 912	4 625 378	5 790 348	1 826 725	1 939 612	2 377 636
	Denmark	1 895 002	2 036 356	2 318 042	1 098 247	1 110 377	1 147 822
	Estonia	17 917	20 631	27 732	7 032	8 155	10 936
	Finland	201 037	211 385	239 852	111 456	119 415	127 809
	France	2 088 804	2 198 432	2 437 635	1 192 859	1 248 656	1 349 275
	Germany	2 745 310	3 026 180	3 473 350	1 233 138	1 335 789	1 562 698
	Greece	188 381	176 369	183 250	106 844	95 336	87 758
	Hungary	29 006 331	34 975 313	47 530 610	14 241 938	17 615 370	21 726 103
	Iceland	1 845 160	2 310 848	3 047 727	880 735	1 004 612	1 320 250
	Ireland	175 513	262 800	356 526	74 615	76 356	86 286
	Israel	996 437	1 166 354	1 418 449	409 036	450 209	561 277
	Italy	1 624 359	1 655 355	1 796 634	821 764	832 927	871 003
	Japan	498 205 350	523 616 325	556 843 150	201 286 500	208 962 800	216 309 300
	Korea	1 440 111 400	1 658 020 400	1 924 498 100	443 590 700	504 008 400	651 849 200
	Latvia	21 924	24 572	30 647	8 509	9 494	11 704
	Lithuania	33 410	37 346	48 860	12 088	13 133	16 985
	Luxembourg	46 526	54 142	62 704	19 454	21 861	26 887
	Mexico	15 817 755	18 572 109	24 453 296	4 512 039	5 237 532	6 617 355
	Netherlands	652 966	690 008	813 055	305 930	308 311	341 580
	New Zealand	217 489	255 340	322 015	92 128	99 598	131 634
	Norway [1]	2 294 241	2 614 084	3 062 973	1 283 758	1 533 194	1 837 063
	Poland	1 623 442	1 801 112	2 293 199	700 438	750 622	957 918
	Portugal	168 296	179 713	214 375	82 278	86 707	91 004
	Slovak Republic	73 361	79 888	94 048	30 276	36 508	38 241
	Slovenia	36 253	38 853	48 397	17 893	18 925	20 972
	Spain	1 031 099	1 077 590	1 244 375	501 688	472 962	524 037
	Sweden	3 743 086	4 260 470	5 049 619	1 908 381	2 101 671	2 478 653
	Switzerland	648 981	675 736	727 212	210 402	224 542	238 283
	Türkiye	1 581 479	2 350 941	4 317 787	525 252	746 115	1 540 060
	United Kingdom	1 682 471	1 890 925	2 194 606	780 883	811 298	909 900
	United States	15 926 851	17 878 355	20 949 871	6 515 364	6 910 907	8 166 360
Partners	Argentina	2 637 914	5 954 511	21 447 250	971 317	2 463 160	8 220 030
	Brazil	4 814 760	5 995 787	7 389 131	1 792 430	2 307 300	2 763 320
	China	53 858 000	68 885 820	99 086 510	15 178 680	21 873 920	33 799 540
	India	99 440 131	137 718 739	203 510 129	27 210 650	37 265 270	55 050 870
	Indonesia	8 615 704 500	11 526 332 800	15 832 657 200	1 622 837 250	2 014 591 080	2 593 822 990
	Saudi Arabia	2 759 906	2 453 512	2 973 626	917 198	1 001 290	1 059 000
	South Africa	3 253 852	4 049 884	5 077 625	1 020 650	1 333 490	1 777 580

Note: For countries where GDP is not reported for the same reference period as data on educational finance, GDP is estimated as: wt-1 (GDPt - 1) + wt (GDPt), where wt and wt-1 are the weights for the respective portions of the two reference periods for GDP which fall within the educational financial year. Adjustments were made in Chapter C for Australia, Canada, Japan, New Zealand, the United Kingdom and the United States.

1. The GDP mainland market value is used for Norway.

Source: OECD/UIS/Eurostat (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/islmxw

Table X2.2. Basic reference statistics (reference period: calendar year, 2012, 2015, 2019)

		Purchasing power parity for GDP (PPP) (USD = 1)			Population (in thousands)			GDP deflator (2015 = 100)		
		2012	2015	2019	2012	2015	2019	2012	2015	2019
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
OECD	Countries									
	Australia	1.5	1.5	1.5	22 734	23 816	25 366	99.8	100.0	111.2
	Austria	0.8	0.8	0.8	8 426	8 630	8 878	94.1	100.0	106.4
	Belgium	0.8	0.8	0.8	11 107	11 274	11 489	96.5	100.0	107.2
	Canada	1.2	1.2	1.2	34 714	35 703	37 601	97.3	100.0	106.9
	Chile	347.2	391.2	408.0	17 450	18 045	19 038	88.2	100.0	114.2
	Colombia	1 215.7	1 289.3	1 343.6	45 254	46 819	48 911	93.7	100.0	120.3
	Costa Rica	343.9	354.0	331.2	4 651	4 830	5 055	86.6	100.0	110.0
	Czech Republic	13.3	12.9	12.7	10 509	10 543	10 669	95.2	100.0	109.2
	Denmark	7.6	7.3	6.8	5 591	5 682	5 817	97.7	100.0	103.0
	Estonia	0.5	0.5	0.6	1 325	1 313	1 325	92.4	100.0	113.6
	Finland	0.9	0.9	0.9	5 414	5 481	5 522	94.4	100.0	104.5
	France	0.8	0.8	0.7	65 651	66 581	67 624	97.5	100.0	103.4
	Germany	0.8	0.8	0.8	80 426	81 687	83 093	94.5	100.0	107.0
	Greece	0.7	0.6	0.6	11 045	10 821	10 722	104.4	100.0	99.8
	Hungary	125.6	132.6	145.1	9 920	9 843	9 771	91.3	100.0	115.8
	Iceland	137.0	142.0	145.0	321	331	361	88.7	100.0	110.8
	Ireland	0.8	0.8	0.8	4 597	4 696	4 927	92.0	100.0	106.7
	Israel	4.0	3.9	3.9	7 907	8 377	9 050	95.3	100.0	103.4
	Italy	0.7	0.7	0.7	60 191	60 230	59 729	97.1	100.0	103.9
	Japan	104.3	103.5	104.3	127 552	127 110	126 167	96.7	100.0	101.0
	Korea	854.9	857.5	864.6	50 200	51 015	51 709	95.1	100.0	103.9
	Latvia	0.5	0.5	0.5	2 034	1 977	1 913	96.4	100.0	110.7
	Lithuania	0.5	0.4	0.5	2 988	2 905	2 794	97.9	100.0	112.5
	Luxembourg	0.9	0.9	0.9	532	569	622	93.0	100.0	103.4
	Mexico	7.9	8.3	9.7	116 885	120 846	125 783	91.7	100.0	123.2
	Netherlands	0.8	0.8	0.8	16 755	16 940	17 345	97.7	100.0	107.4
	New Zealand	1.5	1.5	1.4	4 418	4 638	5 013	94.1	100.0	109.5
	Norway[1]	9.0	9.9	10.0	5 019	5 190	5 348	93.0	100.0	109.2
	Poland	1.8	1.8	1.8	38 534	38 455	38 386	98.2	100.0	106.7
	Portugal	0.6	0.6	0.6	10 515	10 358	10 286	95.2	100.0	107.0
	Slovak Republic	0.5	0.5	0.5	5 406	5 422	5 453	99.9	100.0	105.3
	Slovenia	0.6	0.6	0.6	2 057	2 063	2 089	97.0	100.0	106.8
	Spain	0.7	0.7	0.6	46 766	46 410	47 105	99.3	100.0	104.2
	Sweden	8.7	8.9	9.0	9 519	9 799	10 279	95.4	100.0	108.9
	Switzerland	1.4	1.2	1.2	7 997	8 282	8 575	101.8	100.0	99.7
	Türkiye	1.0	1.2	1.9	75 176	78 218	82 579	81.2	100.0	159.2
	United Kingdom	0.7	0.7	0.7	63 705	65 110	66 797	95.8	100.0	108.0
	United States	1.0	1.0	1.0	314 212	320 918	328 527	95.5	100.0	107.3
Partners	Argentina	3.2	6.9	21.1	41 733	43 132	44 939	45.4	100.0	375.0
	Brazil	1.6	2.0	2.3	198 315	203 476	210 147	80.2	100.0	122.1
	China	3.6	3.9	4.2	1 354 040	1 374 620	1 410 080	96.9	100.0	111.1
	India	16.2	19.2	21.3	1 235 000	1 283 000	1 367 600	89.1	100.0	115.3
	Indonesia	3 569.9	4 353.3	4 751.9	245 425	255 462	266 912	86.9	100.0	112.7
	Saudi Arabia	1.7	1.6	1.8	28 989	31 154	34 218	124.7	100.0	116.9
	South Africa	5.1	5.8	6.7	52 275	54 433	58 775	84.9	100.0	122.0

1. GDP deflator mainland figures are used for Norway.

Source: OECD/UIS/Eurostat (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3.pdf).

StatLink https://stat.link/p2grkx

Table X2.3. Pre-primary and primary teachers' statutory salaries, in national currencies, based on the most prevalent qualifications at different points in teachers' careers (2021)

Annual salaries in public institutions

		Pre-primary				Primary			
		Starting salary	Salary after 10 years of experience	Salary after 15 years of experience	Salary at top of scale	Starting salary	Salary after 10 years of experience	Salary after 15 years of experience	Salary at top of scale
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
OECD	**Countries**								
	Australia	72 074	104 901	107 927	111 664	72 410	103 353	105 726	114 552
	Austria	m	m	m	m	39 172	42 216	47 041	68 469
	Canada	m	m	m	m	54 201	91 488	93 611	93 611
	Chile	m	m	m	m	m	m	m	m
	Colombia [1]	34 696 391	63 276 168	63 276 168	72 767 531	34 696 391	63 276 168	63 276 168	72 767 531
	Costa Rica	9 342 667	10 974 367	11 790 217	14 237 767	9 435 183	11 083 403	11 907 513	14 379 843
	Czech Republic	354 000	368 400	378 000	420 000	379 200	403 200	421 200	496 800
	Denmark	356 828	404 768	404 768	404 768	411 355	456 645	473 443	473 443
	Estonia	a	a	a	a	15 780	a	a	a
	Finland [2]	30 002	32 714	33 025	33 025	34 197	39 455	42 221	44 754
	France	26 839	30 961	32 948	47 629	26 839	30 961	32 948	47 629
	Germany	m	m	m	m	54 129	62 293	66 145	70 749
	Greece	13 104	15 936	17 352	25 848	13 104	15 936	17 352	25 848
	Hungary	2 890 800	3 255 714	3 496 878	4 943 862	2 890 800	3 255 714	3 496 878	4 943 862
	Iceland	6 854 066	6 968 786	7 301 174	7 474 910	6 854 066	6 968 786	7 301 174	7 474 910
	Ireland	a	a	a	a	37 692	57 515	63 474	73 211
	Israel	113 227	144 365	161 062	278 454	100 195	127 131	143 124	233 115
	Italy	24 297	26 639	29 162	35 373	24 297	26 639	29 162	35 373
	Japan	m	m	m	m	3 384 000	4 794 000	5 601 000	6 930 000
	Korea	33 010 320	49 828 660	58 222 300	92 657 400	33 010 320	49 828 660	58 222 300	92 657 400
	Latvia	9 480	a	a	a	9 480	a	a	a
	Lithuania	15 781	16 291	18 118	20 624	15 781	16 291	18 118	20 624
	Luxembourg	69 076	89 338	100 850	122 033	69 076	89 338	100 850	122 033
	Mexico	230 295	290 446	364 137	458 622	230 295	290 446	364 137	458 622
	Netherlands	38 413	50 882	59 733	71 916	38 413	50 882	59 733	71 916
	New Zealand	m	m	m	m	55 948	85 490	85 490	85 490
	Norway	411 400	501 400	501 400	506 400	451 600	538 500	538 500	578 600
	Poland	37 941	50 744	61 952	64 578	37 941	50 744	61 952	64 578
	Portugal	22 374	27 226	28 886	48 296	22 374	27 226	28 886	48 296
	Slovak Republic	8 862	10 110	10 350	11 580	10 980	12 342	12 642	14 142
	Slovenia	19 777	23 494	29 644	34 258	19 777	24 355	30 752	36 895
	Spain	30 992	33 649	35 862	44 248	30 992	33 649	35 862	44 248
	Sweden [1, 3, 4]	397 200	416 298	420 144	462 672	402 000	447 300	463 200	534 000
	Switzerland	74 500	92 700	m	114 000	80 500	100 100	m	122 400
	Türkiye	87 567	90 164	88 961	95 513	87 567	90 164	88 961	95 513
	United States [4]	42 381	55 291	63 625	79 478	42 723	56 582	63 531	74 214
	Other Participants								
	Flemish Comm. (Belgium)	33 988	42 620	47 983	60 495	33 988	42 620	47 983	60 495
	French Comm. (Belgium)	32 737	40 908	46 043	56 314	32 737	40 908	46 043	56 314
	England (UK)	26 697	a	42 833	42 833	26 697	a	42 833	42 833
	Scotland (UK)	32 994	41 412	41 412	41 412	32 994	41 412	41 412	41 412
Partners	Argentina	330 997	m	m	m	321 410	m	m	m
	Brazil [5]	34 103	m	m	m	34 103	m	m	m
	China	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m
	Saudi Arabia	84 600	m	m	m	84 600	m	m	m
	South Africa	m	m	m	m	391 188	m	m	m

Note: The definition of teachers' most prevalent qualifications is based on a broad concept, including the typical ISCED level of attainment and other criteria. The most prevalent qualification is defined for each of the four career stages included in this table. In many cases, the minimum qualification is the same as the most prevalent qualification; see Table X3.D3.2 in Annex 3. Please see Annex 2 and Definitions and Methodology sections for more information. Data and more breakdowns available at http://stats.oecd.org, Education at a Glance Database.

1. Year of reference 2020.
2. Data on pre-primary teachers include the salaries of kindergarten teachers, who are the majority.
3. Excludes the social security contributions and pension-scheme contributions paid by the employees.
4. Actual base salaries.
5. Year of reference 2019.

Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/khox7d

Table X2.4. Secondary teachers' statutory salaries, in national currencies, based on the most prevalent qualifications at different points in teachers' careers (2021)

Annual salaries in public institutions

		Lower secondary, general programmes				Upper secondary, general programmes			
		Starting salary	Salary after 10 years of experience	Salary after 15 years of experience	Salary at top of scale	Starting salary	Salary after 10 years of experience	Salary after 15 years of experience	Salary at top of scale
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
OECD	**Countries**								
	Australia	72 408	103 110	105 467	114 735	72 408	103 110	105 467	114 735
	Austria	39 055	44 145	49 313	73 136	39 106	47 751	53 661	77 723
	Canada	54 201	91 488	93 611	93 611	54 201	91 488	93 611	93 611
	Chile	m	m	m	m	m	m	m	m
	Colombia [1]	34 696 391	63 276 168	63 276 168	72 767 531	34 696 391	63 276 168	63 276 168	72 767 531
	Costa Rica	9 723 350	11 423 090	12 272 960	14 822 570	9 723 350	11 423 090	12 272 960	14 822 570
	Czech Republic	379 200	404 400	422 400	500 400	379 200	404 400	422 400	499 200
	Denmark	413 442	462 287	478 005	478 005	384 929	500 239	500 239	500 239
	Estonia	15 780	a	a	a	15 780	a	a	a
	Finland	36 734	42 383	45 353	48 075	38 824	46 618	48 944	51 881
	France [2]	29 382	33 503	35 490	50 424	29 382	33 503	35 490	50 424
	Germany	60 163	68 440	71 991	78 521	62 926	71 103	74 610	85 589
	Greece	13 104	15 936	17 352	25 848	13 104	15 936	17 352	25 848
	Hungary	2 890 800	3 255 714	3 496 878	4 943 862	2 890 800	3 617 460	3 885 420	5 493 180
	Iceland	6 854 066	6 968 786	7 301 174	7 474 910	6 433 240	7 055 299	7 758 963	7 758 963
	Ireland	37 692	59 573	64 096	73 833	37 692	59 573	64 096	73 833
	Israel	100 673	131 165	154 060	243 843	118 565	137 881	166 815	239 224
	Italy	26 114	28 843	31 707	38 843	26 114	29 530	32 588	40 597
	Japan	3 384 000	4 794 000	5 601 000	6 930 000	3 384 000	4 794 000	5 601 000	7 112 000
	Korea	33 070 320	49 888 660	58 282 300	92 717 400	33 070 320	49 888 660	58 282 300	92 717 400
	Latvia	9 480	a	a	a	9 480	a	a	a
	Lithuania	15 781	16 291	18 118	20 624	15 781	16 291	18 118	20 624
	Luxembourg	78 286	97 857	107 988	136 079	78 286	97 857	107 988	136 079
	Mexico	292 733	369 625	465 340	583 739	579 952	668 319	713 164	713 164
	Netherlands	40 723	61 922	71 036	83 117	40 723	61 922	71 036	83 117
	New Zealand	55 948	85 490	85 490	85 490	55 948	85 490	85 490	85 490
	Norway	451 600	538 500	538 500	578 600	533 600	590 000	590 000	652 900
	Poland	37 941	50 744	61 952	64 578	37 941	50 744	61 952	64 578
	Portugal	22 374	27 226	28 886	48 296	22 374	27 226	28 886	48 296
	Slovak Republic [3]	10 980	12 342	12 642	14 142	10 980	12 342	12 642	14 142
	Slovenia [3]	19 777	24 355	30 752	36 895	19 777	24 355	30 752	36 895
	Spain	34 619	37 597	40 034	49 307	34 619	37 597	40 034	49 307
	Sweden [1, 3, 4, 5]	414 000	458 400	476 886	548 400	416 400	462 000	478 800	555 600
	Switzerland	89 600	114 300	m	137 300	100 900	130 300	m	155 300
	Türkiye	90 446	93 043	91 841	98 392	90 446	93 043	91 841	98 392
	United States [5]	43 466	59 374	67 626	77 596	43 438	59 335	66 750	76 055
	Other participants								
	Flemish Comm. (Belgium)	33 988	42 620	47 983	60 495	42 402	54 043	61 629	76 801
	French Comm. (Belgium)	32 737	40 908	46 043	56 314	40 699	51 847	59 112	71 220
	England (UK)	26 697	a	42 833	42 833	26 697	a	42 833	42 833
	Scotland (UK)	32 994	41 412	41 412	41 412	32 994	41 412	41 412	41 412
Partners	Argentina	254 826	m	m	m	254 826	m	m	m
	Brazil [6]	34 103	m	m	m	34 103	m	m	m
	China	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m
	Saudi Arabia	84 600	m	m	m	92 400	m	m	m
	South Africa	391 188	m	m	m	391 188	m	m	m

Note: The definition of teachers' most prevalent qualifications is based on a broad concept, including the typical ISCED level of attainment and other criteria. The most prevalent qualification is defined for each of the four career stages included in this table. In many cases, the minimum qualification is the same as the most prevalent qualification, see Table X3.D3.2 in Annex 3. Please see Annex 2 and Definitions and Methodology sections for more information. Data and more breakdowns available at http://stats.oecd.org, Education at a Glance Database.

1. Year of reference 2020.
2. Includes the average of fixed bonuses for overtime hours for lower and upper secondary teachers.
3. At the upper secondary level, includes teachers working in vocational programmes (in Slovenia and Sweden, includes only those teachers teaching general subjects within vocational programmes).
4. Excludes the social security contributions and pension-scheme contributions paid by the employees.
5. Actual base salaries.
6. Year of reference 2019.

Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

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Table X2.5. Trends in teachers' average actual salaries, in national currencies (2000, 2005 and 2010 to 2021)

Average annual salary (including bonuses and allowances) of teachers aged 25-64

		Pre-primary						Primary					
		2000	2005	2010	2015	2020	2021	2000	2005	2010	2015	2020	2021
		(1)	(2)	(3)	(8)	(13)	(14)	(15)	(16)	(17)	(22)	(27)	(28)
OECD	**Countries**												
	Australia	m	m	77 641	m	101 104	103 128	m	m	78 352	81 730	93 686	96 465
	Austria [1]	m	m	m	m	m	m	m	m	m	47 416	51 860	52 526
	Canada	m	m	m	m	m	m	m	m	m	m	m	m
	Chile	m	m	m	11 494 412	m	m	m	m	m	11 258 028	m	m
	Colombia	m	m	m	m	m	m	m	m	m	m	m	m
	Costa Rica	m	m	m	m	14 012 470	13 754 694	m	m	m	m	14 691 156	14 237 310
	Czech Republic	m	m	228 603	277 809	415 700	m	m	m	290 682	325 614	515 600	m
	Denmark [2]	m	m	372 336	396 252	393 200	398 917	m	m	452 337	480 636	477 308	485 094
	Estonia	m	m	m	8 807	14 814	15 156	m	m	m	13 254	19 387	19 607
	Finland [3]	m	m	29 759	32 637	34 406	35 170	28 723	35 654	40 458	44 085	45 301	46 332
	France	m	m	31 467	33 835	m	m	m	m	30 881	32 978	m	m
	Germany	m	m	m	m	m	m	m	m	m	53 610	60 792	63 329
	Greece [4]	m	m	m	16 085	17 328	17 759	m	m	m	16 085	17 328	17 759
	Hungary	m	m	2 217 300	3 238 584	3 939 026	4 312 026	m	m	2 473 800	3 373 500	4 111 792	4 515 919
	Iceland	m	m	m	5 261 000	6 772 000	7 663 000	m	m	m	5 966 000	7 450 000	8 320 000
	Ireland	m	m	m	m	m	m	m	m	m	m	58 975	60 369
	Israel	m	m	110 959	161 247	169 452	173 019b	m	m	123 151	162 049	175 071	173 355b
	Italy	m	m	25 774	28 672	29 157	29 490	m	m	25 774	28 672	29 157	29 490
	Japan	m	m	m	m	m	m	m	m	m	m	m	m
	Korea	m	m	m	m	m	m	m	m	m	m	m	m
	Latvia	m	m	m	7 435	11 913	12 590	m	m	m	9 981	15 278	15 703
	Lithuania	m	m	m	9 732	18 576	21 120	m	m	m	9 732	18 576	21 120
	Luxembourg	m	m	88 315	93 705	m	m	m	m	88 315	93 705	m	m
	Mexico	m	m	m	m	m	m	m	m	m	m	m	m
	Netherlands	m	m	43 374	45 126	56 127	54 947	m	m	43 374	45 126	56 127	54 947
	New Zealand	m	m	m	m	m	m	m	m	m	68 833	79 291	m
	Norway	m	289 548	368 580	448 797	518 890	522 644	m	348 877	422 930	505 878	572 804	575 848
	Poland	m	m	40 626	49 856	m	m	m	m	46 862	57 738	m	m
	Portugal	m	m	m	31 234	33 805	33 883	m	m	m	28 561	30 502	30 881
	Slovak Republic	m	m	m	8 986	13 144	13 559	m	m	m	12 185	17 089	17 938
	Slovenia [5]	m	m	m	17 349	22 298	m	m	m	m	24 069	27 426	m
	Spain	m	m	m	m	m	m	m	m	m	m	m	m
	Sweden [6]	204 516	252 268	296 997	343 285	403 158	m	239 887	288 154	323 621	378 684	457 892	m
	Switzerland	m	m	m	m	m	m	m	m	m	m	m	m
	Türkiye	m	m	m	m	m	m	m	m	m	m	m	m
	United States	38 028	40 268	48 103	50 946	54 934	56 199	38 746	41 059	49 133	52 516	55 980	57 269
	Other Participants												
	Flemish Comm. (Belgium)	m	m	41 046	44 357	47 024	48 734	m	m	41 543	44 848	46 582	48 139
	French Comm. (Belgium)	m	m	m	42 741	45 634	46 540	m	m	m	42 468	44 623	45 406
	England (UK)	22 968	29 418	33 680	33 422	35 707	37 029	22 968	29 418	33 680	33 422	35 707	37 029
	Scotland (UK)	m	m	31 884	33 166	37 492	38 715	m	m	31 884	33 166	37 492	38 715
Partners	Argentina	m	m	m	m	m	m	m	m	m	m	m	m
	Brazil	m	m	m	47 238	m	m	m	m	m	48 161	m	m
	China	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m	m	m	m	m	m	m

		Lower secondary						Upper secondary					
		2000	2005	2010	2015	2020	2021	2000	2005	2010	2015	2020	2021
		(29)	(30)	(31)	(36)	(41)	(42)	(43)	(44)	(45)	(50)	(55)	(56)
OECD	**Countries**												
	Australia	m	m	78 221	82 516	95 270	97 119	m	m	78 225	82 542	93 298	97 206
	Austria [1]	m	m	m	55 799	58 483	58 724	m	m	m	60 152	66 081	67 207
	Canada	m	m	m	m	m	m	m	m	m	m	m	m
	Chile	m	m	m	11 325 494	m	m	m	m	m	12 365 587	m	m
	Colombia	m	m	m	m	m	m	m	m	m	m	m	m
	Costa Rica	m	m	m	m	17 669 394	17 077 654	m	m	m	m	17 669 394	17 077 654
	Czech Republic	m	m	289 771	325 034	512 000	m	m	m	313 534	338 662	537 100	m
	Denmark [2]	m	m	457 728	486 492	480 476	488 226	m	m	m	553 880	566 438	568 013b
	Estonia	m	m	m	13 254	19 387	19 607	m	m	m	13 254	19 387	19 607
	Finland [3]	32 919	39 519	44 421	48 497	50 398	51 347	37 728	44 051	49 808	54 378	56 929	57 848
	France	m	m	37 232	38 508	m	m	m	m	41 794	43 338	m	m
	Germany	m	m	m	59 153	67 007	69 779	m	m	m	62 760	70 913	73 557
	Greece [4]	m	m	m	17 103	18 522	18 634	m	m	m	17 103	18 522	18 634
	Hungary	m	m	2 473 800	3 373 500	4 111 792	4 515 919	m	m	2 814 100	3 588 180	4 471 546	4 941 289
	Iceland	m	m	m	5 966 000	7 450 000	8 320 000	m	m	5 172 300	7 931 000	9 988 000	10 581 000
	Ireland	m	m	m	m	61 414	62 573	m	m	m	m	61 414	62 573
	Israel	m	m	126 309	176 907	186 766	187 237b	m	m	133 790	160 763	199 084	203 538
	Italy	m	m	27 170	28 581	31 269	31 565	m	m	28 986	30 991	33 261	33 811
	Japan	m	m	m	m	m	m	m	m	m	m	m	m
	Korea	m	m	m	m	m	m	m	m	m	m	m	m
	Latvia	m	m	m	9 320	15 069	16 724	m	m	m	10 430	16 499	18 269
	Lithuania	m	m	m	9 732	18 576	21 120	m	m	m	9 732	18 576	21 120
	Luxembourg	m	m	101 471	106 650	m	m	m	m	101 471	106 650	m	m
	Mexico	m	m	m	m	m	m	m	m	m	m	m	m
	Netherlands	m	m	52 831	56 796	65 212	66 712	m	m	52 831	56 796	65 212	66 712
	New Zealand	m	m	m	70 223	79 885	m	m	m	m	74 624	86 522	m
	Norway	m	348 877	422 930	505 878	572 804	575 848	m	372 694	449 704	555 315	621 412	626 379
	Poland	m	m	47 410	58 907	m	m	m	m	46 147	57 837	m	m
	Portugal	m	m	m	27 903	29 686	30 078	m	m	m	30 431	32 093	32 656
	Slovak Republic	m	m	m	12 185	17 089	17 938	m	m	m	12 176	17 737	18 656
	Slovenia [5]	m	m	m	24 504	27 918	m	m	m	m	25 989	29 409	m
	Spain	m	m	m	m	m	m	m	m	m	m	m	m
	Sweden [6]	247 793	290 058	324 639	389 624	476 260	m	265 488	315 592	347 967	405 662	484 829	m
	Switzerland	m	m	m	m	m	m	m	m	m	m	m	m
	Türkiye	m	m	m	m	m	m	m	m	m	m	m	m
	United States	39 500	41 873	50 158	53 548	58 625	59 974	41 124	43 588	52 188	55 328	61 162	62 569
	Other Participants												
	Flemish Comm. (Belgium)	m	m	41 277	43 718	46 590	47 968	m	m	54 381	56 594	55 965	57 675
	French Comm. (Belgium)	m	m	m	41 586	43 463	44 494	m	m	m	53 006	55 100	55 937
	England (UK)	25 347	32 355	36 173	36 016	39 846	41 139	25 347	32 355	36 173	36 016	39 846	41 139
	Scotland (UK) [7]	m	m	31 884	33 166	37 492	38 715	m	m	31 884	33 166	37 492	38 715
Partners	Argentina	m	m	m	m	m	m	m	m	m	m	m	m
	Brazil	m	m	m	49 327	m	m	m	m	m	50 244	m	m
	China	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m	m	m	m	m	m	m

Note: Years 2011 to 2014 and 2016 to 2019 (i.e. Columns 4-7, 9-12, 18-21, 23-26, 32-35, 37-40, 46-49 and 51-54) are available for consultation on line (see StatLink below). See Definitions and Methodology sections for more information. Data and more breakdowns available at http://stats.oecd.org, Education at a Glance Database.

1. Before 2015, also includes data on actual salaries of head teachers, deputies and assistants.
2. Also includes data on actual salaries of teachers in early childhood educational development programmes for pre-primary education.
3. Also includes data on the majority, i.e. kindergarten teachers only for pre-primary education.
4. At pre-primary and primary levels actual salaries refer to all teachers/school heads in those levels of education combined, including special needs education. At lower and upper secondary levels, actual salaries refer to all teachers/school heads in those levels of education combined, including vocational education, adult education and special needs education.
5. Also includes data on actual salaries of preschool teachers' assistants for pre-primary education for 2011 to 2015.
6. Average actual teachers' salaries.
7. Includes all teachers, irrespective of their age.
8. Average actual teachers' salaries for all teachers, irrespective of the level of education they teach.

Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/oq3pgc

Table X2.6. Reference statistics used in calculating teachers' salaries (2000 and 2005 to 2021)

		Purchasing power parity for private consumption (PPP)[1]					Private consumption deflators (2015 = 100)						Reference year for statutory salary data	Reference year for actual salary data
		2019	2020	2021	Jan 2020	Jan 2021	Jan 2000	Jan 2005	Jan 2010	Jan 2015	Jan 2020	Jan 2021		
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(12)	(17)	(22)	(23)	(24)	(25)
OECD	**Countries**													
	Australia	1.55	1.54	1.54	1.54	1.54	68	78	90	100	107	108	2021	2021
	Austria	0.85	0.82	0.82	0.82	0.82	75	82	89	100	109	111	2020/21	2020/21
	Canada	1.34	1.33	1.33	1.33	1.33	80	87	93	100	106	108	2020/21	2020/21
	Chile	468.53	470.89	470.89	470.89	470.89	56	67	82	100	115	120	2021	2021
	Colombia	1 508.74	1 469.03	1 469.03	1 469.03	1 469.03	48	66	83	100	124	127	2020	2021
	Costa Rica	362.51	356.04	356.04	356.04	356.04	30	52	83	100	110	111	2021	2021
	Czech Republic	14.45	14.80	14.80	14.80	14.80	76	85	95	100	110	113	2020/21	2019/20
	Denmark	7.93	7.60	7.60	7.60	7.60	77	84	93	100	103	104	2020/21	2020/21
	Estonia	0.64	0.62	0.62	0.62	0.62	57	69	87	100	112	112	2020/21	2020/21
	Finland	0.95	0.92	0.92	0.92	0.92	76	82	90	100	104	105	2020/21	2020/21
	France	0.85	0.82	0.82	0.82	0.82	82	89	95	100	104	105	2020/21	2019
	Germany	0.80	0.78	0.78	0.78	0.78	82	88	94	100	106	108	2020/21	2020/21
	Greece	0.65	0.64	0.64	0.64	0.64	79	89	101	100	98	101	2020/21	2020/21
	Hungary	164.27	169.46	169.46	169.46	169.46	50	69	87	100	115	120	2020/21	2020/21
	Iceland	166.43	160.92	160.92	160.92	160.92	45	55	84	100	109	112	2020/21	2020/21
	Ireland	1.02	1.02	1.02	1.02	1.02	83	97	96	100	106	109	2020/21	2020/21
	Israel	4.32	4.25	4.25	4.25	4.25	76	82	93	100	101	102	2020/21	2020/21
	Italy	0.76	0.74	0.74	0.74	0.74	74	84	93	100	103	103	2020/21	2020/21
	Japan	116.08	113.48	113.48	113.48	113.48	108	103	100	100	102	102	2020/21	2020/21
	Korea	1 002.73	967.40	967.40	967.40	967.40	68	81	91	100	106	107	2021	2021
	Latvia	0.58	0.57	0.57	0.57	0.57	51	65	91	100	111	113	2020/21	2020/21
	Lithuania	0.51	0.51	0.51	0.51	0.51	70	70	92	100	109	111	2020/21	2020/21
	Luxembourg	0.96	0.96	0.96	0.96	0.96	74	84	92	100	107	109	2020/21	2020/21
	Mexico	10.56	10.49	10.49	10.49	10.49	49	63	80	100	122	128	2021	2021
	Netherlands	0.87	0.84	0.84	0.84	0.84	77	87	93	100	108	110	2020/21	2020/21
	New Zealand	1.59	1.62	1.62	1.62	1.62	77	83	94	100	107	109	2021	2020
	Norway	10.68	10.63	10.63	10.63	10.63	75	83	92	100	112	114	2020/21	2020/21
	Poland	1.94	1.93	1.93	1.93	1.93	67	80	91	100	107	110	2020/21	2020/21
	Portugal	0.66	0.65	0.65	0.65	0.65	72	85	94	100	106	107	2020/21	2020/21
	Slovak Republic	0.65	0.65	0.65	0.65	0.65	61	80	92	100	107	110	2020/21	2020/21
	Slovenia	0.65	0.64	0.64	0.64	0.64	62	82	95	100	104	105	2020/21	2019/20
	Spain	0.72	0.71	0.71	0.71	0.71	71	83	94	100	104	105	2020/21	2020/21
	Sweden	9.79	9.41	9.41	9.41	9.41	82	88	95	100	109	110	2020	2020
	Switzerland	1.37	1.32	1.32	1.32	1.32	95	98	103	100	101	101	2019/20	2020/21
	Türkiye	2.26	2.60	2.60	2.60	2.60	13	48	70	100	172	199	2020/21	2020/21
	United States	1.00	1.00	1.00	1.00	1.00	75	83	92	100	107	110	2020/21	2020/21
	Other Participants													
	Flemish Comm. (Belgium)[2]	0.86	0.83	0.83	0.83	0.83	75	84	92	100	108	109	2020/21	2020/21
	French Comm. (Belgium)[2]	0.86	0.83	0.83	0.83	0.83	75	84	92	100	108	109	2020/21	2020/21
	England (UK)[3]	0.79	0.78	0.78	0.78	0.78	77	81	91	100	107	109	2020/21	2020/21
	Scotland (UK)[3]	0.79	0.78	0.78	0.78	0.78	77	81	91	100	107	109	2020/21	2020/21
Partners	Argentina	m	m	m	m	m	10	16	31	100	529	780	2019	m
	Brazil	2.40	2.45	2.45	2.45	2.45	33	51	69	100	129	137	2019	m
	China	m	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	1.66	1.69	1.69	1.69	1.69	m	m	m	m	m	m	2020	m
	South Africa	6.83	6.97	6.97	6.97	6.97	40	56	76	100	124	128	2019	m

Note: Private consumption deflators for the years 2006 to 2009, 2011 to 2014 and 2016 to 2019 (i.e. Columns 8-11, 13-16 and 18-21) are available for consultation on line (see StatLink below). See Definitions and Methodology sections for more information. Data and more breakdowns available at http://stats.oecd.org, Education at a Glance Database.

1. Data on PPPs and GDP for countries now in the euro area are shown in euros.
2. Data on PPPs and deflators refer to Belgium.
3. Data on PPPs and deflators refer to the United Kingdom.

Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/6dorb0

Table X2.7. Distribution of teachers, by minimum or most prevalent qualifications and level of education (2021)

Teachers who have either the minimum or a higher than minimum (and most prevalent) qualification

		Pre-primary			Primary			Lower secondary			Upper secondary		
		Is there a difference between "minimum" and "most prevalent" qualifications?	Percentage of teachers in salary range based on minimum qualification of teachers to enter the teaching profession in 2021	Percentage of teachers in a salary range based on a higher than minimum (and most prevalent) qualification to enter the teaching profession in 2021	Is there a difference between "minimum" and "most prevalent" qualifications?	Percentage of teachers in salary range based on minimum qualification of teachers to enter the teaching profession in 2021	Percentage of teachers in a salary range based on a higher than minimum (and most prevalent) qualification to enter the teaching profession in 2021	Is there a difference between "minimum" and "most prevalent" qualifications?	Percentage of teachers in salary range based on minimum qualification of teachers to enter the teaching profession in 2021	Percentage of teachers in a salary range based on a higher than minimum (and most prevalent) qualification to enter the teaching profession in 2021	Is there a difference between "minimum" and "most prevalent" qualifications?	Percentage of teachers in salary range based on minimum qualification of teachers to enter the teaching profession in 2021	Percentage of teachers in a salary range based on a higher than minimum (and most prevalent) qualification to enter the teaching profession in 2021
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
OECD	**Countries**												
	Australia	m	100	a	m	100	a	m	100	a	m	100	a
	Austria	m	m	m	No	100	a	No	100	a	No	100	a
	Canada	a	a	a	Yes	m	m	Yes	m	m	Yes	m	m
	Chile	No	a	a	No	a	a	No	a	a	No	a	a
	Colombia[1]	Yes	8	78	Yes	20	66	No	m	m	No	m	m
	Costa Rica	Yes	0	93	Yes	0	76	Yes	0	56	Yes	0	56
	Czech Republic	No	100	a	No	100	a	No	100	a	No	100	a
	Denmark	No	100	a	No	100	a	No	100	a	No	100	a
	Estonia	a	a	a	No	m	a	No	m	a	No	m	a
	Finland	No	63	a	No	61	a	No	91	a	No	97	a
	France	No	99	a	No	99	a	No	83	a	No	65	a
	Germany	m	m	m	No	100	a	No	100	a	No	100	a
	Greece	No	100	a	No	100	a	No	100	a	No	100	a
	Hungary	No	m	a	No	m	a	Yes	m	a	No	m	a
	Iceland	Yes	m	a	Yes	m	a	Yes	m	a	Yes	m	a
	Ireland	m	m	m	No	m	a	No	m	a	No	m	a
	Israel	No	66	a	No	55	a	No	42	a	No	45	a
	Italy	No	100	a	No	100	a	No	100	a	No	100	a
	Japan	m	m	m	No	m	a	No	m	a	No	m	a
	Korea	Yes	m	m	No	m	a	Yes	m	m	Yes	m	m
	Latvia	No	100	a	No	100	a	No	100	a	No	100	a
	Lithuania	Yes	m	a	Yes	m	a	Yes	m	a	Yes	m	a
	Luxembourg	No	72	a	No	79	a	No	82	a	No	80	a
	Mexico	No	m	a	No	m	a	No	m	a	No	m	a
	Netherlands	No	100	a	No	100	a	No	m	a	No	100	a
	New Zealand	m	m	m	Yes	m	m	Yes	m	m	No	m	a
	Norway	No	m	a	Yes	36	49	Yes	36	49	Yes	11	50
	Poland	Yes	0	93	Yes	0	98	Yes	0	98	No	99	a
	Portugal	No	100	a	No	100	a	No	100	a	No	100	a
	Slovak Republic	No	m	a	No	m	a	No	m	a	No	m	a
	Slovenia	No	100	a	No	100	a	No	100	a	No	100	a
	Spain	No	100	a	No	100	a	No	100	a	No	100	a
	Sweden[1]	No	100	a	No	100	a	No	100	a	No	100	a
	Switzerland	No	100	a	No	100	a	No	100	a	No	100	a
	Türkiye	No	m	a	No	m	a	No	m	a	No	m	a
	United States	No	47	a	Yes	43	47	Yes	38	50	Yes	34	53
	Other Participants												
	Flemish Comm. (Belgium)	No	100	a	No	100	a	No	92	a	Yes	25	72
	French Comm. (Belgium)	No	98	a	No	91	a	No	83	a	Yes	6	80
	England (UK)	No	99	a	No	99	a	No	97	a	No	97	a
	Scotland (UK)	No	100	a	No	100	a	No	100	a	No	100	a
Partners	Argentina	m	m	m	m	m	m	m	m	m	m	m	m
	Brazil	No	m	a	No	m	a	No	m	a	No	m	a
	China	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m	m	m	m	m	m	m

Note: See Definitions and Methodology sections for more information. Data available at http://stats.oecd.org/, Education at a Glance Database.
1. Year of reference 2020.
Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/aflphg

Table X2.8. Distribution of teachers aged 25-64, by educational attainment and level of education (2021)

		Pre-primary			Primary			Lower secondary			Upper secondary		
		Attainment at ISCED level 5 or lower	Attainment at ISCED level 6	Attainment at ISCED level 7 or 8	Attainment at ISCED level 5 or lower	Attainment at ISCED level 6	Attainment at ISCED level 7 or 8	Attainment at ISCED level 5 or lower	Attainment at ISCED level 6	Attainment at ISCED level 7 or 8	Attainment at ISCED level 5 or lower	Attainment at ISCED level 6	Attainment at ISCED level 7 or 8
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
OECD	**Countries**												
	Australia	m	m	m	m	m	m	m	m	m	m	m	m
	Austria	m	m	m	m	m	m	m	m	m	m	m	m
	Canada	m	m	m	m	m	m	m	m	m	m	m	m
	Chile	m	m	m	m	m	m	m	m	m	m	m	m
	Colombia	m	m	m	m	m	m	m	m	m	m	m	m
	Costa Rica	m	m	m	m	m	m	m	m	m	m	m	m
	Czech Republic[1]	70	20	10	8	4	88	6	6	89	2	3	95
	Denmark	m	m	m	m	m	m	m	m	m	0	0	100
	Estonia	25	51	24	10	28	63	7	22	71	4	15	81
	Finland	26	66	8	2	2	96	2	2	96	0	1	99
	France [1]	x(4)	x(5)	x(6)	10[d]	57[d]	33[d]	x(10)	x(11)	x(12)	6[d]	56[d]	38[d]
	Germany	m	m	m	0	0	100	0	0	100	0	0	100
	Greece	x(4)	x(5)	x(6)	0[d]	82[d]	18[d]	x(10)	x(11)	x(12)	1[d]	72[d]	28[d]
	Hungary	5	93	2	x(7)	x(8)	x(9)	1[d]	76[d]	23[d]	0	9	91
	Iceland	23	61	16	8	65	26	8	65	26	17	36	48
	Ireland	m	m	m	m	m	m	m	m	m	m	m	m
	Israel	1	66	32	2	55	43	2	42	57	6	45	50
	Italy	m	m	m	m	m	m	m	m	m	m	m	m
	Japan	m	m	m	m	m	m	m	m	m	m	m	m
	Korea	14	64	21	0	73	27	0	68	32	0	63	37
	Latvia	21	79[d]	x(2)	6	94[d]	x(5)	5	95[d]	x(8)	3	97[d]	x(11)
	Lithuania	m	m	m	m	m	m	m	m	m	m	m	m
	Luxembourg	m	m	m	m	m	m	m	m	m	m	m	m
	Mexico	13	79	8	4	88	9	7	81	12	m	m	m
	Netherlands	0	80	20	0	80	20	0	63	37	0	63	37
	New Zealand[1]	m	m	m	8	89	4	8	88	5	3	84	13
	Norway	5	95	1	4	85	11	4	85	11	3	50	48
	Poland	0	7	93	0	2	98	0	2	98	0	1	99
	Portugal[1]	a	12	88	a	6	94	a	3	97	a	3	98
	Slovak Republic	m	m	m	m	m	m	m	m	m	m	m	m
	Slovenia[1]	15	62	23	17	4	79	20	2	78	1	2	97
	Spain	0	100[d]	x(2)	0	100[d]	x(5)	0	0	100	0	0	100
	Sweden[1]	32	63	4	4	66	30	3	24	73	2	13	86
	Switzerland	m	m	m	m	m	m	m	m	m	m	m	m
	Türkiye	2	94	4	5	90	5	0	93	7	0	78	22
	United States	2	45	53	2	41	57	3	37	61	4	33	63
	Other Participants												
	Flemish Comm. (Belgium)	1	98	1	2	96	2	5	86	10	2	25	73
	French Comm. (Belgium)	0	98	1	1	93	5	1	82	17	1	9	90
	England (UK)	6	49	45	6	49	45	3	32	66	3	32	66
	Scotland (UK)	m	m	m	m	m	m	m	m	m	m	m	m
Partners	Argentina	m	m	m	m	m	m	m	m	m	m	m	m
	Brazil	m	m	m	m	m	m	m	m	m	m	m	m
	China	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m	m	m	m	m	m	m

Note: See Definitions and Methodology sections for more information. Data available at http://stats.oecd.org/, Education at a Glance Database.
1. Year of reference 2020.
Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3.pdf)..
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/92h7qi

Table X2.9. Distribution of school heads aged 25-64, by educational attainment and level of education (2021)

		Pre-primary			Primary			Lower secondary			Upper secondary		
		Attainment at ISCED level 5 or lower	Attainment at ISCED level 6	Attainment at ISCED level 7 or 8	Attainment at ISCED level 5 or lower	Attainment at ISCED level 6	Attainment at ISCED level 7 or 8	Attainment at ISCED level 5 or lower	Attainment at ISCED level 6	Attainment at ISCED level 7 or 8	Attainment at ISCED level 5 or lower	Attainment at ISCED level 6	Attainment at ISCED level 7 or 8
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
OECD	**Countries**												
	Australia	m	m	m	m	m	m	m	m	m	m	m	m
	Austria	m	m	m	m	m	m	m	m	m	m	m	m
	Canada	m	m	m	m	m	m	m	m	m	m	m	m
	Chile	m	m	m	m	m	m	m	m	m	m	m	m
	Colombia	m	m	m	m	m	m	m	m	m	m	m	m
	Costa Rica	m	m	m	m	m	m	m	m	m	m	m	m
	Czech Republic[1]	57	23	20	2	2	97	2	2	97	2	2	96
	Denmark	0	100	0	0	100	0	0	100	0	0	0	100
	Estonia	1	26	73	1	11	89	1	10	89	2	6	92
	Finland	26	55	19	0	4	96	1	1	98	0	0	100
	France[1]	10	57	33	10	57	33	m	m	m	m	m	m
	Germany	m	m	m	m	m	m	m	m	m	m	m	m
	Greece	x(4)	x(5)	x(6)	0[d]	73[d]	27[d]	x(10)	x(11)	x(12)	0[d]	42[d]	58[d]
	Hungary	1	94	5	x(7)	x(8)	x(9)	0[d]	70[d]	30[d]	0	48	52
	Iceland	23	47	29	3	50	47	3	50	47	8	39	53
	Ireland	m	m	m	m	m	m	m	m	m	m	m	m
	Israel	a	a	a	0	5	95	0	1	99	3	20	77
	Italy	a	a	a	0	0	100	0	0	100	0	0	100
	Japan	m	m	m	m	m	m	m	m	m	m	m	m
	Korea	1	8	92	0	13	87	0	10	90	0	9	91
	Latvia	0	100[d]	x(2)	0	100[d]	x(5)	0	100[d]	x(8)	0	100[d]	x(11)
	Lithuania	m	m	m	m	m	m	m	m	m	m	m	m
	Luxembourg	m	m	m	m	m	m	m	m	m	m	m	m
	Mexico	m	m	m	m	m	m	m	m	m	m	m	m
	Netherlands	0	63	37	0	63	37	0	50	50	0	50	50
	New Zealand[1]	m	m	m	55	45	0	51	49	0	71	29	0
	Norway	4	95	1	2	87	11	2	87	11	1	47	52
	Poland	0	1	99	0	0	100	0	0	100	0	0	100
	Portugal[1]	a	5	95	a	5	95	a	5	95	a	5	95
	Slovak Republic	m	m	m	m	m	m	m	m	m	m	m	m
	Slovenia[1]	0	49	51	0	1	99	0	1	99	0	0	100
	Spain	0	100[d]	x(2)	0	100[d]	x(5)	0	0	100	0	0	100
	Sweden[1]	39	48	11	11	44	43	11	44	43	6	24	67
	Switzerland	m	m	m	m	m	m	m	m	m	m	m	m
	Türkiye	2	67	31	9	65	27	2	70	28	1	59	40
	United States	0	1	99	0	2	98	0	2	98	0	2	98
	Other Participants												
	Flemish Comm. (Belgium)	0	95	5	0	95	5	0	61	39	0	6	94
	French Comm. (Belgium)	0	98	2	0	94	6	0	75	25	0	20	80
	England (UK)	2	56	42	2	56	42	1	26	73	1	26	73
	Scotland (UK)	m	m	m	m	m	m	m	m	m	m	m	m
Partners	Argentina	m	m	m	m	m	m	m	m	m	m	m	m
	Brazil	m	m	m	m	m	m	m	m	m	m	m	m
	China	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m	m	m	m	m	m	m

Note: See Definitions and Methodology sections for more information. Data and more breakdowns available at http://stats.oecd.org, Education at a Glance Database.
1. Year of reference 2020.
Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3.pdf).
Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.>

StatLink https://stat.link/c2boz1

Table X2.10. Trends in teachers' statutory salaries, in national currencies, by level of education (2000 and 2005 to 2021)

Annual statutory teachers' salaries in public institutions for teachers with 15 years of experience and the most prevalent qualifications[1]

		Pre-primary						Primary					
		2000	2005	2010	2015	2020	2021	2000	2005	2010	2015	2020	2021
		(1)	(2)	(7)	(12)	(17)	(18)	(19)	(20)	(25)	(30)	(35)	(36)
OECD	**Countries**												
	Australia	m	62 240	74 125	91 291	106 583	107 927	m	62 240	75 382	91 805	102 380	105 726
	Austria[2]	m	31 050	35 526	m	m	m	25 826	31 050	35 526	38 225	46 156	47 041
	Canada	m	m	m	m	m	m	m	m	m	87 202	93 640	93 611
	Chile	m	m	9 154 829	11 449 961	17 528 510	m	m	m	9 154 829	11 449 961	17 528 510	m
	Colombia	m	m	m	41 239 431	63 276 168	m	m	m	m	41 239 431	63 276 168	m
	Costa Rica	m	m	m	12 359 313	11 790 217	11 790 217	m	m	m	12 359 313	11 907 513	11 907 513
	Czech Republic	m	m	m	251 160	358 800	378 000	m	m	m	272 200	399 600	421 200
	Denmark[3]	269 948	334 577	375 122	397 571	397 756	404 768	315 530	367 323	428 628	459 819	465 241	473 443
	Estonia	m	m	m	a	a	a	3 068	4 379	7 728	m	a	a
	Finland	19 956	23 333	28 331	30 900	31 966	33 025	24 961	30 791	37 769	39 769	40 824	42 221
	France	27 151	28 290	29 610	30 140	32 583	32 948	27 151	28 290	29 610	30 140	32 583	32 948
	Germany	m	m	m	m	m	m	m	43 320	47 647	56 267	63 484	66 145
	Greece	16 292	21 237	25 001	17 592	17 352	17 352	16 292	21 237	25 001	17 592	17 352	17 352
	Hungary	751 668	1 739 076	1 780 884	2 884 041	3 178 980	3 496 878	897 168	1 944 576	1 916 568	2 884 041	3 178 980	3 496 878
	Iceland	m	2 821 586	3 901 395	m	6 676 644	7 301 174	m	3 100 440	4 264 973	m	6 630 444	7 301 174
	Ireland	m	m	m	m	a	a	33 370	48 206	57 390	57 390	62 072	63 474
	Israel	72 174	82 076	99 707	145 012	158 912	161 062[b]	75 912	82 179	115 299	130 922	138 394	143 124[b]
	Italy	m	25 234	27 645	27 845	29 162	29 162	20 849	25 234	27 645	27 845	29 162	29 162
	Japan	m	m	m	m	m	m	6 645 000	6 236 000	5 555 000	5 535 000	5 619 000	5 601 000
	Korea	m	38 608 000	42 003 257	50 422 920	57 579 740	58 222 300	m	39 712 000	42 003 257	50 422 920	57 579 740	58 222 300
	Latvia	1 321	2 321	4 069	5 040	a	a	1 321	2 321	4 069	5 040	a	a
	Lithuania	m	m	m	6 220	13 158	18 118	m	m	m	9 031	16 727	18 118
	Luxembourg	m	62 139	93 182	106 536	98 391	100 850	m	62 139	93 182	106 536	98 391	100 850
	Mexico	110 833	159 128	208 871	272 901	364 137	364 137	110 833	159 128	208 871	272 901	364 137	364 137
	Netherlands	m	m	m	49 002	60 939	59 733	m	m	m	49 002	60 939	59 733
	New Zealand	m	m	m	m	m	m	m	m	m	69 099	83 000	85 490
	Norway	m	287 000	353 700	419 500	500 000	501 400	m	327 500	386 000	460 850	536 800	538 500
	Poland	m	31 216	40 120	47 645	58 441	61 952	m	31 216	40 120	47 645	58 441	61 952
	Portugal	m	24 759	27 038	26 321	28 857	28 886	m	24 759	27 038	26 321	28 857	28 886
	Slovak Republic	m	m	6 136	7 160	10 036	10 350	m	m	7 492	9 794	12 258	12 642
	Slovenia	m	m	26 635	24 607	28 275	29 644	14 123	21 465	27 164	25 550	29 333	30 752
	Spain	m	28 122	33 889	32 389	35 339	35 862	m	28 122	33 889	32 389	35 339	35 862
	Sweden[4]	m	261 000	m	354 600	420 144	m	m	283 200	m	379 200	463 200	m
	Switzerland	m	m	m	m	m	m	m	m	m	m	m	m
	Türkiye	4 560	16 464	27 701	42 367	77 517	88 961[b]	4 560	16 464	27 701	42 367	77 517	88 961[b]
	United States[4, 5]	36 758	41 500	m	m	62 193	63 625	38 046	51 413	52 742	60 705	62 102	63 531
	Other Participants												
	Flemish Comm. (Belgium)	29 586	35 417	40 042	43 842	46 673	47 983	29 586	35 417	40 042	43 842	46 673	47 983
	French Comm. (Belgium)	28 485	33 427	38 610	42 425	45 056	46 043	28 485	33 427	38 610	42 425	45 056	46 043
	England (UK)[3]	30 018	33 978	35 929	37 496	41 687	42 833	30 018	33 978	35 929	37 496	41 687	42 833
	Scotland (UK)	14 022	29 827	33 666	34 887	40 206	41 412	22 743	29 827	33 666	34 887	40 206	41 412
Partners	Argentina	m	m	m	m	m	m	m	m	m	m	m	m
	Brazil	m	m	m	m	m	m	m	m	m	m	m	m
	China	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m	m	m	m	m	m	m

		Lower secondary, general programmes						Upper secondary, general programmes					
		2000	2005	2010	2015	2020	2021	2000	2005	2010	2015	2020	2021
		(37)	(38)	(43)	(48)	(53)	(54)	(55)	(56)	(61)	(66)	(71)	(72)
OECD	**Countries**												
	Australia	m	62 384	75 382	91 903	96 709	105 467	m	62 384	75 382	91 903	102 467	105 467
	Austria [2]	26 916	33 635	38 451	41 334	48 325	49 313	29 728	34 265	41 381	44 500	52 635	53 661
	Canada	m	m	m	87 202	93 640	93 611	m	m	m	87 202	93 640	93 611
	Chile	m	m	9 154 829	11 449 961	17 528 510	m	m	m	9 700 782	11 694 832	18 137 514	m
	Colombia	m	m	m	41 239 431	63 276 168	m	m	m	m	41 239 431	63 276 168	m
	Costa Rica	m	m	m	17 117 566	12 272 960	12 272 960	m	m	m	17 117 566	12 272 960	12 272 960
	Czech Republic	m	m	m	272 200	400 800	422 400	m	m	m	272 200	400 800	422 400
	Denmark [3]	315 530	367 323	434 802	467 714	469 723	478 005	395 558	402 580	459 745	509 119	496 731	500 239
	Estonia	3 068	4 379	7 728	m	a	a	3 068	4 379	7 728	m	a	a
	Finland	28 293	34 677	40 791	42 951	44 090	45 353	31 115	36 550	43 168	46 363	47 584	48 944
	France	28 249	29 433	30 803	32 231	35 111	35 490	28 249	29 433	30 803	32 231	35 111	35 490
	Germany	m	46 842	52 784	61 058	69 508	71 991	m	53 096	57 150	64 767	71 880	74 610
	Greece	16 292	21 237	25 001	17 592	17 352	17 352	16 292	21 237	25 001	17 592	17 352	17 352
	Hungary	897 168	1 944 576	1 916 568	2 884 041	3 178 980	3 496 878	1 128 996	2 432 388	2 262 636	3 171 916	3 532 200	3 885 420
	Iceland	m	3 100 440	4 264 973	m	6 630 444	7 301 174	m	3 198 000	4 104 000	m	7 187 328	7 758 963
	Ireland	33 729	48 725	57 981	57 981	62 663	64 096	33 729	48 725	57 981	57 981	62 663	64 096
	Israel	76 995	83 744	104 947	143 219	153 229	154 060 [b]	75 873	81 353	95 187	119 107	149 269	166 815
	Italy	22 836	27 487	30 121	30 340	31 707	31 707	23 518	28 259	30 966	31 189	32 588	32 588
	Japan	6 645 000	6 236 000	5 555 000	5 535 000	5 619 000	5 601 000	6 649 000	6 237 000	5 555 000	5 535 000	5 619 000	5 601 000
	Korea	m	39 616 000	41 907 257	50 482 920	57 639 740	58 282 300	m	39 616 000	41 907 257	49 762 920	56 919 740	58 282 300
	Latvia	1 321	2 321	4 069	5 040	a	a	1 321	2 321	4 069	5 040	a	a
	Lithuania	m	m	m	9 031	16 727	18 118	m	m	m	9 031	16 727	18 118
	Luxembourg	m	81 258	99 782	111 118	106 005	107 988	m	81 258	99 782	111 118	106 005	107 988
	Mexico	141 093	203 399	268 456	350 283	465 340	465 340	m	m	m	514 509	692 596	713 164
	Netherlands	m	m	m	61 556	69 554	71 036	m	m	m	61 556	69 554	71 036
	New Zealand	m	m	m	71 780	83 000	85 490	m	m	m	74 460	83 000	85 490
	Norway	m	327 500	386 000	460 850	536 800	538 500	m	364 000	434 700	524 400	588 100	590 000
	Poland	m	31 216	40 120	47 645	58 441	61 952	m	31 216	40 120	47 645	58 441	61 952
	Portugal	m	24 759	27 038	26 321	28 857	28 886	m	24 759	27 038	26 321	28 857	28 886
	Slovak Republic	m	m	7 492	9 794	12 258	12 642	m	m	7 492	9 794	12 258	12 642
	Slovenia	14 123	21 465	27 164	25 550	29 333	30 752	14 123	21 465	27 164	25 550	29 333	30 752
	Spain	m	32 293	38 613	36 153	39 440	40 034	m	32 293	38 613	36 153	39 440	40 034
	Sweden [4]	m	290 400	m	387 018	476 886	m	m	313 600	m	401 400	478 800	m
	Switzerland	m	m	m	m	m	m	m	m	m	m	m	m
	Türkiye	4 813	17 402	28 883	43 762	80 027	91 841 [b]	4 813	17 402	28 883	43 762	80 027	91 841 [b]
	United States [4, 5]	43 834	47 215	55 919	62 369	66 105	67 626	43 918	49 467	55 724	61 327	65 248	66 750
	Other Participants												
	Flemish Comm. (Belgium)	31 191	35 417	40 042	43 842	46 673	47 983	39 886	45 301	51 454	56 311	59 946	61 629
	French Comm. (Belgium)	30 327	33 802	38 610	42 425	45 056	46 043	39 040	43 519	49 764	54 499	57 869	59 112
	England (UK) [3]	30 018	33 978	35 929	37 496	41 687	42 833	30 018	33 978	35 929	37 496	41 687	42 833
	Scotland (UK)	22 743	29 827	33 666	34 887	40 206	41 412	22 743	29 827	33 666	34 887	40 206	41 412
Partners	Argentina	m	m	m	m	m	m	m	m	m	m	m	m
	Brazil	m	m	m	m	m	m	m	m	m	m	m	m
	China	m	m	m	m	m	m	m	m	m	m	m	m
	India	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	m	m	m	m	m	m	m	m	m	m	m
	Saudi Arabia	m	m	m	m	m	m	m	m	m	m	m	m
	South Africa	m	m	m	m	m	m	m	m	m	m	m	m

Note: Years 2006 to 2009, 2011 to 2014 and 2016 to 2019 (i.e. Columns 3-6, 8-11, 13-16, 21-24, 26-29, 31-34, 39-42, 44-47, 49-52, 57-60, 62-65 and 67-70) are available for consultation on line (see StatLink below). The definition of teachers' most prevalent qualifications is based on a broad concept, including the typical ISCED level of attainment and other criteria. In many cases, the minimum qualification is the same as the most prevalent qualification; see Table X3.D3.2 in Annex 3. Please see Annex 2 and Definitions and Methodology sections for more information. Data and more breakdowns available at http://stats.oecd.org, Education at a Glance Database.

1. Data on salaries for countries now in the euro area are shown in euros.
2. Figures for the pre-primary level refer to primary teachers (in primary schools only) teaching pre-primary classes.
3. Break in time series following methodological changes in 2018 and 2019.
4. Actual base salaries.
5. The most prevalent qualification for pre-primary and primary teachers in 2000 was a bachelor's degree or equivalent (ISCED level 6) while the most prevalent qualification for later years was a master's degree or equivalent (ISCED level 7).

Source: OECD (2022). See *Source* section for more information and Annex 3 for notes (https://www.oecd.org/education/education-at-a-glance/EAG2022_X3.pdf).

Please refer to the Reader's Guide for information concerning symbols for missing data and abbreviations.

StatLink https://stat.link/1fhvs3

Annex 3. Introduction to Sources, methods and technical notes

Annex 3 on **Source**s and methods is available in electronic form only. It can be found at:

https://www.oecd.org/education/education-at-a-glance/EAG2022_X3.pdf

Tables X3.A. Sources, methods and technical notes for Chapter A

Tables X3.A1. Sources, methods and technical notes for Indicator A1	
Table X3.A1.1	Codes from ISCED 2011 used for describing educational levels
Table X3.A1.2	National data collection sources and reliability thresholds for the NEAC questionnaire
Table X3.A1.3	Educational attainment and associated standard errors, by age group and gender (2021)
Table X3.A1.4	Changes in the survey methodology and time series breaks in the NEAC questionnaire due to the COVID-19 pandemic
Tables X3.A2. Sources, methods and technical notes for Indicator A2	
Table X3.A2.1	National data collection sources and reliability thresholds for the TRANS questionnaire
Table X3.A2.2	Percentage of young adults in education/not in education and associated standard errors, by age group, gender and work status (2021)
Table X3.A2.3	Changes in the survey methodology and times series breaks in the TRANS questionnaire due to the COVID-19 pandemic
Tables X3.A3. Sources, methods and technical notes for Indicator A3	
Table X3.A3.1	Employment rates and associated standard errors, by age group, educational attainment and gender (2021)
Table X3.A3.2	Unemployment rates and associated standard errors, by age group, educational attainment and gender (2021)
Table X3.A3.3	Multilevel logistic regression analysis of the probability of being overqualified among tertiary-educated workers
Tables X3.A4. Sources, methods and technical notes for Indicator A4	
Table X3.A4.1	National data collection sources and reliability thresholds for the Earnings questionnaire
Table X3.A4.2	Data coverage for the Earnings questionnaire
Table X3.A4.3	Treatment of individuals with zero or negative earnings in the Earnings questionnaire
Table X3.A4.4	Actual earnings of full- and part-time workers, by age group, educational attainment and gender (2020)
Table X3.A4.5	Actual earnings of full-time full-year workers, by age group, educational attainment and gender (2020)
Table X3.A4.6	Changes in the survey methodology and times series breaks in the Earnings questionnaire due to the COVID-19 pandemic

Note: All tables in Annex 3 are available on line, see the StatLink below

StatLink https://stat.link/sqgt5h

Tables X3.B2. Metadata on early childhood education systems for Indicator B2

Table X3.B2.1	Share of children aged 3 to 5 years among children of all ages enrolled, by level of education (2019)
Table X3.B2.2	Early childhood education and care programmes in OECD and partner countries
Table X3.B2.3	Duration and intensity of early childhood education and care programmes in OECD and partner countries
Table X3.B2.4	Staff qualification requirements in early childhood education and care programmes in OECD and partner countries

Note: All tables in Annex 3 are available on line, see the StatLink below

StatLink https://stat.link/0opnw2

Table X3.B5. Sources, methods and metadata on how many students complete tertiary education for Indicator B5

Table X3.B5.1	Sources and scope of data on tertiary completion rates
Table X3.B5.2	Examinations/tests/additional criteria to determine entry/admission to first-degree tertiary programmes
Table X3.B5.3	National policies and contextual information related to tertiary completion rates
Table X3.B5.4	Impact of the COVID-19 pandemic on graduation criteria and completion rates

Note: All tables in Annex 3 are available on line, see the StatLink below

StatLink https://stat.link/rcz0h4

Most of the indicators in Chapters B, C and D are calculated using the UOE data collection. The tables below contain information on the sources and methodology for each of the UOE questionnaires, as well as relevant technical notes.

Tables X3.UOE.ENRL. Sources, methods and technical notes for UOE enrolment data in Indicators B1, B2, B6 and the *Education at a Glance Database*

INST	This sheet compiles all countries comments and missing data in ENRL1A-INST and ENRL1B-INST
AGE	This sheet compiles all countries comments and missing data in ENRL2-AGE&FP and ENRL3-AGE&P
FIELD	This sheet compiles all countries comments and missing data in ENRL4-FIELD and ENRL5-MOB&FIELD
COUNTRY	This sheet compiles all countries comments and missing data in ENRL6-MOB&COUNTRY
REPEATER	This sheet compiles all countries comments and missing data in ENRL7-REP
GRADE	This sheet compiles all countries comments and missing data in ENRL8-GRADE
ADULT	This sheet compiles all countries comments and missing data in ENRL9-ADULT
METADATA	This sheet compiles all countries selected information in Val_Metadata

Note: The Education at a Glance database can be found at http://stats.oecd.org/. All tables in Annex 3 are available on line, see the StatLink below.

StatLink https://stat.link/q9jolp

Table X3.UOE.ENTR. Sources, methods and technical notes for UOE entrants data in Indicator B4 and the *Education at a Glance Database*

AGE	This sheet compiles all countries comments and missing data in ENTR1-Age and ENTR2-Mobile&Age
FIELD	This sheet compiles all countries comments and missing data in ENTR3-Field
METADATA	This sheet compiles all countries selected information in Val_Metadata

Note: The Education at a Glance database can be found at http://stats.oecd.org/. All tables in Annex 3 are available on line, see the StatLink below.

StatLink https://stat.link/zl3asd

Table X3.UOE.GRAD. Sources, methods and technical notes for UOE graduates data in Indicator B3 and the *Education at a Glance Database*

INST	This sheet compiles all countries comments and missing data in GRAD1-INST
AGE	This sheet compiles all countries comments and missing data in GRAD2-AGE, GRAD3-FIRST&AGE and GRAD4-MOB&AGE
FIELD	This sheet compiles all countries comments and missing data in GRAD5-FIELD and GRAD6-MOB&FIELD
COUNTRY	This sheet compiles all countries comments and missing data in GRAD7-MOB&COUNTRY
METADATA	This sheet compiles all countries selected information in Val_Metadata

Note: The Education at a Glance database can be found at http://stats.oecd.org/. All tables in Annex 3 are available on line, see the StatLink below.

StatLink https://stat.link/x9jgwm

Table X3.UOE.PERS. Sources, methods and technical notes for UOE personnel data in Indicators B2, D8 and the *Education at a Glance Database*

STUD	This sheet compiles all countries comments and missing data in PERS1-STUD
INST	This sheet compiles all countries comments and missing data in PERS2-INST
AGE	This sheet compiles all countries comments and missing data in PERS3-AGE
MANAGEMENT	This sheet compiles all countries comments and missing data in PERS4-MANA
METADATA	This sheet compiles all countries selected information in Val_Metadata

Note: The Education at a Glance database can be found at http://stats.oecd.org/. All tables in Annex 3 are available on line, see the StatLink below.

StatLink https://stat.link/l130ch

Tables X3.UOE.FIN. Sources, methods and technical notes for UOE education finance data in Chapter C and the *Education at a Glance Database*

METADATA	General information on the data collected through the UOE Finance questionnaire
FIN_STUDENTS	Number of students with coverage adjusted to statistics on educational finance by type of institution
FIN1_SOURCE	Educational expenditure by level of education, source and destination
FIN2_NATURE	Education expenditure by level of education, type of institution and nature

Note: The Education at a Glance database can be found at http://stats.oecd.org/. All tables in Annex 3 are available on line, see the StatLink below.

StatLink https://stat.link/1rn6ye

Tables X3.D3. Sources, methods and technical notes for Indicator D3

Table X3.D3.1	Sources and reference period for statutory and actual salaries of teachers and school heads
Table X3.D3.2	Participation in subnational data collection on salaries of teachers (2021)
Table X3.D3.3	Definition of minimum, most prevalent and maximum qualification level for teachers (2021)
Table X3.D3.4	Number of salary scales used for teachers, by level of education (2021)
Table X3.D3.5	Reporting of social/pension contributions in statutory salaries of teachers and school heads (2021)
Table X3.D3.6	Additional payments that all teachers and school heads receive on top of their base salaries (2021)
Table X3.D3.7	Salaries of teachers and school heads in private institutions compared to public institutions (2021)
Table X3.D3.8	Teachers' statutory starting salaries relative to earnings of recent tertiary graduates (2018)

Note: All tables in Annex 3 are available on line, see the StatLink below

StatLink https://stat.link/vub723

Tables X3.D4. Sources, methods and technical notes for Indicator D4

Table X3.D4.1	Sources and reference period (school year) for teaching and working time of teachers and school heads
Table X3.D4.2	Definition of working time of teachers (2021)
Table X3.D4.3	Nature the reported data on teaching time and working time of teachers (2021)
Table X3.D4.4	Impact of days of professional development and non-school based student examinations on teachers' statutory teaching time data (2021)
Table X3.D4.5	Actual teaching time (2020)
Table X3.D4.6	Impact of days of professional development and non-school based student examinations on teachers' actual teaching time data (2021)
Table X3.D4.7	Definition of school heads' working time (2021)
Table X3.D4.8	Nature the reported data on working time of school heads (2021)
Table X3.D4.9	Definition of school heads' teaching time and conditions (2021)

Note: All tables in Annex 3 are available on line, see the StatLink below

StatLink https://stat.link/9nx08w

Tables X3.D6. Sources, methods and technical notes for Indicator D6

Table X3.D6.1	Sources and reference period for statutory and quantitative data on pathways to becoming teachers and school heads
Table X3.D6.2	Percentage of fully-qualified teachers (2021)
Table X3.D6.3	Notes on interpretation and methodology related to quantitative data on proportion of teachers displayed in Indicator D6 (2021)
Table X3.D6.4	Changes in regulations regarding pathways to becoming teachers and school heads since 2014

Note: All tables in Annex 3 are available on line, see the StatLink below

StatLink https://stat.link/cjho8k

Tables X3.D7. Sources, methods and technical notes for Indicator D7

Table X3.D7.1	Sources and reference period for statutory and quantitative data on professional development of teachers and school heads
Table X3.D7.2	Changes in regulations regarding professional development of teachers and school heads since 2014

Note: All tables in Annex 3 are available on line, see the StatLink below

StatLink https://stat.link/u3ihbs

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Many people have contributed to the development of this publication.

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Education Indicators in Focus

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